

This document is intended for installers, set-up technicians and IT professionals of the WaveLinx system

ATTENTION



Engage appropriate network security professionals to ensure all lighting control system hardware and servers are secure for access.

Ensure IT professionals review the WaveLinx network architecture document found at www.cooperlighting.com.

Network security is an important issue. Typically, the IT organization must approve configurations that expose networks to the Internet. Be sure to fully read and understand customer IT Compliance documentation.

DISCLAIMER OF LIABILITY: Cooper Lighting Solutions assumes no liability for damages or losses of any kind that may arise from the improper, careless, or negligent installation, handling or use of the products.

IMPORTANT: This manual provides information on the installation and operation of WaveLinx system. For proper operation it is important to follow the installation instructions for each product/component.

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Welcome and Introduction

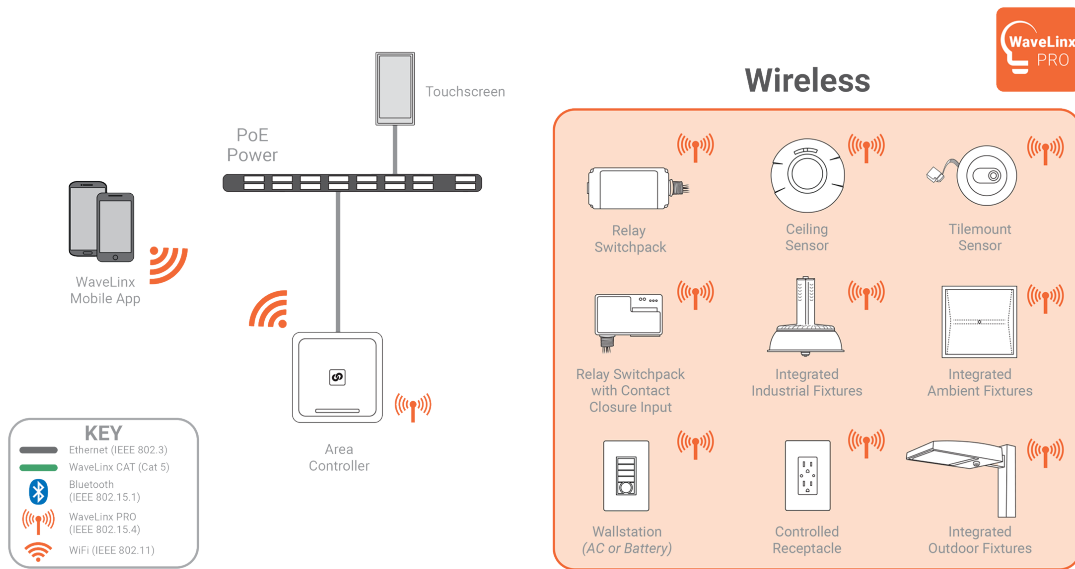
WaveLinx is a smart lighting system that helps organizations drive down energy costs while creating healthier spaces, indoors and outdoors. The system is easy to program and manage using the apps described in this user guide. It offers design flexibility, too. Choose from wired and wireless control devices and connected luminaires.

The WaveLinx system is scalable, allowing control from very simple stand-alone spaces to larger applications involving multiple floors, buildings, and even multiple locations.

WaveLinx PRO

WaveLinx PRO is a distributed wireless lighting control system that operates in a WaveLinx system. The WaveLinx Area Controller directly communicates with WaveLinx PRO devices using IEEE 802.15.4 wireless communications.

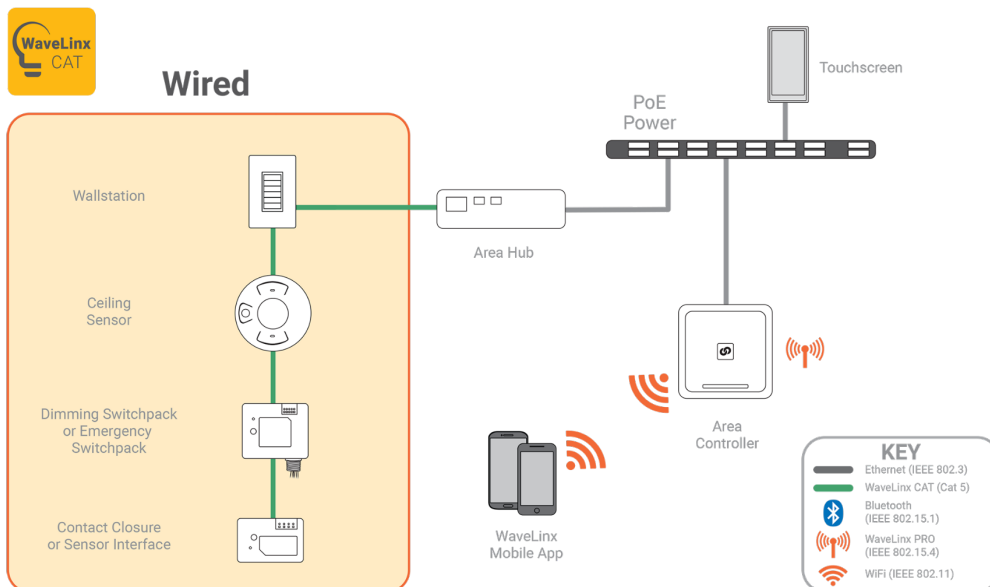
Small space application: WaveLinx with PRO Devices



WaveLinx CAT

WaveLinx offers wired control devices that communicate with each other over a category 5 cable using WaveLinx CAT, a proprietary digital communication. While WaveLinx CAT devices can operate on their own in a standalone room-by-room system, the WaveLinx Area Hub can be added to allow the room-by-room systems to be combined for operation in a larger WaveLinx system.

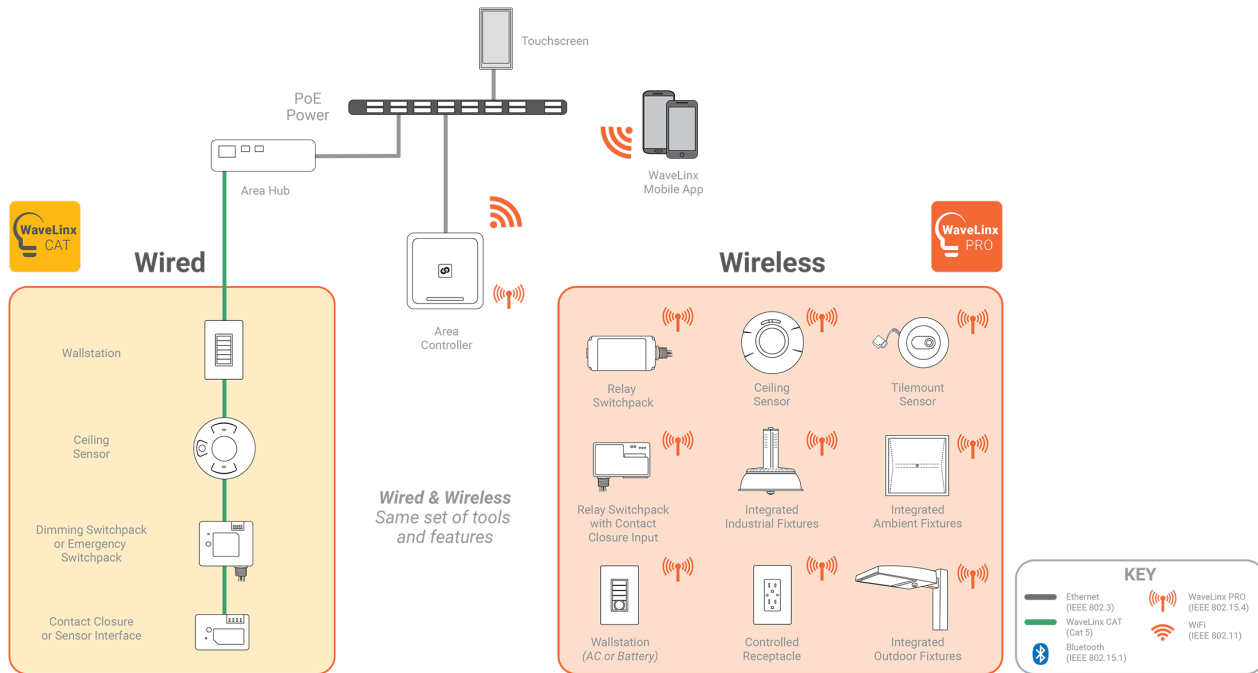
Small space application: WaveLinx with CAT Devices



WaveLinx with PRO and CAT Devices

WaveLinx CAT and WaveLinx PRO devices can be combined in the same system for a solution for larger spaces.

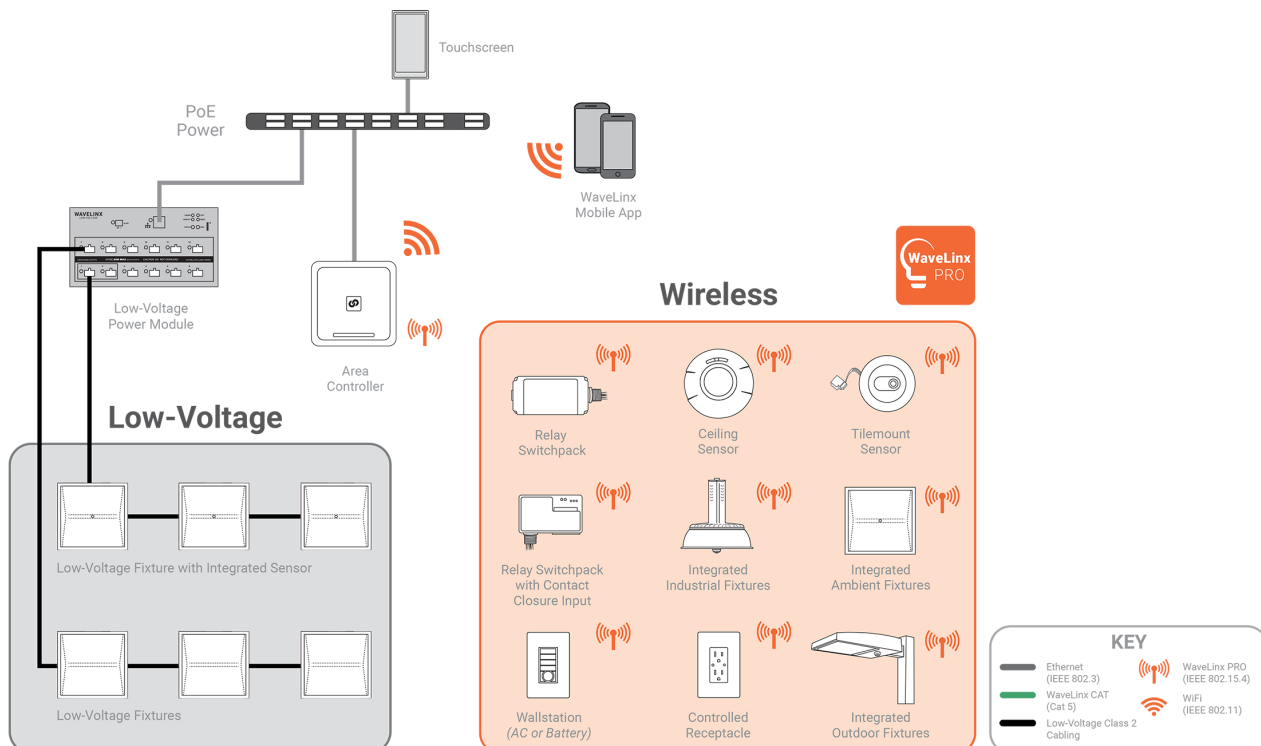
Larger space application: WaveLinx with CAT and PRO Devices



Adding WaveLinx LV

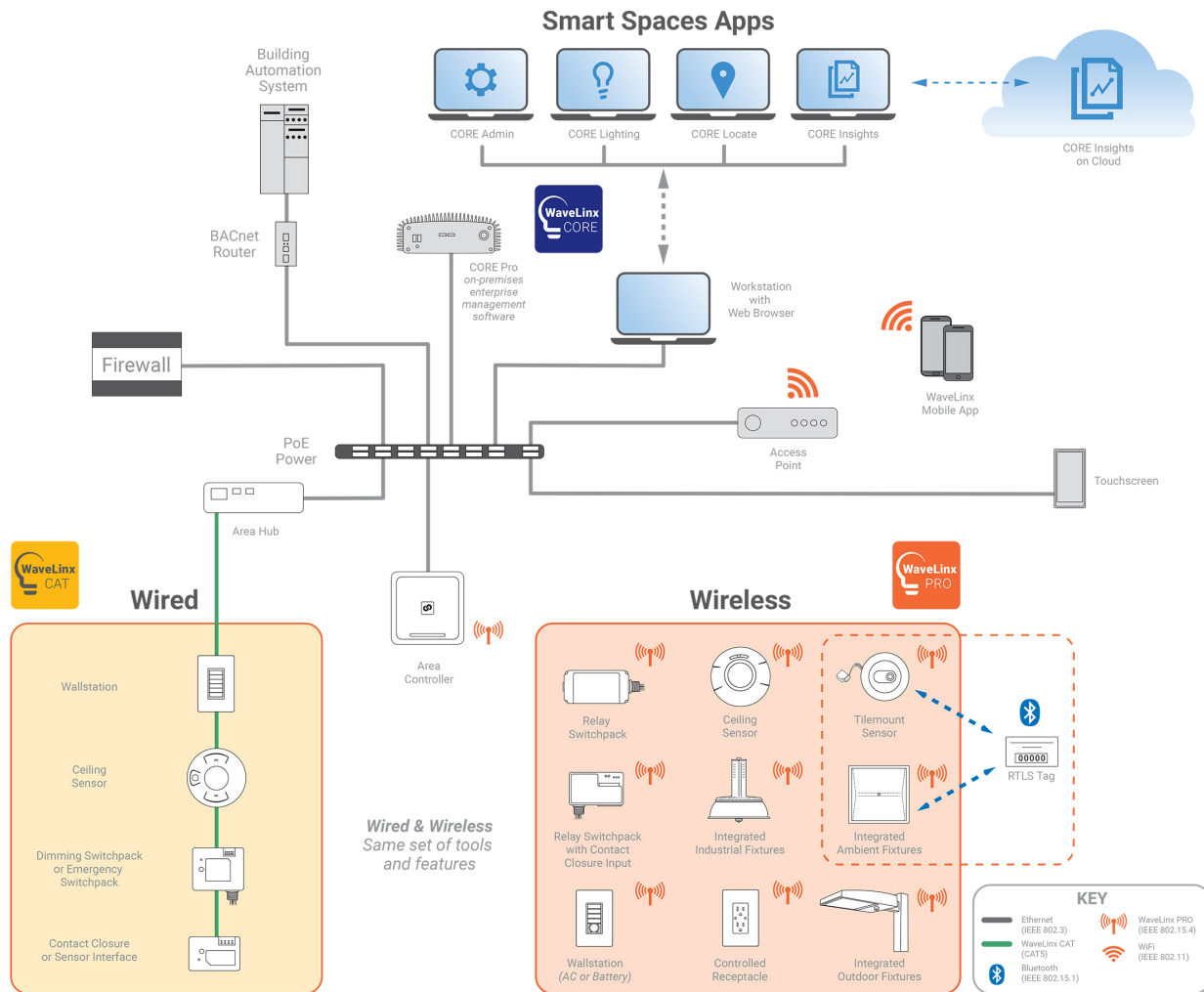
WaveLinx also offers wired low-voltage lighting (WaveLinx LV) that can be used in conjunction with WaveLinx PRO and WaveLinx CAT devices. WaveLinx LV luminaires can optionally contain integrated sensors. Sensors and luminaires receive low voltage power and route communications through a WaveLinx Low-Voltage Power Module which communicates to the WaveLinx Area Controller.

WaveLinx with LV and PRO Devices



WaveLinx CORE

Larger spaces can be brought together for management and efficiency using WaveLinx CORE. WaveLinx CORE leverages the data generated by WaveLinx PRO sensors and connected luminaires to improve operational efficiency and optimize experiences for occupants.



Regardless of what size system is being implemented, or which components are being used, it will be necessary to start by adding the devices to the appropriate WaveLinx Area Controller. Use this user manual to:

- Become familiar with WaveLinx system devices
- Prepare the WaveLinx Apps for first use
- Set up a new WaveLinx Area Controller for WaveLinx PRO, CAT, and LV devices
- Control lighting from the WaveLinx App
- Customize the WaveLinx default programming
- Configure a WaveLinx Touchscreen
- Perform administrator tasks to set the WaveLinx Area Controller system time, date, and location, change usernames and passwords, backup and restore databases (replacing a WaveLinx Area Controller), update software and firmware, and perform advanced network connection functions.
- Perform administrator tasks to update the Mobile App and replace WaveLinx devices.
- Perform administrator tasks to setup WaveLinx CAT Area Hubs.
- Perform administrator tasks to setup WaveLinx Low-Voltage Power Modules including changing or updating Ethernet settings, reconnecting communications to the WaveLinx Area Controller after IP Address changes, replacing a Low-Voltage Power Module, and unpairing and rebooting information.

For information on implementing WaveLinx CORE, please refer to the WaveLinx CORE User Guides.

Becoming Familiar with WaveLinX System Components

All WaveLinX systems using WaveLinX PRO, CAT or LV components require the use of an Area Controller.

WaveLinX Area Controller



WAC2

The WaveLinX Area Controller WAC2 [Gen 2] is the central communications coordinator for the version 14 WaveLinX system.¹ It coordinates communication to and from WaveLinX devices.

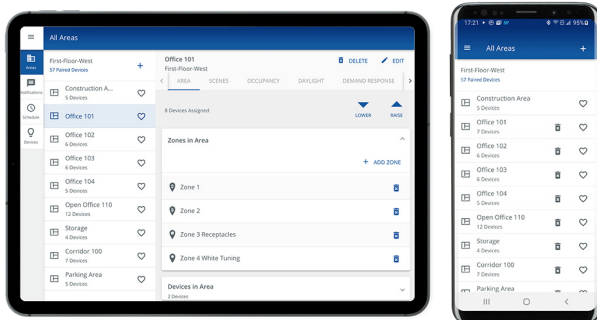
The WaveLinX Area Controller can operate as a stand-alone coordinator or may be connected to a building network with other WaveLinX Area Controllers to meet larger building requirements.

Installed as a stand-alone system, the WaveLinX Area Controller may use its internal wireless Wi-Fi access point to communicate to the WaveLinX Mobile App installed on a user provided iOS or Android smart phone/tablet or to a PC accessing the WaveLinX WAC Lighting App².

Installed in an Ethernet connected system or connected to the building network by Wi-Fi, each WaveLinX Area Controller operates independently for its paired devices, using the connected building network to communicate to the WaveLinX Mobile App or a PC accessing the WaveLinX WAC Lighting App.²

Administration and setup of the WaveLinX Area Controller and devices is performed using the WaveLinX Mobile App or the WaveLinX Area Controller Lighting App.²

WaveLinX Mobile App

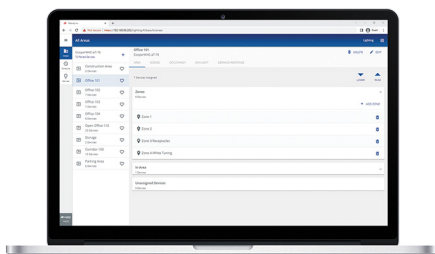


Use the WaveLinX Mobile App to set up the WaveLinX Area Controller. Once the WaveLinX Area Controller is programmed, the WaveLinX Mobile App can be used to control specific areas and zones in the facility, or to change the programmed behavior.

The WaveLinX Mobile App is supported on mobile devices running iOS 14+ or Android™ 11+ operating systems. Download the latest version of the WaveLinX Mobile App on the App Store® or get it on Google Play™. Install the mobile app on a smartphone or tablet.



WaveLinX Area Controller (WAC) Lighting App



The WaveLinX Area Controller Gen 2 contains internal webpages that offer the ability to login via PC or device with a supported web browser to administer the lighting programming through the WAC Lighting App. This feature requires a WAC2 with minimum software version 11.x.x.x.

The WaveLinX WAC Lighting App will have the same appearance and functionality as the WaveLinX Mobile App.

¹ WAC Gen 1 is not supported for version 14 software. The WaveLinX Mobile App will allow connection to a WAC Gen 1 unit with the latest Gen 1 firmware but connects through a browser based app rather than the Mobile App screens. Please refer to the User Guide for the WAC Gen 1 software version for details on expected configuration and operation.

² The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

WaveLinX CORE

Larger systems may optionally use WaveLinX CORE, a smart spaces platform. WaveLinX CORE uses CORE devices to communicate with the WaveLinX Area Controller(s) and displays the data to Smart Spaces Apps that manage the system, provide user management and backup, review data to see trends, and even track space usage and user/equipment locations in the facility. WaveLinX CORE also allows sharing of data through Third Party integration via BACnet.

In a WaveLinX CORE implementation, the initial WaveLinX Area Controller configuration and device management can be performed using the WaveLinX Mobile App or the WaveLinX WAC Lighting App³ discussed in this manual. The Area Controller(s) can then be added to WaveLinX CORE. Further use of WaveLinX CORE devices and Smart Space Apps is beyond the scope of this user guide. Refer to the specific materials for these products for information.

WaveLinX CORE Pro



WaveLinX CORE Enterprise



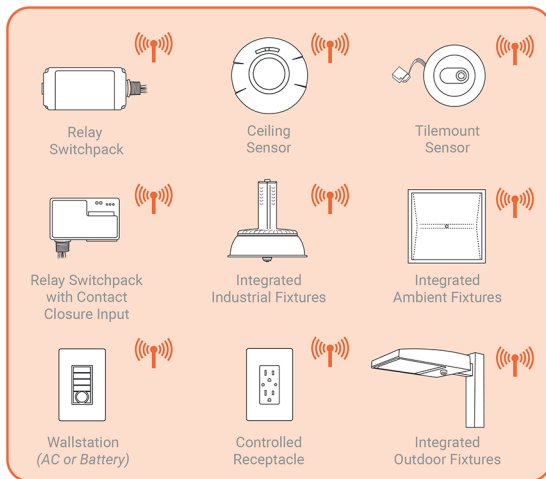
WaveLinX Virtual CORE Enterprise



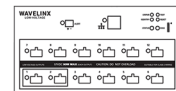
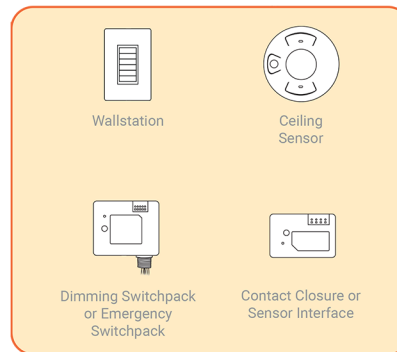
WaveLinX System Devices



Wireless

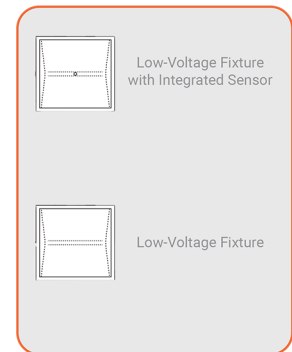


Wired



Low-Voltage
Power Module

Low-Voltage



WaveLinX devices communicate to the WaveLinX Area Controller for control and to provide information.

- WaveLinX PRO devices that communicate with the WaveLinX Area Controller directly using IEEE 802.15.4 wireless communications.
- Wired WaveLinX CAT devices communicate through an Area Hub via Ethernet to the Area Controller.
- WaveLinX LV devices communicate through a Low-Voltage Power Module via Ethernet to the Area Controller.
- Touchscreens also communicate to the WaveLinX Area Controller using Ethernet communications.

WaveLinX devices will vary by facility. Refer to the WaveLinX Device Reference Sheets for specific device information.

³ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.







WaveLinx Device Reference Sheets

This section contains information about each device used in the WaveLinx system. Each device will have a reference sheet describing the device and its general functionality. Additional details include specific information that will be used for reference throughout the manual. Once familiar with the general programming steps, the reference sheets can act as a quick reference guide for specific device behavior or programming details.

Each device reference sheet may include:

- A general description
- Out-of-the-box behavior
- Paired/added device default behavior
- LED behavior
- How to place the device into pairing mode and pairing mode behavior
- Supported identification methods and **Blink to Identify** behavior
- Specific details for programming supported device functions including but not limited to daylight calibration recommendations, white tuning configuration, input configuration, wallstation button default operations, etc.
- Special operating modes supported by the device
- Loss of communications behavior
- Return of power operation or battery change operation
- Factory reset instructions (returning to out-of-the-box state)
- Required initial configuration steps

WaveLinX Area Controller 2 (Gen 2) Reference Sheet

WaveLinX Area Controller 2 (Gen 2)																									
 <p>Features</p> <ul style="list-style-type: none"> Coordinates communication between WaveLinX Devices and WaveLinX App <ul style="list-style-type: none"> Built-in Wi-Fi for connection to WaveLinX Applications Built-in 802.15.4 for connection to WaveLinX PRO devices Built-in Ethernet for PoE power and LAN connection <ul style="list-style-type: none"> Connect to WaveLinX Low-Voltage Power Modules for control of WaveLinX LV devices Connect to up to 6 WaveLinX Area Hubs for control of WaveLinX CAT devices Optionally connects to WaveLinX CORE for use with: <ul style="list-style-type: none"> CORE Smart Space Applications BMS <p>Power:</p> <ul style="list-style-type: none"> Powered from PoE or PoE Injector <p>Typical Applications</p> <ul style="list-style-type: none"> Required for communication to WaveLinX Devices <p>Models:</p> <ul style="list-style-type: none"> WAC2: WaveLinX Area Controller (Gen 2) <p>WaveLinX App Details:</p> <ul style="list-style-type: none"> Default Device Name: <ul style="list-style-type: none"> CooperWAC-XX-XX <p>Icon Displayed in WaveLinX App:</p>  <p>A G2 icon will display at the top of the WaveLinX App for a Gen 2 WaveLinX Area Controller</p> 	<p>The WaveLinX Area Controller 2 (WAC2) is a central communications coordinator for the WaveLinX system. A WaveLinX Area Controller 2 can coordinate communication to up to 200 devices (150 best practice).</p> <p>The WaveLinX Area Controller 2 can operate as a stand-alone coordinator or may be connected to a building network with other WaveLinX Area Controllers to meet larger building requirements.</p> <p>WAC2 Details</p> <table border="1"> <thead> <tr> <th>Feature</th><th>Details</th></tr> </thead> <tbody> <tr> <td>Supported Devices</td><td> The WAC2 supports up to 200 WaveLinX Devices (150 best practice). <ul style="list-style-type: none"> All 200 devices may be WaveLinX PRO devices or WaveLinX CAT devices OR Up to 140 of the devices may be WaveLinX LV devices <ul style="list-style-type: none"> Example: 140 WaveLinX LV + 60 WaveLinX PRO or CAT = 200 Devices Up to 50 of the devices may be actively using RTLS functionality <ul style="list-style-type: none"> Example: 50 RTLS Devices + 150 WaveLinX PRO or CAT = 200 Devices Example: 50 RTLS Devices + 140 WaveLinX LV + 10 WaveLinX PRO or CAT = 200 Devices </td></tr> <tr> <td>Areas</td><td> The WAC2 supports up to 50 areas. <ul style="list-style-type: none"> 49 user defined areas plus 1 default construction area. </td></tr> <tr> <td>Zones</td><td> <ul style="list-style-type: none"> The WAC2 creates one default dimmable zone per area. The WAC2 supports up to 200 zones (including sub zones in partitioned areas) total. <ul style="list-style-type: none"> For a WAC2 being centrally managed by WaveLinX CORE, the maximum number of zones in an area should not exceed 30 zones. For a standalone WAC2 (not being centrally managed by WaveLinX CORE), areas are not limited to a certain quantity of zones. </td></tr> <tr> <td>Scenes</td><td>The WAC2 supports up to 16 scenes per standard area and 32 scenes per partitioned area.</td></tr> <tr> <td>Occupancy Sets</td><td>The WAC2 supports up to 100 occupancy sets amongst all defined areas (including occupancy sub sets in partitioned areas). Areas are not limited to a certain quantity of occupancy sets.</td></tr> <tr> <td>Closed Loop Daylighting</td><td>The WAC2 will create a closed loop daylight set when an applicable device is paired. Closed loop daylighting must be manually enabled.</td></tr> <tr> <td>Open Loop Daylighting</td><td>The WAC2 supports up to 6 open loop daylight sets per area using the following sensor types: WaveLinX Ceiling Sensor, WaveLinX Outdoor Lighting Control Module, Ambient, Industrial, and Outdoor Integrated Sensors⁴, Tilemount Sensor⁴. Open Loop Daylighting must be programmed.</td></tr> <tr> <td>Partitioning⁵</td><td>The WAC2 supports up to 2 partitioned areas. Each partitioned area can contain up to 10 partition walls or 10 subareas.</td></tr> </tbody> </table> <p>Out-of-the-Box</p> <p>Once power is applied, after a 1-minute boot-up period (approximate), the Power/Health LED, the 802.15.4 LED, and the Wi-Fi LED should illuminate and remain ON.⁶</p> <p>Loss of Communications Operation</p> <p>Please refer to the device reference sheets for the expected behavior upon loss of communications with the WaveLinX Area Controller.</p> <p>Operation upon Return of Power</p> <p>Upon return of power, after a 1-minute power up period (approximate), the WaveLinX Area Controller 2 will begin re-establishing connection with controlled devices. This process may take several minutes. Controlled devices will remain in their return of power state until the connection is re-established.</p> <p>How to Place in Pairing Mode:</p> <p>Pairing mode is used for WaveLinX PRO and WaveLinX LV devices.</p> <table border="1"> <thead> <tr> <th>Method</th><th>Description</th></tr> </thead> <tbody> <tr> <td>PAIR button</td><td> Press and release (1 second press) the PAIR button located on the side panel of the WaveLinX Area Controller.  </td></tr> <tr> <td>WaveLinX App</td><td> <ul style="list-style-type: none"> Login to the WaveLinX Area Controller. From the menu, select Devices. With the WaveLinX Area Controller selected, tap Actions, or locate the actions bar at the bottom of the mobile device screen. Select Enable Discover Devices. </td></tr> </tbody> </table> <p>The blue 802.15.4 LED on the WaveLinX Area Controller and the green LAN LED will blink at a rate of one blink per second to indicate the WaveLinX Area Controller is in pairing mode. The WaveLinX Area Controller pairing mode automatically times-out after 60 minutes or can be manually exited by pressing and releasing (1 second press) the PAIR button or by disabling Device Pairing from the WaveLinX App.</p>	Feature	Details	Supported Devices	The WAC2 supports up to 200 WaveLinX Devices (150 best practice). <ul style="list-style-type: none"> All 200 devices may be WaveLinX PRO devices or WaveLinX CAT devices OR Up to 140 of the devices may be WaveLinX LV devices <ul style="list-style-type: none"> Example: 140 WaveLinX LV + 60 WaveLinX PRO or CAT = 200 Devices Up to 50 of the devices may be actively using RTLS functionality <ul style="list-style-type: none"> Example: 50 RTLS Devices + 150 WaveLinX PRO or CAT = 200 Devices Example: 50 RTLS Devices + 140 WaveLinX LV + 10 WaveLinX PRO or CAT = 200 Devices 	Areas	The WAC2 supports up to 50 areas. <ul style="list-style-type: none"> 49 user defined areas plus 1 default construction area. 	Zones	<ul style="list-style-type: none"> The WAC2 creates one default dimmable zone per area. The WAC2 supports up to 200 zones (including sub zones in partitioned areas) total. <ul style="list-style-type: none"> For a WAC2 being centrally managed by WaveLinX CORE, the maximum number of zones in an area should not exceed 30 zones. For a standalone WAC2 (not being centrally managed by WaveLinX CORE), areas are not limited to a certain quantity of zones. 	Scenes	The WAC2 supports up to 16 scenes per standard area and 32 scenes per partitioned area.	Occupancy Sets	The WAC2 supports up to 100 occupancy sets amongst all defined areas (including occupancy sub sets in partitioned areas). Areas are not limited to a certain quantity of occupancy sets.	Closed Loop Daylighting	The WAC2 will create a closed loop daylight set when an applicable device is paired. Closed loop daylighting must be manually enabled.	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⁴ WaveLinX Integrated Sensor and Tilemount Sensor assignment for open loop control is contingent on the use of WAC2 (Gen 2) minimum version 10.0.x.x and updated device firmware.⁵ Partitioning requires the use of WAC2 (Gen 2) minimum version 14.1.x.x software.⁶ The green LAN LED may also illuminate if the controller is connected to a building LAN with a DHCP server. Other LEDs should remain OFF.

WaveLinx Area Controller 2 (Gen 2) continued

LED Operations



After power is applied, wait approximately 1 minutes for the WaveLinx Area Controller to fully boot before reviewing the LED status.

LED	Color/Pattern	Description
Connection Port LEDs	Green LED ON/Flashing	The WaveLinx Area Controller 2 is connected to the Ethernet and is connected to a 10/100Mb network.
	Orange LED ON/Flashing	The WaveLinx Area Controller 2 is connected to the Ethernet and is connected to a Gigabyte network.
	OFF	There is no connection to the Ethernet
Power/Health LED	Solid BLUE	The WaveLinx Area Controller is powered and operational.
	OFF	There is no power on the PoE connection or, if power is verified, the WAC2 is unable to boot due to a system error.
	Blinking BLUE	<ul style="list-style-type: none"> Short single blink then OFF: This occurs approximately 10-15 seconds after initial powerup or reboot. 50ms ON/50ms OFF repeated: This occurs while the WAC2 is rebooting. Flash three times 50ms ON/50ms OFF followed by 2 seconds OFF and then repeated: The WAC2 has received a firmware file and a firmware upgrade to the WAC2 is in process. 2 seconds ON/2 seconds OFF repeated: The WAC2 is performing firmware upgrades in connected devices.
WAN LED	OFF	Normal condition in stand-alone use. If used in a WaveLinx CORE system, the WAC2 has lost its connection to WaveLinx CORE.
	Solid GREEN	The WaveLinx Area Controller is connected to s WaveLinx CORE system.
	Blinking GREEN	The WAC2 is performing a data sync with the connected WaveLinx CORE system.
LAN LED	OFF	There is no connection from the building LAN, or the connection has been disabled or failed.
	Solid GREEN	The WaveLinx Area Controller is connected to the building LAN, has a static or dynamically assigned IP address, and is ready to communicate.
	Blinking GREEN	The LED will blink 1 second ON/ 1 second OFF repeated when the WAC2 is in pairing mode.
Wi-Fi LED	OFF	The Wi-Fi Access Point or Client have been disabled.
	Solid BLUE	The Wi-Fi Access Point has been enabled. The Wi-Fi Client is disabled.
	Blinking BLUE	<ul style="list-style-type: none"> Slow blink (1 second ON/1 second OFF repeated): The Wi-Fi Client is enabled and has an IP address. The Wi-Fi Access Point is disabled. Fast blink (250ms ON/250ms OFF repeated): Wi-Fi Access Point and Wi-Fi Client are both enabled and available.
PAN LED (BT)	OFF	LED should be OFF. This functionality is not currently in use.
802.15.4 LED	Solid BLUE	The 802.15.4 network communication is normal.
	OFF	The 802.15.4 network is not functional. The 802.15.4 LED should not be OFF. Verify unit is powered and has had time to fully power up (approx. 1 minute).
	Blinking BLUE	<ul style="list-style-type: none"> Slow blink (1 second ON/1 second OFF repeated): The WAC2 is in pairing mode. Fast blink (250ms ON/250ms OFF repeated): The WAC2 is in process of removing (unpairing) devices still in the construction area.

WaveLinx Area Controller 2 (Gen 2) continued

**WaveLinx Area Controller Pushbutton Functions**

The WaveLinx Area Controller 2 has two pushbuttons that allow for several administrative functions. These functions should be used with caution!



Function	Button	Press Length	WAC LED feedback	Device outcome
Enter Pairing Mode	Pair	Press and release (1 second)	802.15.4 and LAN LEDs flash	Paired devices will exhibit paired behavior described in the device reference sheets. Unpaired PRO and LV devices can pair with the WaveLinx Area Controller if they are in pairing mode.
Exit Pairing Mode (if pairing mode is still active)	Pair	Press and release (1 second)	802.15.4 LED ON steady LAN LED returns to OFF or ON dependent on connection to Ethernet and configuration.	Paired PRO and LV devices will start operation within the construction grouping. Lighting still in the default construction area will turn on to a 100% level or operate from paired wallstations and occupancy sensor controls.
Remove Unassigned Devices	Pair	Press and hold for 4 seconds recommended (>2 sec. to <=10 sec.)	802.15.4 LED flashes rapidly (.25 sec ON/.25 sec OFF) when the button is held for the allotted time and continues until the devices have been commanded to leave the network. 802.15.4 LED will turn ON steady once there are no devices remaining in the Construction Area.	Devices still in the default construction area will leave the WaveLinx network.
Reboot/Soft Reset	Reset (Inset Button)	Press and release (1 second)	All LEDs turn OFF after button release. As device reboots, LEDs may turn ON and OFF during reboot. Once reboot completes (approximately 1 minute), Power/Health LED and 802.15.4 LED should be ON steady. Other LEDs may also be on dependent on WAC2 configuration.	Devices will remain in previous commanded state during reboot, rejoin the WAC2 upon reboot completion and continue their normal behavior. Programmed settings are retained during a reboot.
Authentication and Wi-Fi Configuration Reset	Reset (Inset Button)	Press and hold for 4 seconds recommended (>2 sec. to <= 5 sec.)	Wi-Fi LED flashes rapidly (.25 sec ON/.75 sec OFF) when the button is held for the allotted time. Wi-Fi LED turns OFF for 1 second when button is released and then blinks .5sec ON/.5 sec OFF for 5 seconds while the WAC2 clears the settings. Wi-Fi LED turns ON steady when process is complete.	No effect on devices. The following data will be cleared and reset to factory defaults: <ul style="list-style-type: none"> • Wi-Fi Access Point settings • Wi-Fi Client settings • Admin password
Factory Reset	Reset (Inset Button)	Press and hold for 8 seconds recommended (>5 sec. to <=10 sec.)	The Wi-Fi LED starts flashing after 2 seconds. All the LEDs except for BT will flash (.5 seconds ON/.5 seconds OFF) when the button is held for the allotted time. The Power/Health LED will turn OFF when the button is released, and other LEDs will stop flashing. After a short delay, additional LEDs may turn OFF and the WAC will reboot. Once reboot completes (approximately 1 minute), Power/Health LED and 802.15.4 LED, and the Wi-Fi LED should be ON steady. Other LEDs may also be on dependent on connections.	All programming will be cleared for the WaveLinx Area Controller and reset to factory defaults including: <ul style="list-style-type: none"> • Removing all 802.15.4 device pairing • All user accounts • Clearing user-uploaded custom certificates • Network configuration including: <ul style="list-style-type: none"> • Wi-Fi client settings • Wi-Fi access point settings • Ethernet settings • Clearing all programming including area and zone designations • Resetting WAC name to default

Initial Configuration Steps for the WaveLinX Area Controller 2 (Gen 2)

WaveLinX Area Controller 2 (Gen 2) continued



Initial Configuration Steps for WAC2 (Gen 2)

The steps in this section should be completed before pairing devices to the WaveLinX Area Controller 2.

Use this section to:

- Connect to the WaveLinX Area Controller Webpage
- Set the Clock Parameters
- Set the IP address of the WaveLinX Area Controller 2

Step 1: Connect to the WaveLinX Area Controller 2 Webpage

The steps in this section assume that the WaveLinX Area Controller 2 has not been connected to a building network and is still in its factory default state for wireless name and username/password. If the WaveLinX Area Controller is connected to the building network, or the wireless name and password has been changed from the default, please refer to the network administrator for access information.

1: Make sure that the mobile device or computer being used has wireless connectivity and has a current version web browser installed. The WaveLinX internal webpage configuration is accessed using a web browser.

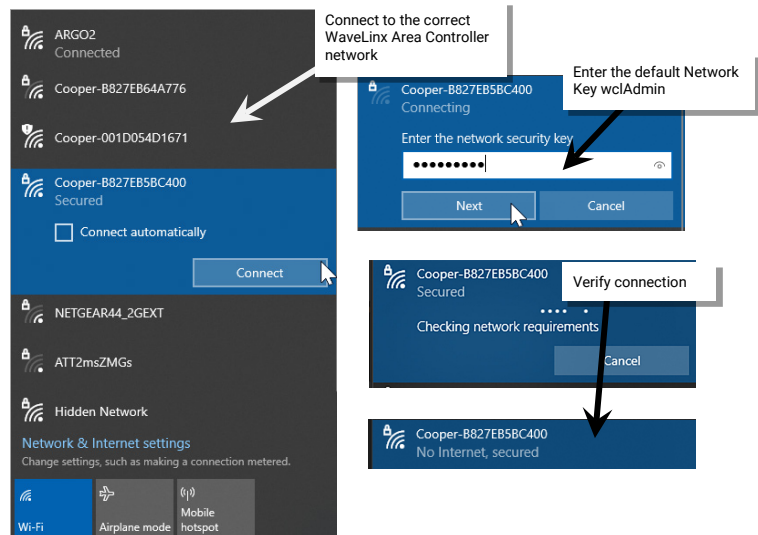
2: Go to the location of the WaveLinX Area Controller. Verify that the unit is powered and that the Power/Health LED, 802.15.4 LED and Wi-Fi LED are illuminated (other LEDs may also be illuminated depending on connections).

On the front plate of the WaveLinX Area Controller locate the label with the MAC ID. Make note of the MAC ID shown.



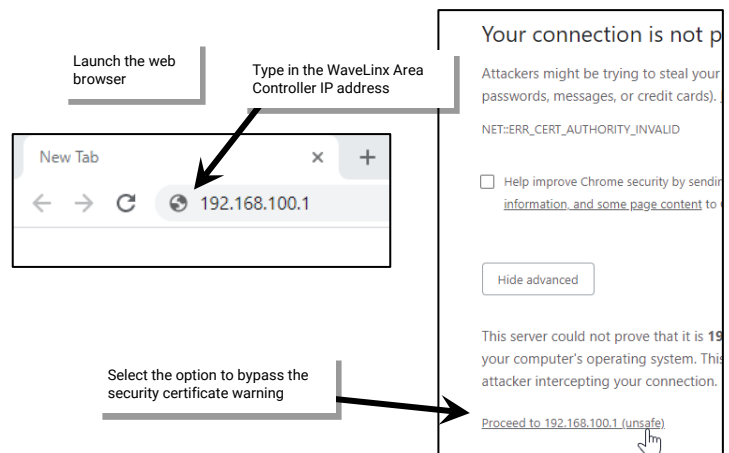
3: Turn on the mobile device or computer Wi-Fi and display the available Wi-Fi networks. Select the network, **Cooper-XXXXXXXXXX**, where X is the MAC address on the controller's label.

Enter the Network Key **wclAdmin** when prompted matching the case shown and join the network



4: Open the web browser and enter the IP address of the WaveLinX Area Controller in the address bar. (The default IP address is 192.168.100.1)

The first time the WaveLinX Area Controller is accessed, the browser may display message windows regarding the site security certificate. The display and wording of these messages may differ between web browsers. Locate the option to bypass the warning to proceed to the site.



WaveLinx Area Controller 2 (Gen 2) continued



5: In the log in screen, enter the username and password for the administrator user.⁷

- Default Username: **WclAdmin**
- Default Password: **wclAdmin**

6: If this is the first login, the system will force a password change. When prompted, submit a new password for the administrative user.

Set a complex password when changing passwords, making sure it is something that can be remembered.

IMPORTANT! REMEMBER THE NEW PASSWORD AS IT WILL BE USED FOR ALL FUTURE ADMINISTRATOR LOGINS FOR THE INTERNAL WEBPAGE AND FOR THE MOBILE APPLICATION.

7: Next, login using the WclAdmin user with the newly assigned password.

The system will force a Wi-Fi Access Point Network Key (password) change.

When prompted, submit a new Network Key. Set a complex Network Key when changing it, making sure it is something that can be remembered.

IMPORTANT! REMEMBER THE NEW NETWORK KEY AS IT WILL BE USED FOR ALL MOBILE DEVICE OR COMPUTER CONNECTIONS TO THE WI-FI ACCESS POINT ON THIS WAVELINX AREA CONTROLLER.

8: The WaveLinx Area Controller will automatically reboot. Close the web browser window.

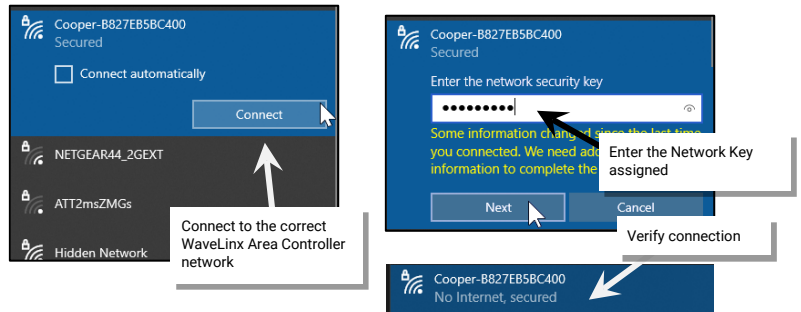
Wait until the reboot is complete. The Power/Health LED, 802.15.4 LED and Wi-Fi LED will be ON indicating it is ready (other LEDs may also be illuminated depending on connections).

⁷ If the username and password have been changed, use the updated username or password when logging in.

WaveLinX Area Controller 2 (Gen 2) continued



9: Re-connect to the WaveLinX Area Controller's Wi-Fi Access Point. When prompted, enter the new Network Key assigned.



10: Re-open the web browser and enter the IP address of the WaveLinX Area Controller in the address bar. (The default IP address is 192.168.100.1.)

Login using the **WclAdmin** administrator user, entering the newly assigned password.

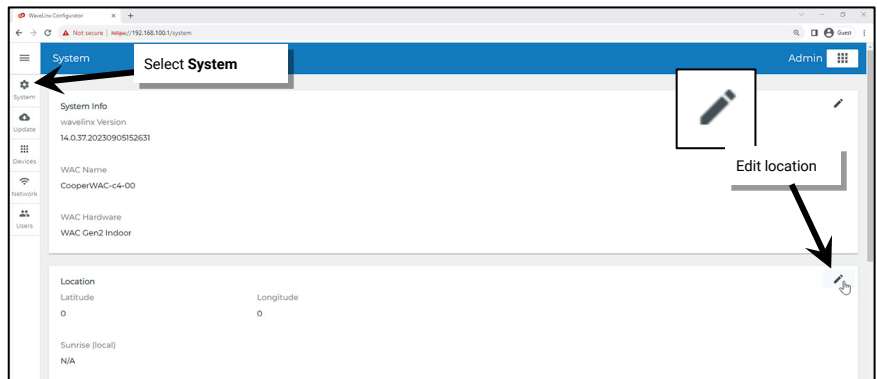
Proceed to the next step.



Step 2: Set the WaveLinX Area Controller Clock

The WaveLinX Area Controller clock settings need to be set for the site. This includes the location, time, date, and time zone settings. These settings are found within the system webpage. In the event of a power loss, the time and date will be retained for up to 48 hours. If power is lost for longer than a 48-hour period, the settings will need to be refreshed once power is restored.

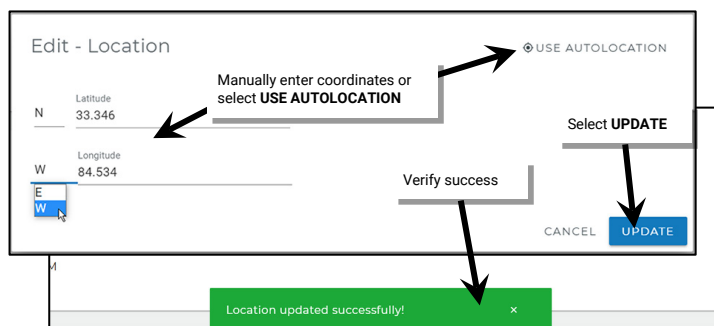
1: In the WaveLinX Area Controller's webpage, select the **System** page and then select the pencil icon in the location section to open it for editing.



2: Set the location using either the auto location feature or by manually entering the coordinates.

- Auto-Location: Can be used if the computer is connected to a network that allows for GPS location. Fields will automatically populate with the coordinates.
- Manually enter: Manually enter the coordinates after determining the latitude and longitude for the site.

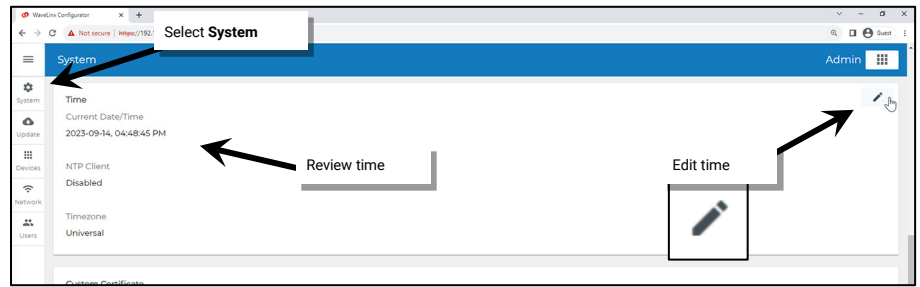
Select **UPDATE** to save the coordinates. A success message will appear once completed.



WaveLinx Area Controller 2 (Gen 2) continued



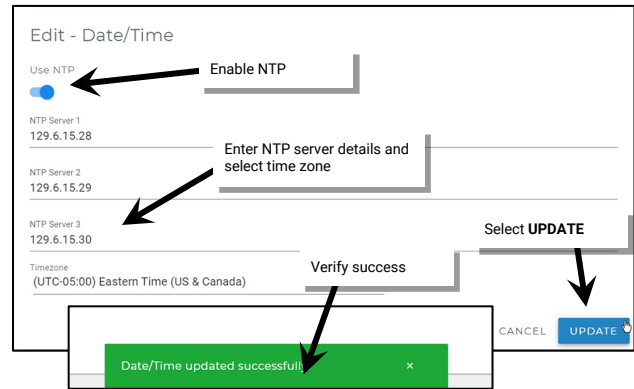
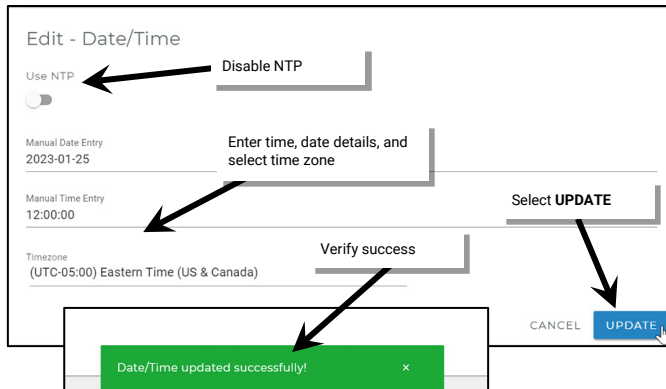
3: In the system page, review the current time, date, and time zone. If they are not correct, select the pencil icon to edit.



4: Update the time information by either entering the data manually or entering the NTP server details.

- **Enter manually:** Disable the **Use NTP** slider and enter the date (year-month-day YYYY-MM-DD format) and time fields (Use 24-hour military clock format to distinguish AM from PM). Click the time zone drop down and select the proper time zone.
- **Use NTP:** If the WaveLinx Area Controller is connected to a building network that uses a network time protocol (NTP) server, enable the **Use NTP** slider and fill in the NTP server address details. NTP servers do not set the time zone field. Manually set the time zone using the provided time zone drop down.

Click **UPDATE** to save the coordinates to the WaveLinx Area Controller. A success message will appear once completed.



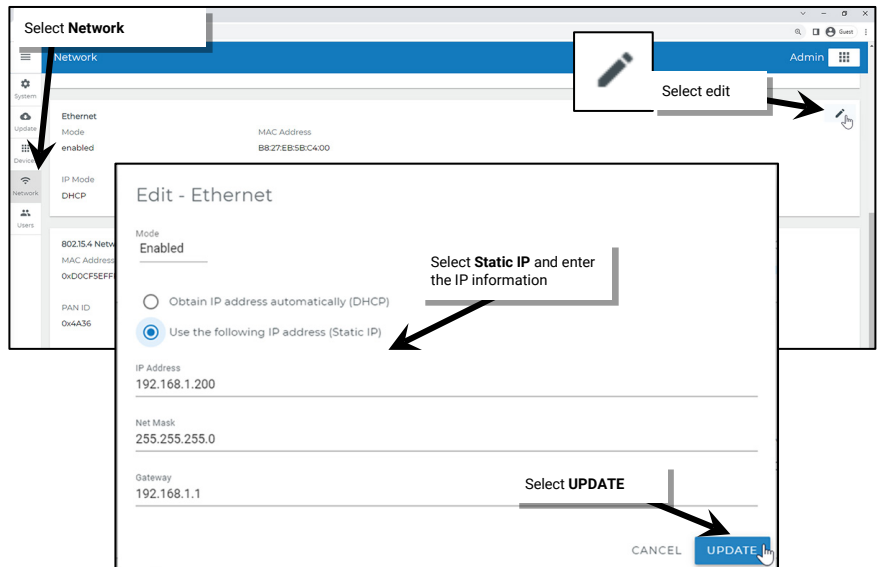
Step 3: Set the IP Address of the WaveLinx Area Controller

The WaveLinx Area Controller is set to DHCP by default. If using DHCP for IP addressing, skip this step. Follow the steps below only if assigning a static IP address.

1: Select the **Network** page and then click on the pencil icon in the **Ethernet** section to edit.

2: Disable **DHCP** and manually enter the desired IP address, subnet mask and default gateway. Select **UPDATE** to send the settings to the WaveLinx Area Controller.

Verify that the WaveLinx Area Controller is properly connected to the Building LAN.



The WaveLinx Area Controller initial setup is complete.

WaveLinx Area Hub Reference Sheet

WaveLinx Area Hub



Features

- Routes communication between the WaveLinx Area Controller and WaveLinx CAT Devices
 - Built-in Ethernet for PoE power and LAN connection
- Connects to up to 8 WaveLinx CAT buses (max. 200 devices)

Power:

- Powered from PoE or PoE Injector

Typical Applications

- Required for communication to WaveLinx CAT Devices

Models:

- **WAH-C-POE:** WaveLinx Area Hub

WaveLinx App Details:

- Default Device Name:
 - AH-XXXX

Icon Displayed in WaveLinx App:



(only visible in the Devices menu)

The WaveLinx Area Hub is a communications coordinator between a WaveLinx Area Controller and WaveLinx CAT devices. When connected to an Area Hub, distributed WaveLinx CAT systems can be configured and controlled from the WaveLinx Mobile App.

The WaveLinx Area Hub communicates with the WaveLinx Area Controller over the Ethernet. The WaveLinx Mobile App communicates through Wi-Fi to the WaveLinx Area Controller to control and configure the WaveLinx CAT devices.

Area Hub Details

Feature	Details
Hardware Details	<ul style="list-style-type: none"> • The Area Hub supports up to 8 WaveLinx CAT buses through 8 RJ45 onboard connection ports • Max. 200 WaveLinx CAT Devices per Area Hub (150 best practice) • Max 40 CAT devices per Area Hub port (20 best practice) • The Area Hub has one POE port for power and Ethernet

WaveLinx CAT Distributed and Network Modes

WaveLinx CAT buses can operate independently or may be connected to an Area Hub to operate as part of a system.

- **Distributed Mode:** The WaveLinx CAT devices connected to the same WaveLinx CAT bus operate together and control based on their factory default settings or settings programmed using a WaveLinx CAT Bluetooth Programming Interface Module and the WaveLinx CAT Mobile App.
- **Networked Mode:** The WaveLinx CAT devices are connected to an Area Hub, are added to a WaveLinx Area Controller, and operate from the commands configured in the WaveLinx Area Controller. CAT devices can respond to or issue commands from/to other devices configured in the WaveLinx Area Controller.

Out-of-the-Box

The WaveLinx Area Hub has no out-of-the box functionality. Once power is applied, the Main Status LED should illuminate green and remain ON.

Connected CAT devices operate in **Distributed Mode** until the Area Hub and devices are discovered and added to a WaveLinx Area Controller during the configuration process.

Loss of Communications Operation

If the Area Hub loses communications with the WaveLinx Area Controller, or the WaveLinx CAT bus loses communication to the Area Hub, the connected WaveLinx CAT devices will revert to **Distributed Mode** operation within 15 seconds. The devices will remain at their current light level until they receive the next command from a motion sensor or wallstation on the same CAT bus.

The main Status LED will flash Green 300 ms/White 300 ms/OFF 2.4 s and repeat.

When communications to the WaveLinx Area Controller or Area Hub are restored, the WaveLinx CAT devices will return to **Networked Mode** operation.

Operation upon Return of Power

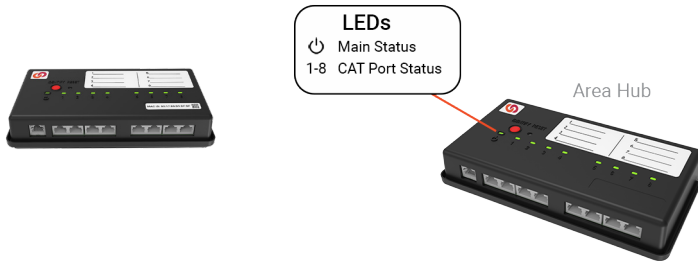
Upon return of power, the WaveLinx Area Controller will begin re-establishing connection with the Area Hub and with controlled devices. This process may take several minutes depending on the quantity of devices being controlled. Connected WaveLinx CAT devices will revert to **Distributed Mode** operation until the connection is re-established.

Area Hub Discovery


The Area Hub and WaveLinx CAT devices do not use pairing method. The process of adding the WaveLinx Area Hub to the WaveLinx Area Controller is called **Area Hub Discovery**. Once the Area Hub is discovered, the Area Hub and connected WaveLinx CAT devices can then be added to the WaveLinx Area Controller.

WaveLinx Area Hub continued

LED Operations



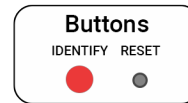
After power is applied, wait approximately 1 minute for the WaveLinx Area Hub to fully boot before reviewing the LED status.

LED	Color/Pattern	Description
Main Status LED 	Flashes green for 1s, OFF for 1s. Repeats	The WaveLinx Area Hub is not connected with a WaveLinx Area Controller and does not have an IP Address (either DHCP or Static IP) assigned. 3 minutes after power is applied, if no DHCP server is found or statically assigned IP, the default IP address will be assigned, and the LED will stop flashing.
	ON solid green	The WaveLinx Area Hub is not connected to a WaveLinx Area Controller. An IP address has been assigned (from DHCP, static assignment, or default IP). Connected CAT devices will be in Distributed Mode .
	ON solid white	The WaveLinx Area Hub is connected to a WaveLinx Area Controller.
	Flashes green 300ms/white 300ms/OFF 2.4s. Repeats	The WaveLinx Area Hub has lost communications with the connected WaveLinx Area Controller. Connected CAT devices will be in Distributed Mode .
	Flashes magenta 1s/OFF 1s: Repeats for identity duration	The WaveLinx Area Hub has received a Blink to Identify command from the webpage interface or WaveLinx Mobile Application
	Flashes cyan 1s/OFF 1s Repeats for update duration.	The WaveLinx Area Hub firmware is being updated.
	Flashes cyan 500ms/OFF 500ms. Repeats for update duration	The WaveLinx Area Hub's connected CAT device firmware is being updated.
	Flashes yellow for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 10 and 15 seconds and the Area Hub is the process of a factory reset.
	Flashes blue for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 3 and 5 seconds and the Area Hub is in the process of an authentication reset.
	ALL LEDs turn OFF with reset button press	The reset button has been pressed for 1 second and the Area Hub is in the process of a soft reset/reboot.
	ON solid red	A fault is present.
CAT Port LEDs For Ports 1-8	Port LED OFF	No bus cable is plugged in/detected
	Port LED solid green	A bus cable is plugged in/detected. The Area Hub is not connected to a WaveLinx Area Controller. Connected CAT devices will be in Distributed Mode .
	Port LED solid white	A bus cable is plugged in/detected. The Area Hub is connected to a WaveLinx Area Controller. Connected CAT devices will be in Networked Mode .
	Port LED flashes green 300ms/white 300ms/OFF 2.4s. Repeats	A bus cable is plugged in/detected. The WaveLinx Area Hub has lost communications with the connected WaveLinx Area Controller. Connected CAT devices will be in Distributed Mode .
	Port LED(s) flashes magenta 1s/OFF 1s: Repeats for identity duration	The WaveLinx Area Hub port (or ports) have received a Blink to Identify from an onboard button press, from the webpage interface, or from the WaveLinx Mobile Application.
	Port LED ON solid red	A CAT bus fault is present.
	Other colors/patterns	Refer to the Color/Pattern details for the main status LED. Port LEDs will mimic the Area Hub blinking pattern for the states listed for the Main Status LED.

WaveLinX Area Hub continued

WaveLinX Area Hub Pushbutton Functions

The WaveLinX Area Hub has two pushbuttons that allow for several administrative functions. These functions should be used with caution!



Function	Button	Press Length	LED feedback	Device outcome
Soft Reset/Reboot	Reset (Inset Button)	Press and release (up to 1 second)	All LEDs will turn OFF as the Area Hub reboots	Devices will remain in previous commanded state during reboot, operate in Distributed Mode until the reboot completes and then resume their Network Mode behavior.
Authentication Reset	Reset (Inset Button)	Press and hold for 4 seconds recommended (>3 sec. to <=5 sec.)	Status LED will flash blue for 2 seconds	The area hub user and password will be reset to defaults.
Factory Reset	Reset (Inset Button)	Press and hold for 12 seconds recommended (>10 sec. to <=15 sec.)	Status LED will flash yellow for up to 5 seconds	All area hub settings will be reset to factory defaults. Connected devices will operate in Distributed Mode until the Area Hub is discovered and added to a WaveLinX Area Controller.
Identify Mode (ALL)	Identify	Press and hold for 2 seconds	All port LEDs start flashing magenta.	Devices on all connected ports are issued a Blink to Identify command. See device reference sheets for expected behavior. Identify mode will continue for 1 minute. To cancel identify mode prior to timer expiration, press and hold the Identify button for 2 seconds.
Identify Mode (single port)	Identify	Press and hold for 2 seconds. All port LEDs will start flashing. Press and release (up to 1 second) the identify button to cycle through and select the desired port. The LED on the selected port will flash. Each press/release of the identify button will advance by 1 port.	Initial press and hold will cause all port LEDs to start flashing magenta. Port selection press will cause only the selected port LED to flash magenta.	With the initial press and hold, devices on all connected ports are issued a Blink to Identify command. When the individual port is selected, the Blink to Identify command is isolated to the devices connected to the selected port. Individual port identify mode will expire after 1 minute and return to ALL port identify mode for 1 additional minute. During this time, another port selection can be made. Once the timer expires, the Area Hub will return to normal operation. To cancel identify mode prior to timer expiration, press and hold the Identify button for 2 seconds. See device reference sheets for expected behavior for Blink to Identify mode.

Initial Configuration Steps for the WaveLinX Area Hub

WaveLinX Area Hub continued

Initial Configuration Steps

The steps in this section must be done before adding the WaveLinX CAT Area Hub/Devices to the WaveLinX Area Controller.

Use this section to:

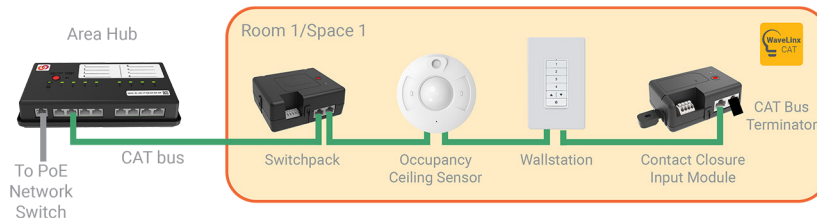
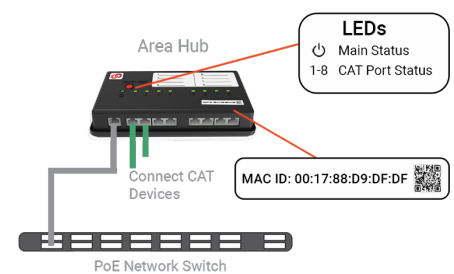
- Verify WaveLinX CAT Device Installation
- Prepare for Connection to Configure the Area Hub
- Determine the Area Hub IP Address
- Connect to the Area Hub Configurator
- Update the Area Hub Name
- Set an IP Address for the Area Hub



Step 1: Verify WaveLinX CAT Device Installation

Before performing the WaveLinX CAT Area Hub configuration:

- 1: Connect the Area Hub's Ethernet port to the PoE network switch. After approximately 3 minutes, verify that the main status LED is ON solid green. This indicates that an IP address has been assigned to the port (either DHCP assigned or the default IP) and that the device is ready for configuration or WaveLinX Area Controller connection. Note: Other LEDs may also be illuminated depending on connections.
- 2: **Make note of the location and MAC address of each Area Hub that will be connected to the same network** (MAC address is located on label on the top of the device).
- 3: Confirm that the Area Hub is connected to the device CAT bus. Power switchpack and lighting circuits. Verify that device LEDs indicate a powered status.

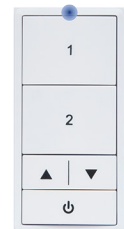


Before the Area Hub is connected to the WaveLinX Area Controller:

WaveLinX CAT devices have a Blue LED that should be ON or flash to indicate the device is powered.

Motion devices will flash the LED when motion is detected.

Wallstations will flash the LED when a button is pressed.



IMPORTANT NOTE: The Area Hub is automatically set to allow DHCP configuration of the IP address. If the Area Hub has been connected to a building LAN with a DHCP server, it will automatically obtain an IP address. When no DHCP server is detected on the network, after 3 minutes, the Area Hub will self-assign an IP address in the range of 192.168.1.100 to 192.168.1.255 (randomized in this range to try to avoid IP conflict with other Area Hubs that may be on the same network)⁸.

With either IP method, the status LED on the Area Hub will turn ON solid green indicating an IP address has been set.

If not setting a static IP address or changing the default Area Hub name, no further Area Hub configuration is necessary.

Follow the steps below to prepare to connect to and discover the Area Hub IP addresses, login to the Area Hub configurator, change the name of each WaveLinX Area Hub, and set a static IP address for each Area Hub Ethernet port.

Step 2: Prepare for Connection

The steps below assume that the Area Hub has not been connected to a network with a DHCP server. The WaveLinX Area Controller will be used during these steps.

If using DHCP, to change the Area Hub name or statically assign the IP address prepare the hardware for connection and then skip to step 3 on page 27.

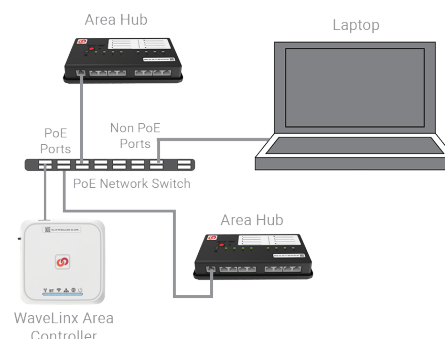
1: Prepare hardware for connection.

Make sure that the WaveLinX Area Controller initial configuration steps have been performed. See "Initial Configuration Steps for the WaveLinX Area Controller 2 (Gen 2)" on page 18.

Make sure that the WaveLinX Area Hub is connected PoE Network Switch and that it is connected to the same Ethernet network as the WaveLinX Area Controller. (CAT buses can remain attached to the Area Hub). If the site has more than one WaveLinX Area Hub, all Area Hubs can remain connected and will be identified by their previously noted MAC address.

Once the Area Hub is connected, wait three minutes after power up for the Area Hub to self-assign an IP address. If visible, the Area Hub status LED will be ON solid green indicating that an IP address is assigned and ready for connection.

Connect the laptop's Ethernet port to a Network Switch's non-PoE port on the same Ethernet network.



⁸ Prior to release 14.1.x.x, all Area Hubs defaulted to the same IP address of 192.168.100.100. If connecting to a device with older firmware, isolate the Area Hub connection to the PoE switch and connect the laptop with a static IP address on this subnet to the network. Use the 192.168.100.100 IP address to open the Area Hub Configurator. Once configuration is complete, repeat with additional Area Hubs.

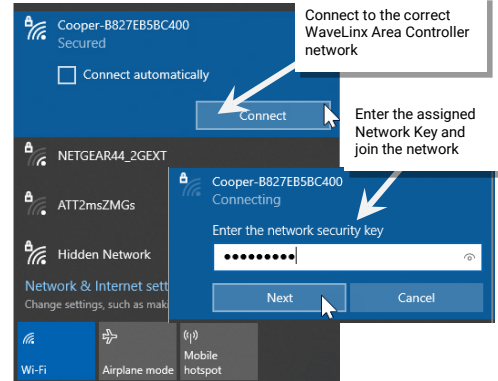
WaveLinx Area Hub continued

Step 2: (continued)

2: Turn on the laptop Wi-Fi and display the available Wi-Fi networks. Select the network, **Cooper-XXXXXXXXXX**, where X is the MAC address on the **WaveLinx Area Controller's** label.

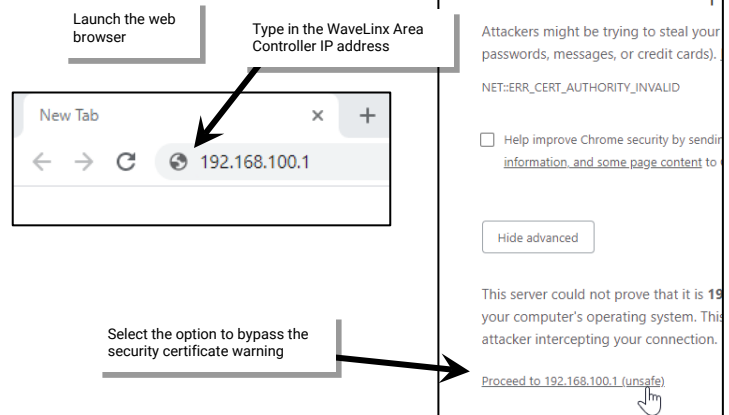


If necessary, enter the Network Key assigned during the WaveLinx Area Controller's initial configuration and join the network



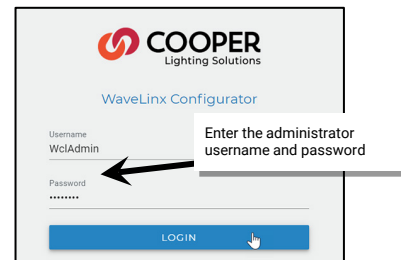
3: Open the web browser and enter the Wi-Fi IP address of the WaveLinx Area Controller in the address bar. (The default Wi-Fi IP address is 192.168.100.1)

If the browser displays a warning message, locate the option to bypass the warning to proceed to the site.

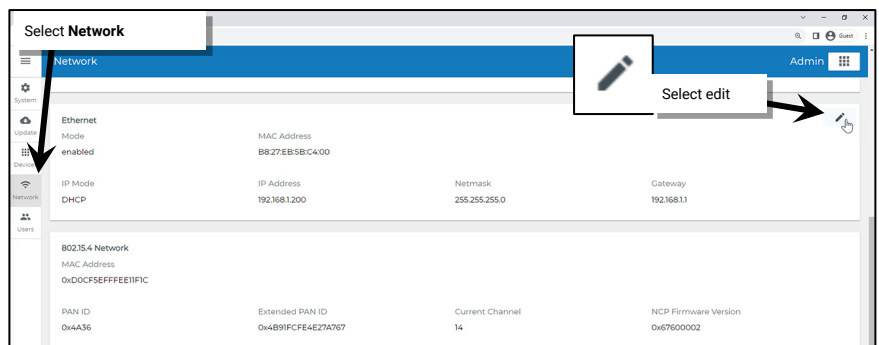


4: In the log in screen, enter the username and password for the administrator user.⁹

- Username: **WclAdmin**
- Password: enter password assigned during initial configuration



5: Select the **Network** page and then click on the pencil icon in the **Ethernet** section to edit.



⁹ If the username and password have been changed, use the updated username or password when logging in.

WaveLinx Area Hub continued

Step 2: (continued)



- 6: Select to use **Static IP** and manually enter the following:
- **IP address:** Enter an unused IP address in the range of **192.168.1.2 through 192.168.1.99**
 - **Subnet mask:** **255.255.255.0**
 - **Default gateway:** **192.168.1.1** (or other address not used in this subnet).

Select **UPDATE** to send the settings to the WaveLinx Area Controller.

Once the remaining steps of configuration are complete, if IP addresses of the Area Hub(s) have been changed to a different subnet, remember to change the WaveLinx Area Controller's IP address to a static IP on the new subnet.

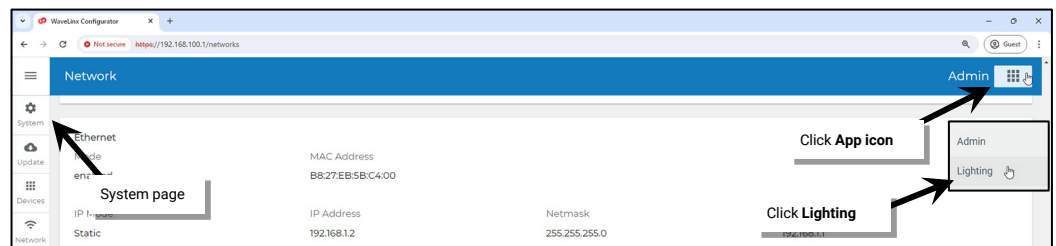
Step 3: Determine the Area Hub IP Addresses

In this step, the WaveLinx Area Controller's Lighting App will be used to discover the Area Hub IP addresses on the connected network.¹⁰

If the Area Hub has been connected to the building LAN and is using a DHCP address, contact the network administrator for the IP address and skip this step. If the network administrator does not have the Area Hub IP addresses but the WaveLinx Area Controller IP address is known, follow the steps described below to discover the Area Hubs to display the IP addresses in the WaveLinx Lighting App. The laptop being used for configuration must connect to the same network for access and the DHCP given IP address for the WaveLinx Area Controller used instead of the addresses discussed.

- 1: If not already logged in, login to the WaveLinx Area Controller web configurator as the administrator.

In the top right of the system page, click on the **App icon** and then select **Lighting** from the drop down.



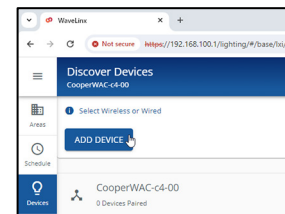
- 2: When prompted, enter the username and password for the WaveLinx Area Controller's administrator user and then select **LOGIN**.

- Username: **WclAdmin**
- Password: Enter the assigned password

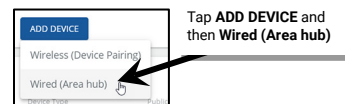
- 3: Confirm that the **Discover Devices** view is displayed.

If **Discover Devices** is not automatically displayed, select **menu**, and tap **Devices**.

- For tablet devices or devices being used in landscape view, tap on the WaveLinx Area Controller.
- For smaller devices using portrait view, the **Discovery** controls for the Area Controller will already be at the top of the screen.



- 4: Tap **ADD DEVICE** and select **Wired (Area hub)** to begin the Area Hub search.



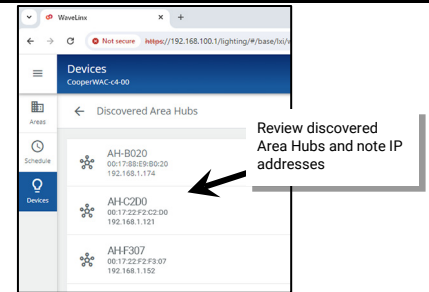
¹⁰ Prior to release 14.1.x.x, all Area Hubs defaulted to the same IP address of 192.168.100.100. If connecting to a device with older firmware, isolate the Area Hub connection to the PoE switch and connect the laptop with a static IP address on this subnet to the network. Use the 192.168.100.100 IP address to open the Area Hub Configurator. Once configuration is complete, repeat with additional Area Hubs.

WaveLinx Area Hub continued

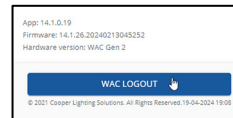
**Step 3: (continued)**

5: Wait for the search to be completed and then review the Area Hub list to determine the IP addresses.

Make note of the IP addresses, matching them to the MAC addresses noted earlier.

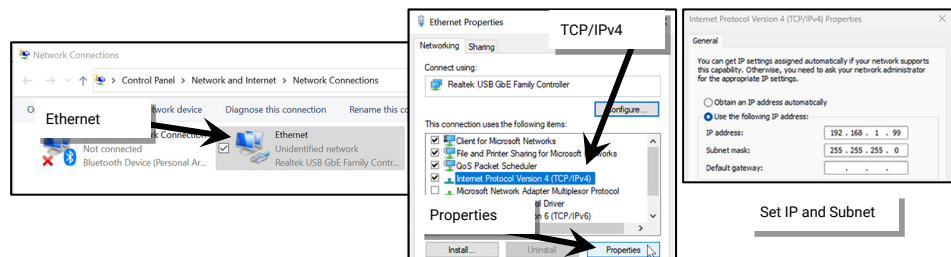


6: From the menu ☰ select **WAC Logout** and then close the browser window.

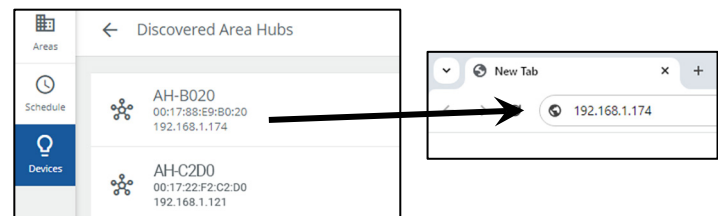
**Step 4: Connect to the Area Hub Configurator**

In this step, learn how to connect to the Area Hub Configurator tool using a web browser on the laptop. The Area Hub Configurator will be used to change the Name or the IP Address of the Area Hub(s).

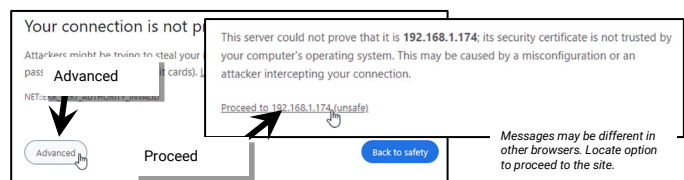
1: If not using DHCP, access the laptop's network adapter settings to statically set the IP address of the laptop to be 192.168.1.99 (or another unused IP address on the 192.168.1.x subnet).



2: Open a current version web browser and enter the first Area Hub's assigned IP address in the address bar¹¹.



3: Bypass warnings and proceed to the site. This step is needed only for initial login or if browser cache is cleared.



¹¹ Prior to release 14.1.x.x, all Area Hubs defaulted to the same IP address of 192.168.100.100. If connecting to a device with older firmware, isolate the Area Hub connection to the PoE switch and connect the laptop with a static IP address on this subnet to the network. Use the 192.168.100.100 IP address to open the Area Hub Configurator. Once configuration is complete, repeat with additional Area Hubs.

WaveLinx Area Hub continued

Step4: (continued)

4: Login to the WaveLinx Area Hub Configurator Webpage.

- Enter the admin username: **WclAdmin**,
- Enter the default password: **wclAdmin**

Select **LOGIN**



5: If this is the first login, the system will force a password change. When prompted, submit a new password for the administrative user.

Set a complex password when changing passwords, making sure it is something that can be remembered.

IMPORTANT! REMEMBER THE NEW PASSWORD AS IT WILL BE USED FOR ALL FUTURE ADMINISTRATOR LOGINS FOR THE AREA HUB WEBPAGE.

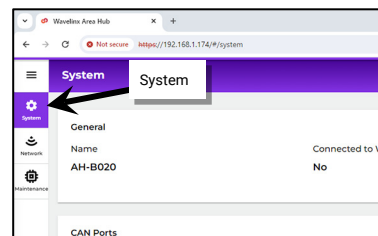
6: Login to the WaveLinx Area Hub Configurator webpage using the new password.

- Enter the admin username: **WclAdmin**,
- Enter the password: **assigned password**
- Select **LOGIN**

Step 5: Update the Area Hub Name (Optional)

a maximum 16 alphanumeric characters (hyphen character is allowed)

1: If needed, login to the WaveLinx Area Hub Configurator webpage and select **system**.



2: In the **General** section, select **EDIT**.

3: Enter the new Area Hub name and select **SAVE**.

Repeat these steps for other Area Hubs on the network until all area hub names are assigned.

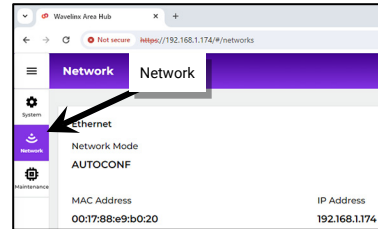
WaveLinx Area Hub continued

**Step 6: Set a New Static IP Address for the Area Hub**

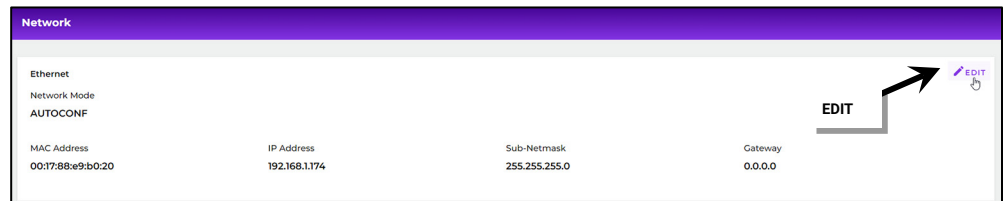
The WaveLinx CAT Area Hub is set to use DHCP by default. If using a DHCP server, no further IP address settings are needed.

If not using DHCP, the WaveLinx CAT Area Hub is set up to automatically configure an initial IP address in the range of 192.168.1.100 through 192.168.1.255 to allow for initial operation and configuration. Because both the 192.168.100.X and 192.168.1.X networks on the 255.255.255.0 subnet are used for default random IP address assignment, it is recommended that a different subnet be chosen for the final static IP to avoid conflict with any new devices connected to the system.¹²

1: If needed, login to the WaveLinx Area Hub Configurator webpage and select **network**.



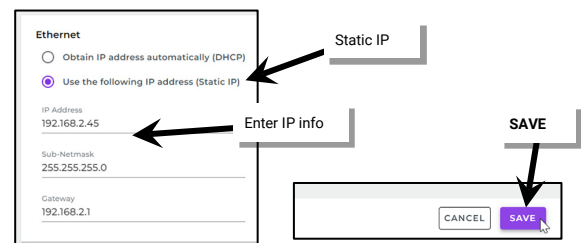
2: In the **Ethernet** section, select **EDIT**.



3: Select **Use the following IP address (Static IP)** and then enter the desired **IP address, net mask, and gateway**. Select **SAVE**.

The WaveLinx Area Hub will reboot automatically and operate with the new settings.

Repeat these steps for other Area Hubs on the network until all area hub addresses are assigned.



Once the remaining steps of configuration are complete, if IP addresses of the Area Hub(s) have been changed to a different subnet, remember to change the WaveLinx Area Controller's IP address to a static IP on the new subnet.

Disconnect the laptop from the PoE Network Switch. Remember to reset the laptop IP address settings back to using DHCP. Any future connections will require the use of the Area Hub's new IP address and subnet assigned.

¹² Prior to release 14.1.x.x, all Area Hubs defaulted to the same IP address of 192.168.100.100. If connecting to a device with older firmware, isolate the Area Hub connection to the PoE switch and connect the laptop with a static IP address on this subnet to the network. Use the 192.168.100.100 IP address to open the Area Hub Configurator. Once configuration is complete, repeat with additional Area Hubs.

WaveLinX Low-Voltage Power Module Reference Sheet

Low-Voltage Power Module



Features

- 12 Class 2 low-voltage DC circuit connection ports
- Supports up to 64 WaveLinX LV Fixtures
- Two low-voltage ports can optionally wire to operate from an emergency circuit for UL924 operation.
- Communicates to the WaveLinX Area Controller via Ethernet connection
 - Up to 5 Low-Voltage Power Modules may be paired with 1 WaveLinX Area Controller.¹³

Power:

- Input Voltage 120VAC-277VAC, 50/60Hz
- Output: 12 Class 2 Outputs (90W MAX)
- Hot swapping/plugging not supported. Power down before connecting Low-Voltage Fixtures.

Typical Applications

- Education, office, and other interior spaces

Models:

LVPM-12-100-64-2E: WaveLinX 1200W Low-Voltage Power Module

WaveLinX App Details:

- Power Module (Only visible in the Devices menu)

Icon Displayed in WaveLinX App:



(only visible in the Devices menu)

The WaveLinX Low-Voltage Power Module communicates between connected WaveLinX LV Low-Voltage Fixtures and the WaveLinX Area Controller, allowing WaveLinX control of WaveLinX LV device controlled lighting loads. The Low-Voltage Power Module converts line voltage alternating current to Class 2 low-voltage DC circuits. Twelve onboard low-voltage connection ports allow for easy, daisy-chain connection to up to sixty-four Low-Voltage Fixtures. If needed, two low-voltage output ports can be wired for operation from an emergency circuit for UL924. The WaveLinX Low-Voltage Power Module communicates via Ethernet to the WaveLinX Area Controller.

Out-of-the-Box Operation

- Not applicable for this device. Refer to the WaveLinX LV device Reference Sheets for load operation details.
- Once power is applied, status LED should flash orange, the output channel LEDs should illuminate green,¹⁴ the alert LED and diagnostic LEDs should remain OFF, and the LAN LED may flash green if connected to a DHCP server.

Pairing Information:

Before pairing the Low-Voltage Power Module to the WaveLinX Area Controller, the Low-Voltage Power Module must be configured with an IP address in the same subnet. See the initial configuration steps beginning on page 33 for these details. Once on the same subnet, when the WaveLinX Area Controller is placed in pairing mode, the Low-Voltage Power Module should pair with it. **When the Low-Voltage Power Module pairs, all connected Low-Voltage Fixtures will automatically be paired with the WaveLinX Area Controller.**

Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)


- The Status LED illuminates solid green.
- Connected fixtures dim to 10% and display paired behavior. See the Low-Voltage Fixture reference sheets for further details.

Supported Identification Methods:

If there is more than one Low-Voltage Power Module paired with the WaveLinX Area Controller, the Low-Voltage Power Modules can be identified.

- **Identify Button:** Press the onboard **Identify** button. For a Low-Voltage Power Module that has been paired with a WaveLinX Area Controller, this will trigger identification mode, causing the device icon to flash in the WaveLinX App's **Device** menu. The Status LED on the Low-Voltage Power Module will flash blue for 15 seconds.

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the Low-Voltage Power Module. In the **Device** menu, select  in the Low-Voltage Power Module's row to start **Blink to Identify** mode. When placed in **Blink to Identify** mode **ALL** Low-Voltage Fixtures connected to this Low-Voltage Power Module will cycle ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds, and the Status LED on the Low-Voltage Power Module will flash blue for 15 seconds.

Alert Mode Operation

If an external dry contact closure is connected to the ALERT terminal and the contact closes, the Low-Voltage Power Module will enter Alert Mode. The Alert is locally processed and is not reported to the WaveLinX Area Controller.

In alert mode:

- All Low-Voltage Fixtures connected to this Low-Voltage Power Module will turn FULL ON, bypassing control.
- The Alert status LED will illuminate RED.



Once the contact closure opens, the Low-Voltage Power Module resumes normal operation, and all lighting will revert to the commanded lighting level.

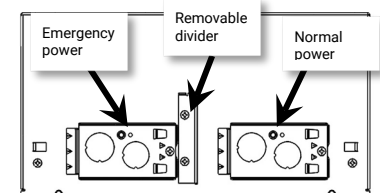
Emergency Mode Operation

The WaveLinX Low-Voltage Power Module comes with a normal power and an emergency power connection. If emergency power is not connected, normal power may be wired to both the normal and emergency connections by removing the separator between the two wiring compartments.

When wired to an emergency power source and normal power is lost, output channels 1 and 2 will remain powered by the connected Emergency circuit.

Lighting connected to these two channels will be forced FULL ON, until normal power is restored.

This UL924 approved solution allows Low-Voltage lighting to provide minimum illumination levels for egress and safety as required by NFPA 101 Life Safety Code or other local building codes and standards.



¹³ For best results, do not pair more than 140 low-voltage devices to a WaveLinX Area Controller 2 (Gen 2). Low-Voltage Fixture with Integrated Sensor: fixture + sensor = 1 device.

¹⁴ If output channel LED is blinking, the power is out of spec. Resolve before continuing.

Low-Voltage Power Module continued



Operation upon Return of Power

Upon return of power, the connected fixture(s) will return to the last known light level until the Low-Voltage Power Module reboots and communications are re-established with the WaveLinX Area Controller. If not able to communicate with the WaveLinX Area Controller for more than approx. 15 minutes, loss of communications operation will begin.¹⁵

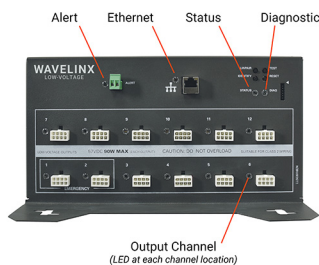
Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Press the Low-Voltage Power Module **RESET** button for **more than 10 seconds**.

This removes IP address settings and pairing for ALL Low-Voltage Fixtures and devices connected to the Low-Voltage Power Module. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.

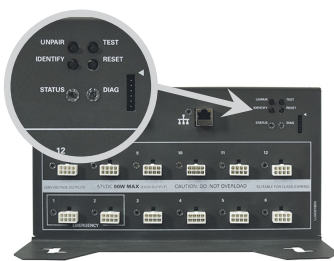
LED Operation



LED	Color/Pattern	Description
Output Channel LEDs (1-12)	Solid GREEN	Output is operating normally
	Blinking GREEN	Output voltage is out of specification (too low or too high)
Status LED	Solid GREEN	The Low-Voltage Power Module is operating and paired with a WaveLinX Area Controller.
	Solid RED	Error condition
	Blinking GREEN	The Low-Voltage Power Module is in test mode from the onboard test button or from the web portal. Connected lights and the LED will flash for 15 seconds.
	Blinking BLUE	The Low-Voltage Power Module is in 15 second identify mode, triggered from the onboard pushbutton or from the WaveLinX App. If triggered from the WaveLinX App, connected lighting will flash for 15 seconds.
	Blinking ORANGE	The Low-Voltage Power Module is not yet paired with a WaveLinX Area Controller.
Diagnostic LED	OFF	Normal condition (Not currently used. For future options)
Ethernet LED	Blinking GREEN	Blinks with Ethernet network activity.
Alert LED	OFF	The unit is in normal operation.
	Solid RED	The unit is in ALERT mode from an external dry contact closure signal into the alert terminal.

Low-Voltage Power Module Pushbuttons

The WaveLinX Low-Voltage Power Module has several onboard pushbuttons that perform specific functions.



Pushbutton	Function
Unpair	Push and hold for greater than (>) 10 seconds to unpair the Low-Voltage Power Module from the WaveLinX Area Controller.
Identify	If pressed, the status LED will flash blue for 15 seconds. In the WaveLinX App's Device menu, the icon for the Low-Voltage Power Module will appear to pulse, identifying the device in the WaveLinX App.
Test	Press and release to place the Low-Voltage Power Module into test mode. All lights connected to the Low-Voltage Power Module will cycle between OFF and ON for 15 seconds.
Reset	Soft Reset: Press and release to issue a soft reset (reboot) the Low-Voltage Power Module. A soft reset takes approximately 1 ½ minutes to complete.
	Factory Reset: Push and hold for more than 10 seconds to issue a factory reset. Use it with extreme caution. All settings to be removed, resetting the unit to factory defaults. Pairing information will also be removed.

¹⁵ Devices with older firmware may take up to 1 hour to enter loss of communications operation.

Initial Configuration Steps for the Low-Voltage Power Module

Low-Voltage Power Module continued



Initial Configuration Steps

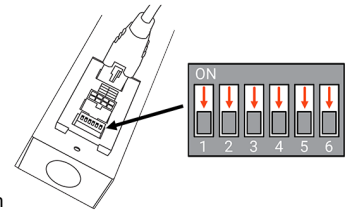
The steps in this section must be done before pairing the Low-Voltage Power Module to the WaveLinX Area Controller.

Use this section to:

- Confirm Device Installation
- Prepare the Low-Voltage Power Module for Pairing

Step 1: Confirm Device Installation

IMPORTANT. Low-Voltage Fixtures have onboard selector switches. When used in a WaveLinX system, all fixture selector switches must be in the OFF or down position (default).



1: Connect Low-Voltage fixtures to the Low-Voltage Power Module before power is applied.¹⁶

2: If connected, disconnect the Ethernet port cable.

3: Apply power and ensure that the Low-Voltage Power Module is ready by verifying the LED operation. The status LED should flash orange, the output channel LEDs should illuminate green, the alert LED, diagnostic LED, and LAN LED should remain OFF.

4: Next, run a connection test for the Low-Voltage Fixtures. Press and release the Low-Voltage Power Module's **Test** button.

The status LED will flash green (1 second ON, 1 second OFF) when the 15 second test mode is active.

All lighting connected to the Low-Voltage Power Module should respond, cycling between 100% light output and OFF during the 15 second test period. Verify that all connected lighting responds properly.

5: Next, verify the Low-Voltage Fixtures display the correct default Out-of-the-Box functionality. Refer to the Low-Voltage Fixture with Integrated Sensor or Low-Voltage Fixture Reference Sheets for the expected behavior.



Step 2: Prepare the Low-Voltage Power Module for Pairing

The WaveLinX Low-Voltage Power Module communicates to the WaveLinX Area Controller over the building LAN. Before the Low-Voltage Power Module can be paired with the WaveLinX Area Controller, it must be configured with a unique IP address within the same network range as the WaveLinX Area Controller. By default, the WaveLinX Low-Voltage Power Module is set to obtain an IP address automatically using DHCP. Alternatively, the IP address can be statically assigned.

IMPORTANT NOTE: If using DHCP to assign the IP address, reserve the IP on the DHCP server. If the IP addresses of the WaveLinX Area Controller or WaveLinX Low-Voltage Power Module changes after the devices are paired, they will lose communication and the Low-Voltage Lighting will be offline until the connection is repaired (see "Reconnecting after IP Address Changes" on page 334).

Access the Low-Voltage Power Module's internal webpages to administer the IP Address by using a current web browser.

The steps in this section assume that the WaveLinX Low-Voltage Power Module is still in its factory default state for the administrative user and password and has not been connected to a DHCP server for IP address assignment. If these items have been changed, please refer to the network administrator for access information.

Use the steps in this section to:

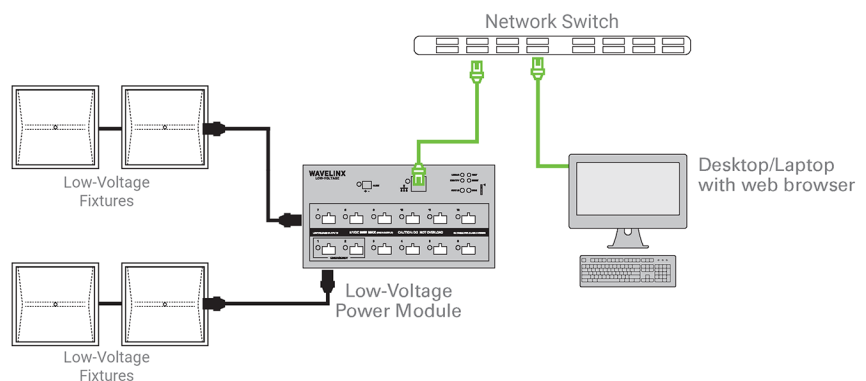
- Verify the Ethernet settings of the WaveLinX Low-Voltage Power Module, including setting a static IP address if needed
- Enter the WaveLinX Area Controller IP that should connect to this WaveLinX Low-Voltage Power Module (recommended)

Before performing these steps, determine the IP address of the WaveLinX Area Controller that will connect to this Low-Voltage Power Module.

1: **If a DHCP Server is not being used**, the default IP address of a Low-Voltage Power Module that has not been configured is 192.168.1.254 on the 255.255.255.0 subnet.

Connect a laptop that is configured with an IP address on the same subnet directly to the Low-Voltage Power Module or to the router or switch connected to the Low-Voltage Power Module.

If a DHCP Server is being used, Connect the Building LAN to the Low-Voltage Power Module's Ethernet port and verify the Ethernet LED is ON or flashing. Refer to the network administrator to obtain the IP address that has been assigned to the Low-Voltage Power Module. Ensure that the laptop being used is connected to and given an IP address on the same network.



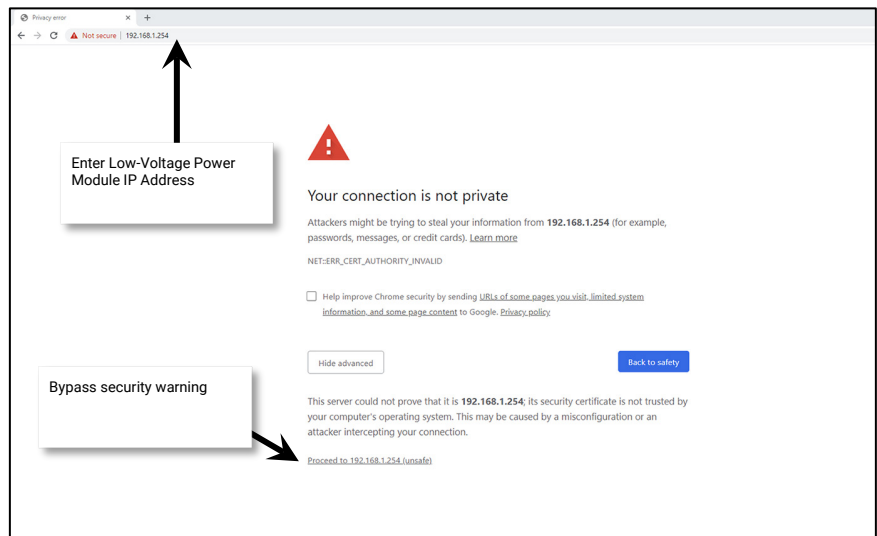
¹⁶Always power down the WaveLinX Low-Voltage Power Module before connecting Low-Voltage Fixtures. The WaveLinX Low-Voltage Power Module does not support hot-swapping/plugging.

Low-Voltage Power Module continued

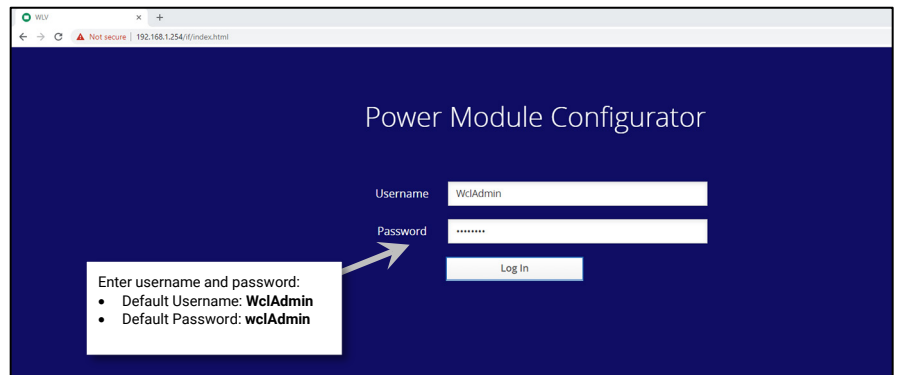


- 2: Open a web browser. In the address bar, enter the IP address of the WaveLinX Low-Voltage Power Module (default 192.168.1.254). The browser may display a warning regarding site security. The display and wording of this message may differ. Locate the option to bypass the warning and proceed to the site.

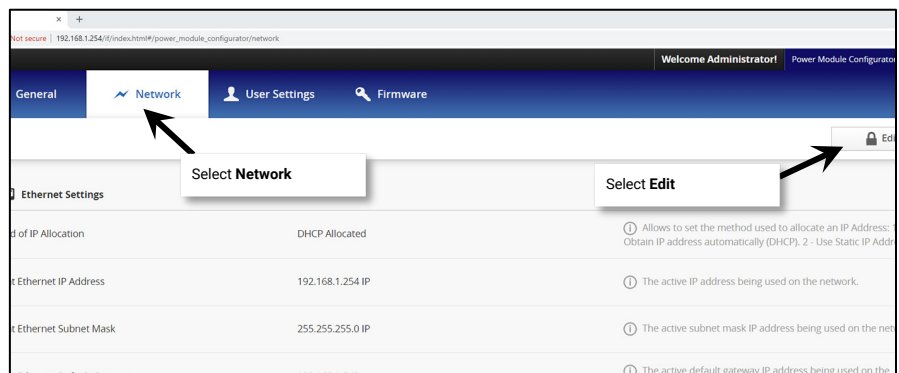
Initial Configuration Steps (continued)



- 3: In the log in screen, enter the username and password for the administrator user.
- Default Username: **WclAdmin**
 - Default Password: **wclAdmin**¹⁷
- The internal webpage will open to the **General** tab after a reminder to change the default password.



- 4: Select the **Network** tab, and then choose **Edit**.



¹⁷ For security purposes, after the initial configuration is complete, change the default password. Users should set a complex password when changing passwords. See "User Settings Administration" on page 332 for this procedure.

Low-Voltage Power Module continued



- 5: If assigning a static IP address, select **Static IP Address** and then type in the desired IP address, the appropriate subnet mask, and the default Gateway IP.

Initial Configuration Steps (continued)

(Optional) Select Static IP Address

Enter IP information

- 6: In the appropriate tab (either DHCP or Static IP depending on which the site is using) enter the IP address of the **WaveLinX Area Controller** that should be paired with this **Low-Voltage Power Module** in the **WAC IP Address** field. This ensures that the **Low-Voltage Power Module** will pair with the correct **WaveLinX Area Controller**.

To find the WaveLinX Area Controller's IP address, open the WaveLinX App. The WaveLinX Area Controller's IP address will show under the device name in the WaveLinX Area Controllers list.

Enter WaveLinX Area Controller IP Address

WaveLinX Area Controller IP Address in the WaveLinX Mobile App

- 7: Click on **Save**. The WaveLinX Low-Voltage Power Module will automatically reboot if the IP address settings other than the **WAC IP Address** have been changed. If the web browser has been left open, it will be disconnected. A Low-Voltage Power Module reboot takes approximately 1 ½ minutes to complete.

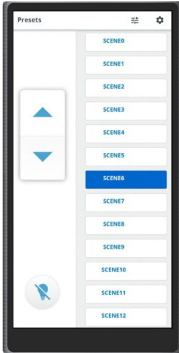
If just the **WAC IP Address** has been entered, the Low-Voltage Power Module will not reboot. Click on **Welcome Administrator** and then select **Log Out** before closing the web browser.

8. Connect the Building LAN cable to the Low-Voltage Power Module Ethernet port.

The Low-Voltage Power Module is now ready for pairing with the WaveLinX Area Controller.

WaveLinx Touchscreen Reference Sheet

WaveLinx Touchscreen



Features

- Multi-area scene selection, raise/lower, toggle ON/OFF control, and individual zone controls
- Low profile, single gang mounting
- Communicates via Ethernet connection

Power:

- PoE powered (IEEE802.3af)

Typical Applications

- Education, office, and other interior spaces

Models:

TSE57-WLX: 5.7" Touchscreen for WaveLinx

WaveLinx App Details:

- Not Applicable: Device is configured through the touchscreen, and does not use the WaveLinx App.

Icon Displayed in WaveLinx App:

- Not Applicable: Device is configured through the touchscreen, and does not use the WaveLinx App.

Programmable options:

- Specify area(s) for control
- Specify available scenes

The WaveLinx Touchscreen can be used to manually operate WaveLinx Area Controller controlled loads including WaveLinx PRO, WaveLinx CAT and WaveLinx LV devices. Easily issue commands to scenes, raise/lower lighting levels and/or individual zone levels from the touchscreen display. The touchscreen automatically populates the screens based on the programming in the WaveLinx Area Controller. Partitioned area control is limited to the scenes and zones of the combined area. Sub area and sub zone control is not currently available.¹⁸

Operation Details

- Once PoE connection is made, the touchscreen will illuminate to a configuration screen.
- The touchscreen will have no control functionality out-of-the-box and is not configured using the WaveLinx App.
- The touchscreen is configured for operation using the touchscreen display. See "Configuring the WaveLinx Touchscreen" on page 278 for configuration details.
- The touchscreen communicates with the WaveLinx Area Controller through an Ethernet connection.

Loss of Communications Operation

If communication is lost with WaveLinx Area Controller, the touchscreen will display a communications error that communications are down. The touchscreen will continue to try to re-establish communications until a successful connection is made.

Operation upon Return of Power

Once power is restored, the touchscreen will boot and attempt to reconnect to the previously connected WaveLinx Area Controller. Once the connection is made, the touchscreen will login with the previously defined user credentials and then will display either the areas list or the preset page of the favorite area if a favorite area has been defined.

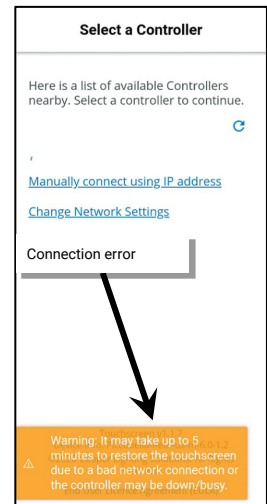
Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings removing Ethernet network configuration and all touchscreen settings.

- Navigate to the touchscreen's **Settings** screen, entering the passcode when prompted.
- Tap the **Factory Reset** option.
- Tap the **Factory Reset** link.
- Tap **Reset** when prompted to confirm.

Configuration Details

This Device is not programmed through the WaveLinx App. Please see "Configuring the WaveLinx Touchscreen" on page 278 for instructions on configuring the Touchscreen for operation.



¹⁸ Partitioning features require WAC2 (Gen2) firmware version 14.1.x.x and higher.

WaveLinX PRO Ambient Integrated Sensor Reference Sheet

WaveLinX PRO Ambient Integrated Sensor



Features

- Integrated photocell for closed loop or open loop daylighting¹⁹
- Integrated Passive Infrared (PIR) motion sensor for occupancy or vacancy sensing
- IEEE 802.15.4, (router and end point)
- Bluetooth beacon, RTLS capabilities^{20,21}
- Combined white tuning and dimming with the advanced model (IS Pro CCT).

Typical Applications

- Education, office, and other interior spaces

Models:

- **WAA:** Ambient Integrated Sensor (standard models)
- **WPA:** Ambient Integrated Sensor (advanced model)

Available option on many Cooper Lighting luminaires.

WaveLinX App Details:

- Default Device Name (standard models):
 - Integrated Sensor PRO
 - Integrated Sensor Economy
 - BLE Integrated Sensor
 - Integrated Sensor
- Default Device Name (advanced model):
 - IS Pro CCT
- Unassigned Device Category:
 - Integrated Sensor (standard models)
 - Wireless Node (advanced model)

Icon Displayed in WaveLinX App:

- Standard models



- Advanced model (IS Pro CCT)



- unassigned
- in dimmable zone
- in white tuning zone

The WaveLinX PRO Ambient Integrated Sensor provides wireless control within the light fixture to reduce wiring, design, and installation time. The sensor provides both occupancy and daylight control that can be easily configured using the WaveLinX App. The advanced model, the Integrated Sensor Pro (IS Pro CCT), offers additional capability combining both dimming and white tuning control within the same integrated sensor device.

Out-of-the-Box Operation

- Once power is applied, the attached fixture operates via the motion sensor.
 - The occupancy sensor is set for high sensitivity.
 - If occupied, the fixture will turn ON to 100%²²
 - Advanced model only (IS Pro CCT): White tuning will be at 3500K whenever fixture is ON.
 - The fixture will dim to OFF (0%) after 20 minutes when the space is unoccupied.
- The daylight sensor is disabled.
- LED flashes green (in sensor window) for 100ms once every 3 seconds when motion is detected.

Construction Area Default Operation

Once paired, the device operates as part of the Construction Area.

- The daylight sensor remains disabled.
- The sensor LED flashes yellow 1 sec./OFF 1 sec. repeatedly.²³

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- The daylight sensor is disabled.
- The sensor LED flashes white for 100ms once every 3 seconds when motion is detected.

- All occupancy sensors report to the area's occupancy set.
 - If occupied, the fixtures will turn ON to 50% (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0).
- Advanced models only: White tuning will go to 3500K whenever lighting is ON unless scene response is modified.

LED Operation (The LED is located beneath the sensor lens)

LED conditions	Meaning
Flashes green for 100ms, once every 3 sec. with motion.	The device is unpaired (out-of-the-box) and is detecting motion. ²²
Flashes yellow for 1 sec./ OFF for 1 sec. Repeats indefinitely.	The device is paired with a WaveLinX Area Controller and is in the Construction Area. ^{23,24}
Flashes white for 100ms, once every 3 sec. with motion	The device is paired to a WaveLinX Area Controller, is assigned to a user created area and is detecting motion.
Flashes green 300ms/ white for 300ms, once every 3 sec. with motion ²²	The device has lost communication with the WaveLinX Area Controller for longer than 15 minutes and is detecting motion.
Flashes white 700ms/ yellow for 300ms, once every 3 sec. with motion.	The device is enabled for daylight dim to OFF and is detecting motion but lighting remains OFF due to the daylight sensor exceeded 150% of the calibrated light level for 30 minutes. ²⁵
LED flashes white for 1 sec. / OFF for 1 sec. Repeats indefinitely.	The mobile app or a timed schedule event has been used to disable the occupancy set or the individual occupancy sensor. The sensor will not respond to motion activity in disabled mode.
Flashes magenta 1 sec. / OFF for 1 sec. Repeats for 15 sec.	The device has been placed into Blink to Identify mode from the WaveLinX App, by using one of the supported identification methods, or the ID Test button has been used on the WaveLinX PRO IR Remote.
Flashes cyan 1 sec/OFF 1 sec. Repeats for a period.	The device firmware is being updated. The cyan flashing pattern will end once the update is complete. ²³
LED flashes blue one time	The ISHH-01 or the ACC-P-RT IR remote has been used to identify the device.
LED is OFF	The device is not detecting motion. If motion is occurring, ensure device is powered and that the LED has not been disabled through the WaveLinX App. ²⁶

¹⁹ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: IS 1.9.4.0, BLE IS 2.6.3.0, IS PRO 1.3.2.0, IS Economy 1.2.4.0.

²⁰ Older WAA models may not have Bluetooth beacon capabilities.

²¹ RTLS capability may require additional license or firmware purchase.

²² Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

²³ Devices must be at minimum firmware versions noted to show this behavior: IS 1.10.15.00, BLE IS 1.11.15.00, IS Pro 1.04.13.00, and IS Economy 1.03.14.00.

²⁴ Devices in user defined areas may exhibit this LED behavior if manually placed in commissioning mode through the advanced user WAC Webpage (advanced technicians only).

²⁵ The LED will return to normal motion operation if the light level drops but stays between 50% and 100% of the calibrated light level for 10 minutes OR if the light level falls below 50% of the calibrated light level for 30 seconds.

²⁶ The LED may be difficult to see in very bright areas.

WaveLinX PRO Ambient Integrated Sensor continued

How to Place in Pairing Mode:



Method	Description
Power Cycle Method ²⁷	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON
ACC-P-RT Remote Method ²⁸ or ISHH-01 Remote Method ²⁹	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has not been paired, this will trigger pairing mode. The LED in the sensor window will briefly flash blue.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.


Successful Paired Device Behavior: (While WAC is still in or is placed in pairing mode)

Fixture dims to 10%. The LED in sensor window should blink yellow.³⁰

Supported Identification Methods:

Method	Description
Laser pointer or focused flashlight beam	For fixtures mounted at reasonable mounting heights, use a laser pointer or bright, focused beam flashlight to trigger identification mode. Standing beneath the sensor, shine the light directly into the sensor lens for 3-4 seconds. The timing needs to be precise for the identification mode to respond. The LED in the sensor window will flash magenta for 15 seconds as the device will appear to flash on the WaveLinX Mobile App screen.
ACC-P-RT Remote ²⁸ or ISHH-01 Remote ²⁹	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has been paired with a WaveLinX Area Controller, this will trigger identification mode for that device. The LED in the sensor window will briefly flash blue and then will flash magenta for 15 seconds as the device will appear to flash on the WaveLinX Mobile App screen.

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. In **Blink to Identify** mode, the fixture will turn ON for 1 second/OFF for 1 second and repeat for 15 seconds. Advanced model (IS Pro CCT): White tuning will cycle between cool and warm when placed in **Blink to Identify** mode from the Area or from the defined White Tuning Zone.

Daylighting Information

Closed Loop Daylight Operation	Open Loop Daylight Operations ³¹
<p>Once assigned to an area and enabled, the sensor will begin closed loop daylight dimming operation to a reasonable light level. If a specific light level (target) is expected at the surface, then calibration is required.</p> <p>Dim to OFF is automatically disabled.^{32,33} Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled, when the measured light exceeds the calibrated level, the fixture will dim lighting.³² When the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will turn the lighting OFF. Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated light level for longer than 30 seconds.</p>	<p>Daylighting will not operate until an open loop daylight set is configured. Once the open loop daylight set is configured the controlled zone(s) will dim in response to entering daylight. If a specific light level is expected at the surface, the zone(s) response to daylight may need adjustment.</p> <p>Dim to OFF is automatically disabled.³² Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled, when the measured light exceeds 150% of the adjusted gain for more than 30 minutes, the sensor will turn lighting OFF.³² Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the adjusted gain for longer than 10 minutes. Condition 2: The measured light level falls below 50% of the adjusted gain for longer than 30 seconds.</p>
Closed Loop Daylight Calibration Details	Open Loop Response to Daylight Adjustment
<p>It is best to calibrate indoor applications when there is a moderate to low level of daylight. If the daylight level is too high, it may be difficult to obtain the desired level of light at the task surface, even if the fixtures are completely OFF. If daylight level is too high and shading is available, use shading to decrease incoming daylight. If it is still too bright, postpone calibration until the amount of incoming daylight has decreased.</p> <p>During calibration, use the Calibrate All feature and adjust slider bars to the desired light level for each controlled fixture. Once all fixtures are adjusted, use a light meter to ensure the reading is in the desired range and then send the Calibrate command. The ACC-P-RT Remote may also be used to adjust the sensor calibration.²⁸</p>	<p>Perform adjustment during daylight hours when electric lighting should be reduced but not fully dimmed. For best results, with electric lighting turned OFF, verify with a light meter at the work surface that the reading with daylight alone is within 50% to 75% of the desired target light level. If the light level is too high or too low, return at a time when the daylight level is within this optimal range. (For example, if 500 lux is the desired work surface level, the reading should be between 250 to 375 lux with lighting OFF.)</p> <p>To adjust the zone response, in the daylight set Calibrate screen, adjust the slider bar until the lighting is at the desired light level. The ACC-P-RT Remote may also be used to adjust the daylight response.²⁸</p>

²⁷ Devices with older firmware (prior to IS 1.07.13.00, BLE IS 2.04.19.00, IS Pro 1.01.04.00 and older IS Economy devices) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).

²⁸ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: IS 1.10.15.00, BLE IS 1.11.15.00, IS Pro 1.04.13.00, and IS Economy 1.03.14.00.

²⁹ Devices must be minimum firmware versions noted to operate with the ISHH-01 Remote: IS 1.07.13.00, BLE IS 2.04.19.00, IS Pro 1.01.04.00 and older IS Economy devices.

³⁰ Devices must be at minimum firmware versions noted to show this behavior: IS 1.10.15.00, BLE IS 1.11.15.00, IS Pro 1.04.13.00, and IS Economy 1.03.14.00.

³¹ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: IS 1.9.4.0, BLE IS 2.6.3.0, IS PRO 1.3.2.0, IS Economy 1.2.4.0.

³² WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

³³ Ambient Integrated Sensor model SWPD1 (IS) will automatically have **DIM to OFF** enabled and will not offer the ability to disable this feature.

WaveLinx PRO Ambient Integrated Sensor continued



White Tuning Configuration Details (advanced model IS Pro CCT only)

For proper white tuning control, the device must be configured for white tuning control and assigned to a white tuning zone.

- Create the dimming zone(s) needed for the area. (p. 134)
- Create the white tuning zone(s) needed for the area. (p. 134)
- Identify the IS Pro CCT to be added to the area. Once identified, add the device to the dimming zone and when prompted, select the white tuning zone for the white tuning channel. (p. 150)
- Add other devices to the area as needed and proceed with programming.

Loss of Communications Operation

If the device has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior and display loss of communications LED operation until communications are re-established.³⁴

Operation upon Return of Power

Upon return of power, the fixture will resume its last known light level. If not able to communicate with the WaveLinx Area Controller for more than approx. 15 minutes, loss of communications operation will begin.³⁴

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

Integrated Sensor/BLE Integrated Sensor/Integrated Sensor Economy	Integrated Sensor PRO / Integrated Sensor PRO CCT
Cycle power the device's circuit six times to (switch OFF 4 seconds ON 4 seconds – 6th time leave ON).	Cycle power to the device's circuit six times (switch OFF 30 seconds ON 5 seconds – 6th time leave ON).

This removes pairing for ALL devices of this type on the circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.³⁵

The ACC-P-RT IR Remote may also be used to factory reset devices. Please refer to the WaveLinx PRO IR Remote User Guide for details on using the IR factory reset command.³⁶

³⁴ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

³⁵ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

³⁶ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: IS 1.10.15.00, BLE IS 1.11.15.00, IS Pro 1.04.13.00, and IS Economy 1.03.14.00.

WaveLinx PRO Industrial Integrated Sensor Reference Sheet

WaveLinx PRO Industrial Integrated Sensor



Features

- Integrated photocell for closed loop or open loop daylighting³⁷
- Integrated Passive Infrared (PIR) motion sensor for occupancy or vacancy sensing
- IEEE 802.15.4, (router and end point)
- Bluetooth beacon, RTLS capabilities^{38,39}

Typical Applications

- Industrial and Manufacturing facilities

Models:

- **SWPD2:** Low mount: 7-15ft (2.1-4.5m)
- **WIJ:** BLE Low mount: 7-15ft (2.1-4.5m)⁴⁰
- **SWPD3:** High mount: 15-40ft (4.5-12.2m)
- **WIL:** BLE High mount: 15-40ft (4.5-12.2m)⁴⁰

Available option on many Cooper Lighting luminaires.

WaveLinx App Details:

- Default Device Name:
 - Industrial Low Mount Integrated Sensor (SWPD2)
 - Industrial High Mount Integrated Sensor (SWPD3)
 - WaveLinx Industrial Pro Low Bay (WIJ)⁴⁰
 - WaveLinx Industrial Pro High Bay (WIL)⁴⁰
- Unassigned Device Category:
 - SWPD2 & WIJ⁴⁰ Lowbay Sensor
 - SWPD3 & WIL⁴⁰ Highbay Sensor

Icon Displayed in WaveLinx App:



High Bay



Low Bay

The WaveLinx PRO Industrial High/Low Bay Mount Integrated Sensor uses a simple tool-less twist lock method to connect to a Cooper Lighting fixture with WaveLinx compatible 4-pin Zhaga Book 18 socket. The sensor has an IP66 rating for warehouse and manufacturing environments and provides both occupancy and daylight control that can be easily configured using the WaveLinx App.

Out-of-the-Box Operation

- Once power is applied, the attached fixture operates via the motion sensor.
 - The occupancy sensor is set for high sensitivity.
 - If occupied, the fixture will turn ON to 100%⁴¹
 - The fixture will dim to 10% after 20 minutes when the space is unoccupied.
- The daylight sensor is disabled.
- LED flashes green (in sensor window) for 100ms once every 3 seconds when motion is detected.

Construction Area Default Operation

Once paired, the device operates as part of the Construction Area.

- The daylight sensor remains disabled.
- The sensor LED flashes yellow 1 sec./OFF 1 sec. repeatedly.⁴²

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- The daylight sensor is disabled.
- The sensor LED flashes white for 100ms once every 3 seconds when motion is detected.

- All occupancy sensors report to the area's occupancy set.
 - If occupied, the fixtures will turn ON to 50% (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0).

LED Operation (The LED is located beneath the sensor lens.)

LED conditions	Meaning
Flashes green for 100ms, once every 3 sec. with motion	The device is unpaired (out-of-the-box) and is detecting motion. ⁴¹
Flashes yellow for 1 sec./ OFF for 1 sec. Repeats indefinitely.	The device is paired with a WaveLinx Area Controller and is in the Construction Area. ^{42,43}
Flashes white for 100ms, once every 3 sec. with motion	The device is paired to a WaveLinx Area Controller, is assigned to a user created area and is detecting motion.
Flashes green 300ms/ white for 300ms, once every 3 sec. with motion ⁴¹	The device has lost communication with the WaveLinx Area Controller for longer than 15 minutes and is detecting motion.
Flashes white 700ms/ yellow for 300ms, once every 3 sec. with motion.	The device is enabled for daylight dim to OFF and is detecting motion but lighting remains OFF due to the daylight sensor exceeded 150% of the calibrated light level for 30 minutes. ⁴⁴
LED flashes white for 1 sec. / OFF for 1 sec. Repeats indefinitely.	The mobile app or a timed schedule event has been used to disable the occupancy set or the individual occupancy sensor. The sensor will not respond to motion activity in disabled mode.
Flashes magenta 1 sec. / OFF for 1 sec. Repeats for 15 sec.	The device has been placed into Blink to Identify mode from the WaveLinx App, by using one of the supported identification methods, or the ID Test button has been used on the WaveLinx PRO IR Remote.
Flashes cyan 1 sec/OFF 1 sec. Repeats for a period.	The device firmware is being updated. The cyan flashing pattern will end once the update is complete. ⁴²
LED flashes blue one time	The ISHH-01 or the ACC-P-RT IR remote has been used to identify the device.
LED is OFF	The device is not detecting motion. If motion is occurring, ensure device is powered and that the LED has not been disabled through the WaveLinx App. ⁴⁵

³⁷ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: SWPD2/SWPD3 1.10.03.00, WIJ/WIL 1.03.06.01.

³⁸ SWPD2 and SWPD3 models do not have Bluetooth beacon capability.

³⁹ RTLS capability may require additional license or firmware purchase.

⁴⁰ WIK & WIM WaveLinx Lite sensor models may be updated through firmware to allow operate with a standard WaveLinx PRO system.

⁴¹ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

⁴² Devices must be at minimum firmware versions noted to show this behavior: SWPD2/SWPD3 1.10.15.00, WIJ/WIL 1.04.12.00.

⁴³ Devices in user defined areas may exhibit this LED behavior if manually placed in commissioning mode through the advanced user WAC Webpage (advanced technicians only).

⁴⁴ The LED will return to normal motion operation if the light level drops but stays between 50% and 100% of the calibrated light level for 10 minutes OR if the light level falls below 50% of the calibrated light level for 30 seconds.

⁴⁵ The LED may be difficult to see in very bright areas.

WaveLinx PRO Industrial Integrated Sensor continued



How to Place in Pairing Mode:

Method	Description
Power Cycle Method ⁴⁶	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON
ACC-P-RT Remote Method ⁴⁷ or ISHH-01 Remote Method ⁴⁸	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has not been paired, this will trigger pairing mode. The LED in the sensor window will briefly flash blue.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinx Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.


Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

Fixture dims to 10%. The LED in sensor window should blink yellow.⁴⁹

Supported Identification Methods:

Method	Description
Laser pointer or focused flashlight beam	For fixtures mounted at reasonable mounting heights, use a laser pointer or bright, focused beam flashlight to trigger identification mode. Standing beneath the sensor, shine the light directly into the sensor lens for 3-4 seconds. The timing needs to be precise for the identification mode to respond. The LED in the sensor window will flash magenta for 15 seconds as the device will appear to flash on the WaveLinx Mobile App screen.
ACC-P-RT Remote ²⁸ or ISHH-01 Remote ²⁹	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has been paired with a WaveLinx Area Controller, this will trigger identification mode for that device. The LED in the sensor window will briefly flash blue and then will flash magenta for 15 seconds as the device will appear to flash on the WaveLinx Mobile App screen.

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. In **Blink to Identify** mode, the fixture will turn ON for 1 second/OFF for 1 second and repeat for 15 seconds.

Daylighting Information

Closed Loop Daylight Operation	Open Loop Daylight Operations ⁵⁰
<p>Once assigned to an area and enabled, the sensor will begin closed loop daylight dimming operation to a reasonable light level. If a specific light level (target) is expected at the surface, then calibration is required.</p> <p>Dim to OFF is automatically disabled.⁵¹ Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled, when the measured light exceeds the calibrated level, the fixture will dim lighting.⁵¹ When the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will turn the lighting OFF. Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated light level for longer than 30 seconds.</p>	<p>Daylighting will not operate until an open loop daylight set is configured. Once the open loop daylight set is configured the controlled zone(s) will dim in response to entering daylight. If a specific light level is expected at the surface, the zone(s) response to daylight may need adjustment.</p> <p>Dim to OFF is automatically disabled⁵¹. Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled⁵¹, when the measured light exceeds 150% of the adjusted gain for more than 30 minutes, the sensor will turn lighting OFF. Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the adjusted gain for longer than 10 minutes. Condition 2: The measured light level falls below 50% of the adjusted gain for longer than 30 seconds.</p>
Closed Loop Daylight Calibration Details	Open Loop Response to Daylight Adjustment
<p>It is best to calibrate indoor applications when there is a moderate to low level of daylight. If the daylight level is too high, it may be difficult to obtain the desired level of light at the task surface, even if the fixtures are completely OFF. If daylight level is too high and shading is available, use shading to decrease incoming daylight. If it is still too bright, postpone calibration until the amount of incoming daylight has decreased.</p> <p>During calibration, use the Calibrate All feature and adjust slider bars to the desired light level for each controlled fixture. Once all fixtures are adjusted, use a light meter to ensure the reading is in the desired range and then send the Calibrate command. The ACC-P-RT Remote may also be used to adjust the sensor calibration.⁴⁷</p>	<p>Perform adjustment during daylight hours when electric lighting should be reduced but not fully dimmed. For best results, with electric lighting turned OFF, verify with a light meter at the work surface that the reading with daylight alone is within 50% to 75% of the desired target light level. If the light level is too high or too low, return at a time when the daylight level is within this optimal range. (For example, if 500 lux is the desired work surface level, the reading should be between 250 to 375 lux with lighting OFF.)</p> <p>To adjust the zone response, in the daylight set Calibrate screen, adjust the slider bar until the lighting is at the desired light level. The ACC-P-RT Remote may also be used to adjust the daylight response.⁴⁷</p>

⁴⁶ Older firmware devices (prior to SWPD2/SWPD3 1.08.17.00 and WIJ/WIL 1.01.05.00) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).

⁴⁷ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: SWPD2/SWPD3 1.10.15.00, WIJ/WIL 1.04.12.00.

⁴⁸ Older firmware devices (prior to SWPD2/SWPD3 1.08.17.00 and WIJ/WIL 1.01.05.00) do not support this method. Use the power cycle method to invoke pairing mode.

⁴⁹ Devices must be at minimum firmware versions noted to show this behavior: SWPD2/SWPD3 1.10.15.00, WIJ/WIL 1.04.12.00.

⁵⁰ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: SWPD2/SWPD3 1.10.03.00, WIJ/WIL 1.03.06.01.

⁵¹ WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

WaveLinx PRO Industrial Integrated Sensor continued



Loss of Communications Operation

If the device has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior and display loss of communications LED operation until communications are re-established.⁵²

Operation upon Return of Power

Upon return of power, the fixture will resume its last known light level. If not able to communicate with the WaveLinx Area Controller for more than approx. 15 minutes, loss of communications operation will begin.⁵²

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

Industrial Low & High Mount Integrated Sensor (SWPD2 or SWPD3)	WaveLinx Industrial Pro Low & High Bay Sensors (WIJ or WIL)
Cycle power the device's circuit six times to (switch OFF 4 seconds ON 4 seconds – 6th time leave ON).	Cycle power to the device's circuit six times (switch OFF 30 seconds ON 5 seconds – 6th time leave ON).

This removes pairing for ALL devices of this type on the circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.⁵³
The ACC-P-RT IR Remote may also be used to factory reset devices. Please refer to the WaveLinx PRO IR Remote User Guide for details on using the IR factory reset command.⁵⁴

⁵² Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.
⁵³ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.
⁵⁴ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: SWPD2/SWPD3 1.10.15.00, WIJ/WIL 1.04.12.00.

WaveLinX PRO Outdoor Integrated Sensor Reference Sheet

WaveLinX PRO Outdoor Integrated Sensor



Features

- Integrated photocell for closed loop or open loop daylighting⁵⁵
- Integrated Passive Infrared (PIR) motion sensor for occupancy sensing
- IEEE 802.15.4, (router and end point)
- Bluetooth beacon, RTLS capabilities^{56,57}

Typical Applications

- Outdoor, parking areas, and pathways

Models:

- **SWPD4:** Low mount: 7-15ft (2.1-4.5m)
- **WOA:** BLE Low mount: 7-15ft (2.1-4.5m)⁵⁸
- **SWPD5:** High mount: 15-40ft (4.5-12.2m)
- **WOE:** BLE High mount: 15-40ft (4.5-12.2m)⁵⁸

Available option on many Cooper Lighting luminaires.

WaveLinX App Details:

- Default Device Name:
 - Outdoor Low Mount Integrated Sensor (SWPD4)
 - Outdoor High Mount Integrated Sensor (SWPD5)
 - Outdoor Low Mount Integrated Sensor BLE (WOA)⁵⁸
 - Outdoor High Mount Integrated Sensor BLE (WOE)⁵⁸
- Unassigned Device Category:
 - SWPD4 & WOA⁵⁸ Lowbay Sensor
 - SWPD5 & WOE⁵⁸ Highbay Sensor

Icon Displayed in WaveLinX App:



High Mount



Low Mount

The WaveLinX Pro Outdoor High/Low Mount Integrated Sensor uses a simple tool-less twist lock method to connect to a Cooper Lighting fixture with WaveLinX compatible 4-pin Zhaga Book 18 socket. The sensor has an IP66 rating and provides both easily configurable occupancy and daylight control.

Out-of-the-Box Operation

- Once power is applied, the attached fixture operates via the daylight and motion sensors.
 - ON at dusk / OFF at dawn via daylight sensor.
 - If the fixture is ON at dusk, the occupancy sensor determines the light level.
 - If occupied, the fixture will go to 100%.
 - The fixture will dim to 50% within 15 minutes when the space is unoccupied.
- The occupancy sensor is set for high sensitivity.
- LED flashes green (in sensor window) for 100ms once every 3 seconds when motion is detected.

Construction Area Default Operation

Once paired, the device operates as part of the Construction Area.

- The daylight sensor remains disabled.
- The sensor LED flashes yellow 1 sec./OFF 1 sec. repeatedly.⁶⁰

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- The daylight sensor is disabled.
- The sensor LED flashes white for 100ms once every 3 seconds when motion is detected.

- All occupancy sensors report to the area's occupancy set.
 - If occupied, the fixtures will turn ON to 50% (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0).

LED Operation (The LED is located beneath the sensor lens.)

LED conditions	Meaning
Flashes green for 100ms, once every 3 sec. with motion	The device is unpaired (out-of-the-box) and is detecting motion. ⁵⁹
Flashes yellow for 1 sec./ OFF for 1 sec. Repeats indefinitely.	The device is paired with a WaveLinX Area Controller and is in the Construction Area. ^{60,61}
Flashes white for 100ms, once every 3 sec. with motion	The device is paired to a WaveLinX Area Controller, is assigned to a user created area and is detecting motion.
Flashes green 300ms/ white for 300ms, once every 3 sec. with motion ⁵⁹	The device has lost communication with the WaveLinX Area Controller for longer than 15 minutes and is detecting motion.
Flashes white 700ms/ yellow for 300ms, once every 3 sec. with motion.	The device is enabled for daylight dim to OFF and is detecting motion but lighting remains OFF due to the daylight sensor exceeded 150% of the calibrated light level for 30 minutes. ⁶²
LED flashes white for 1 sec. / OFF for 1 sec. Repeats indefinitely.	The mobile app or a timed schedule event has been used to disable the occupancy set or the individual occupancy sensor. The sensor will not respond to motion activity in disabled mode.
Flashes magenta 1 sec. / OFF for 1 sec. Repeats for 15 sec.	The device has been placed into Blink to Identify mode from the WaveLinX App, by using one of the supported identification methods, or the ID Test button has been used on the WaveLinX PRO IR Remote.
Flashes cyan 1 sec/OFF 1 sec. Repeats for a period.	The device firmware is being updated. The cyan flashing pattern will end once the update is complete. ⁶⁰
LED flashes blue one time	The ISHH-01 or the ACC-P-RT IR remote has been used to identify the device.
LED is OFF	The device is not detecting motion. If motion is occurring, ensure device is powered and that the LED has not been disabled through the WaveLinX App. ⁶³

⁵⁵ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: SWPD4/SWPD5 1.10.03.00 , WOA/WOE 1.03.06.01.

⁵⁶ SWPD4 and SWPD5 models do not have Bluetooth beacon capability.

⁵⁷ RTLS capability may require additional license or firmware purchase.

⁵⁸ WOB & WOF WaveLinX Lite sensor models may be updated through firmware to allow operate with a standard WaveLinX PRO system.

⁵⁹ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

⁶⁰ Devices must be at minimum firmware versions noted to show this behavior: SWPD4/SWPD5 1.10.15.00, WOA/WOE 1.04.12.00.

⁶¹ Devices in user defined areas may exhibit this LED behavior if manually placed in commissioning mode through the advanced user WAC Webpage (advanced technicians only).

⁶² The LED will return to normal motion operation if the light level drops but stays between 50% and 100% of the calibrated light level for 10 minutes OR if the light level falls below 50% of the calibrated light level for 30 seconds.

⁶³ The LED may be difficult to see in very bright areas.

WaveLinx PRO Outdoor Integrated Sensor continued



How to Place in Pairing Mode:

Method	Description
Power Cycle Method ⁶⁴	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON
ACC-P-RT Remote Method ⁶⁵ or ISHH-01 Remote Method ⁶⁶	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has not been paired, this will trigger pairing mode. The LED in the sensor window will briefly flash blue.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinx Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.


Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

Fixture dims to 10%. The LED in sensor window should blink yellow.⁶⁷

Supported Identification Methods:

Method	Description
Laser pointer or focused flashlight beam	For fixtures mounted at reasonable mounting heights, use a laser pointer or bright, focused beam flashlight to trigger identification mode. Standing beneath the sensor, shine the light directly into the sensor lens for 3-4 seconds. The timing needs to be precise for the identification mode to respond. The LED in the sensor window will flash magenta for 15 seconds as the device will appear to flash on the WaveLinx Mobile App screen.
ACC-P-RT Remote ⁶⁸ or ISHH-01 Remote ⁶⁹	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has been paired with a WaveLinx Area Controller, this will trigger identification mode for that device. The LED in the sensor window will briefly flash blue and then will flash magenta for 15 seconds as the device will appear to flash on the WaveLinx Mobile App screen.

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. In **Blink to Identify** mode, the fixture will turn ON for 1 second/OFF for 1 second and repeat for 15 seconds.

Daylighting Information

Closed Loop Daylight Operation	Open Loop Daylight Operations ⁶⁸
<p>Once assigned to an area and enabled, the sensor will begin closed loop daylight dimming operation to a reasonable light level. If a specific light level (target) is expected at the surface, then calibration is required.</p> <p>Dim to OFF is automatically disabled.⁶⁹ Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled, when the measured light exceeds the calibrated level, the fixture will dim lighting.⁶⁹ When the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will turn the lighting OFF. Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated light level for longer than 30 seconds.</p>	<p>Daylighting will not operate until an open loop daylight set is configured. Once the open loop daylight set is configured the controlled zone(s) will dim in response to entering daylight. If a specific light level is expected at the surface, the zone(s) response to daylight may need adjustment.</p> <p>Dim to OFF is automatically disabled.⁶⁹ Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled, when the measured light exceeds 150% of the adjusted gain for more than 30 minutes, the sensor will turn lighting OFF.⁶⁹ Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the adjusted gain for longer than 10 minutes. Condition 2: The measured light level falls below 50% of the adjusted gain for longer than 30 seconds.</p>
Closed Loop Daylight Calibration Details	Open Loop Response to Daylight Adjustment
<p>It is recommended that the daylight sensor be calibrated at night. During the day, there is too much daylight to accurately calibrate.</p> <p>At night (full dark), use the Calibrate All feature and adjust slider bars to 100% to turn lighting full ON. Once all fixtures are adjusted send the Calibrate command. The ACC-P-RT Remote may also be used to adjust the sensor calibration.⁶⁵</p>	<p>In standard parking garage scenarios, adjust during daylight hours when electric lighting should be reduced but not fully dimmed. The use of a light meter is recommended. With electric lighting turned OFF, verify with a light meter at the work surface that the reading with daylight alone is within 50% to 75% of the desired target light level. If the light level is too high or too low, return at a time when the daylight level is within this optimal range. (For example, if 500 lux is the desired work surface level, the reading should be between 250 to 375 lux with lighting OFF.)</p> <p>To adjust the zone response, in the daylight set Calibrate screen, adjust the slider bar until the lighting is at the desired light level. The ACC-P-RT Remote may also be used to adjust the daylight response.⁶⁵</p>

⁶⁴ Older firmware devices (prior to SWPD4/SWPD5 1.08.17.00 and WOA/WOE 1.01.05.00) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).

⁶⁵ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: SWPD4/SWPD5 1.10.15.00, WOA/WOE 1.04.12.00.

⁶⁶ Older firmware devices (prior to SWPD4/SWPD5 1.08.17.00 and WOA/WOE 1.01.05.00) do not support this method. Use the power cycle method to invoke pairing mode.

⁶⁷ Devices must be at minimum firmware versions noted to show this behavior: SWPD4/SWPD5 1.10.15.00, WOA/WOE 1.04.12.00.

⁶⁸ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: SWPD4/SWPD5 1.10.03.00, WOA/WOE 1.03.06.01.

⁶⁹ WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

WaveLinx PRO Outdoor Integrated Sensor continued



Loss of Communications Operation

If the device has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior and display loss of communications LED operation until communications are re-established.⁷⁰

Operation upon Return of Power

Upon return of power, the fixture will resume its last known light level. If not able to communicate with the WaveLinx Area Controller for more than approx. 15 minutes, loss of communications operation will begin.⁷⁰

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

Outdoor Low/High Mount Integrated Sensor (SWPD4/SWPD5)	Outdoor High/Low Mount Integrated Sensor BLE (WOA/WOE)
Cycle power the device's circuit six times to (switch OFF 4 seconds ON 4 seconds – 6th time leave ON).	Cycle power to the device's circuit six times (switch OFF 30 seconds ON 5 seconds – 6th time leave ON).

This removes pairing for ALL devices of this type on the circuit. After a short period, the device should exhibit out-of-the-box behavior and may be paired as a new device.⁷¹
The ACC-P-RT IR Remote may also be used to factory reset devices. Please refer to the WaveLinx PRO IR Remote User Guide for details on using the IR factory reset command.⁷²

⁷⁰ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.
⁷¹ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

⁷² Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: SWPD4/SWPD5 1.10.15.00, WOA/WOE 1.04.12.00.

WaveLinx PRO Outdoor Sensor Extender/Multiplier Reference Sheet

WaveLinx PRO Outdoor Sensor Extender/Multiplier



Features

- Integrated photocell for closed loop daylight switching
- Integrated Passive Infrared (PIR) motion sensor for occupancy sensing
- IEEE 802.15.4, (router and end point)

Typical Applications

- Outdoor, parking areas, and pathways

Models:

WaveLinx Remote Wireless Extender:

- **RSWPD4-WE:** (low mount only)
 - -U: 120VAC-277VAC
 - -9: 347VAC
 - -8: 480VAC

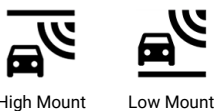
WaveLinx Control Multiplier:

- **RSWPD4-CM:** Low mount: 7-15ft (2.1-4.5m)
- **RSWPD5-CM:** High mount: 15-40ft (4.5-12.2m)
 - -1: 120VAC (16A, 1800W)
 - -3: 240VAC (8A, 1800W)
 - -4: 277VAC (8A, 2100W)

WaveLinx App Details:

- Default Device Name:
 - Outdoor Low Mount Integrated Sensor (RSWPD4 models)
 - Outdoor High Mount Integrated Sensor (RSWPD5 models)
- Unassigned Device Category:
 - RSWPD4: Lowbay Sensor
 - RSWPD5: Highbay Sensor

Icon Displayed in WaveLinx App:



High Mount

Low Mount

Additional Details

- RSWPD4 models use the SWPD4 sensor
- RSWPD5 models use the SWPD5 sensor

The WaveLinx PRO Outdoor Sensor Extender/Multiplier can be used to extend WaveLinx wireless signal outdoors or to add WaveLinx control from motion and daylight switching to non-WaveLinx luminaires. The device mounts to a pole or wall mounted junction box, allowing it to be located wherever it is necessary.

Out-of-the-Box Operation

Used as a Control Multiplier: Once power is applied, the attached fixture(s) operates via the daylight sensor.

- ON at dusk / OFF at dawn via daylight sensor.
- The occupancy sensor will not switch lighting ON or OFF until the device is paired.
- Occupancy sensor is set for high sensitivity.
- LED flashes green (in sensor window) for 100ms once every 3 seconds when motion is detected.

Used as a Wireless Extender: Once power is applied, the LED flashes green (in sensor window) for 100ms once every 3 seconds if motion is detected.

Construction Area Default Operation

Control Multiplier: Once paired, the device operates as part of the Construction Area.

- The daylight sensor remains disabled.
- The sensor LED flashes yellow 1 sec./OFF 1 sec. repeatedly.⁷⁴

Assigned to an Area Default Operation

Control Multiplier: Once assigned to a created area, the device operates as part of the area.

- The daylight sensor is disabled.
- The sensor LED flashes white for 100ms once every 3 seconds when motion is detected.

- All occupancy sensors report to the area's occupancy set.

- If occupied, the fixtures will turn ON (Scene 3).
- The occupancy set default hold time is 20 minutes.
- If the space remains unoccupied for 20 minutes, the fixture will turn OFF (Scene 0).

Connected as a Wireless Extender: Once paired, even though it is not being utilized for control, the onboard occupancy sensor will operate in the Construction Area until the device is configured.

LED Operation (The LED is located beneath the sensor lens.)

LED conditions	Meaning
Flashes green for 100ms, once every 3 sec. with motion	The device is unpaired (out-of-the-box) and is detecting motion. ⁷³
Flashes yellow for 1 sec./ OFF for 1 sec. Repeats indefinitely.	The device is paired with a WaveLinx Area Controller and is in the Construction Area. ^{74,75}
Flashes white for 100ms, once every 3 sec. with motion	The device is paired to a WaveLinx Area Controller, is assigned to a user created area and is detecting motion.
Flashes green 300ms/ white for 300ms, once every 3 sec. with motion ⁷³	The device has lost communication with the WaveLinx Area Controller for longer than 15 minutes and is detecting motion.
Flashes white 700ms/ yellow for 300ms, once every 3 sec. with motion.	The device is enabled for daylight dim to OFF and is detecting motion but lighting remains OFF due to the daylight sensor exceeded 150% of the calibrated light level for 30 minutes. ⁷⁶
LED flashes white for 1 sec. / OFF for 1 sec. Repeats indefinitely.	The mobile app or a timed schedule event has been used to disable the occupancy set or the individual occupancy sensor. The sensor will not respond to motion activity in disabled mode.
Flashes magenta 1 sec. / OFF for 1 sec. Repeats for 15 sec.	The device has been placed into Blink to Identify mode from the WaveLinx App, by using one of the supported identification methods, or the ID Test button has been used on the WaveLinx PRO IR Remote.
Flashes cyan 1 sec/OFF 1 sec. Repeats for a period.	The device firmware is being updated. The cyan flashing pattern will end once the update is complete. ⁷⁴
LED flashes blue one time	The ISHH-01 or the ACC-P-RT IR remote has been used to identify the device.
LED is OFF	The device is not detecting motion. If motion is occurring, ensure device is powered and that the LED has not been disabled through the WaveLinx App. ⁷⁷

⁷³ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

⁷⁴ Devices must be at minimum firmware versions noted to show this behavior: SWPD4/SWPD5 1.10.15.00.

⁷⁵ Devices in user defined areas may exhibit this LED behavior if manually placed in commissioning mode through the advanced user WAC Webpage (advanced technicians only).

⁷⁶ The LED will return to normal motion operation if the light level drops but stays between 50% and 100% of the calibrated light level for 10 minutes OR if the light level falls below 50% of the calibrated light level for 30 seconds.

⁷⁷ The LED may be difficult to see in very bright areas.

WaveLinX PRO Outdoor Sensor Extender/Multiplier continued



How to Place in Pairing Mode:

Method	Description
Power Cycle Method ⁷⁸	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON
ACC-P-RT Remote Method ⁷⁹ or ISHH-01 Remote Method ⁸⁰	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has not been paired, this will trigger pairing mode. The LED in the sensor window will briefly flash blue.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.


Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

LED in sensor window should blink yellow.⁸¹ If controlling lighting, the light should turn ON.

Supported Identification Methods:

Method	Description
Laser pointer or focused flashlight beam	For fixtures mounted at reasonable mounting heights, use a laser pointer or bright, focused beam flashlight to trigger identification mode. Standing beneath the sensor, shine the light directly into the sensor lens for 3-4 seconds. The timing needs to be precise for the identification mode to respond. The LED in the sensor window will flash magenta for 15 seconds as the device will appear to flash on the WaveLinX Mobile App screen.
ACC-P-RT Remote ²⁸ or ISHH-01 Remote ²⁹	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has been paired with a WaveLinX Area Controller, this will trigger identification mode for that device. The LED in the sensor window will briefly flash blue and then will flash magenta for 15 seconds as the device will appear to flash on the WaveLinX Mobile App screen.

Blink to Identify (Control Multiplier only)

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. In **Blink to Identify** mode, the fixture will turn ON for 1 second/OFF for 1 second and repeat for 15 seconds.

Configuring the Device as a Wireless Extender:

It is recommended to add the device to an area it is located near/in. Assign it to the chosen area but do not assign it to a zone.⁸² Give the device a name to identify it as an extender so that it can be easily recognized. No further configuration is necessary.

Configuring the Device as a Control Multiplier

The Control Multiplier switches the load it is connected to and does not dim the lighting. It is recommended that the Control Multiplier be assigned to a zone that is set with a non-dimmable zone type.

Daylighting Information (Control Multiplier only)

Closed Loop Daylight Operation	Open Loop Daylight Operations ⁸³
Once assigned to an area and enabled, the sensor will begin closed loop daylight operation to a reasonable light level. If a specific light level (target) is expected at the surface, then calibration is required. Dim to OFF is automatically disabled. ⁸⁴ Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level. If Dim to OFF is enabled, when the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will turn OFF connected lighting. ⁸⁴ Lighting will be turned back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated light level for longer than 30 seconds.	Daylighting will not operate until an open loop daylight set is configured. Once the open loop daylight set is configured the controlled zone(s) will dim in response to entering daylight. If a specific light level is expected at the surface, the zone(s) response to daylight may need adjustment. Dim to OFF is automatically disabled. ⁸⁴ Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level. If Dim to OFF is enabled, when the measured light exceeds 150% of the adjusted gain for more than 30 minutes, the sensor will turn lighting OFF. ⁸⁴ Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the adjusted gain for longer than 10 minutes. Condition 2: The measured light level falls below 50% of the adjusted gain for longer than 30 seconds.

Closed Loop Daylight Calibration Details	Open Loop Response to Daylight Adjustment
It is recommended that the daylight sensor be calibrated at night. During the day, there is too much daylight to accurately calibrate. At night (full dark), use the Calibrate All feature and adjust slider bars to 100% to turn lighting ON. Once all fixtures are adjusted send the Calibrate command. The ACC-P-RT Remote may also be used to adjust the sensor calibration. ⁷⁹	In standard parking garage scenarios, adjust during daylight hours when electric lighting should be reduced but not fully dimmed. The use of a light meter is recommended. With electric lighting turned OFF, verify with a light meter at the work surface that the reading with daylight alone is within 50% to 75% of the desired target light level. If the light level is too high or too low, return at a time when the daylight level is within this optimal range. To adjust the zone response, in the daylight set Calibrate screen, adjust the slider bar until the lighting is at the desired light level. The ACC-P-RT Remote may also be used to adjust the daylight response. ⁷⁹

⁷⁸ Older firmware devices (prior to SWPD4/SWPD5 1.08.17.00) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).

⁷⁹ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: SWPD4/SWPD5 1.10.15.00.

⁸⁰ Older firmware devices (prior to SWPD4/SWPD5 1.08.17.00) do not support this method. Use the power cycle method to invoke pairing mode.

⁸¹ Devices must be at minimum firmware versions noted to show this behavior: SWPD4/SWPD5 1.10.15.00.

⁸² Assigning it to an area, not a zone prevents the occupancy sensor from being assigned to the area's occupancy set. This prevents the extender from issuing occupancy signals to the area it is assigned to.

⁸³ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: SWPD4/SWPD5 1.10.03.00.

⁸⁴ WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

WaveLinx PRO Outdoor Sensor Extender/Multiplier continued



Loss of Communications Operation

If the device has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior and display loss of communications LED operation until communications are re-established.⁸⁵

Operation upon Return of Power

Upon return of power, connected fixtures will resume the last known light level. If not able to communicate with the WaveLinx Area Controller for more than 15 minutes, loss of communications operation will begin.⁸⁵

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Cycle power the device's circuit **six times** to (switch **OFF 4 seconds** | **ON 4 seconds** – **6th time leave ON**).

This removes pairing for ALL devices of this type on the circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.⁸⁶

The ACC-P-RT IR Remote may also be used to factory reset devices. Please refer to the WaveLinx PRO IR Remote User Guide for details on using the IR factory reset command.⁸⁷

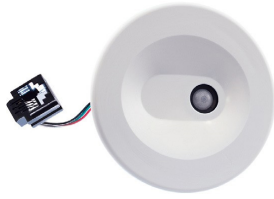
⁸⁵ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

⁸⁶ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

⁸⁷ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: SWPD4/SWPD5 1.10.15.00.

WaveLinX PRO Tilemount Sensor Reference Sheet

WaveLinX PRO Tilemount Sensor



Features

Tilemount Sensor:

- Integrated photocell for closed loop daylighting or open loop daylighting⁸⁸
- Integrated Passive Infrared (PIR) motion sensor for occupancy or vacancy sensing
- IEEE 802.15.4, (router and end point)
- Bluetooth beacon, RTLS capabilities^{89, 90}

Control Module:

- Universal voltage input (120V-277V)
- Output control (120V-277V):
 - Electronic ballast/driver 3 amps
- 0-10V dimming output
 - Sinks up to 20mA (approximately 10 ballasts/drivers [2mA each])

Typical Applications

- Education, office, and other interior spaces

Models:

- **WTA:** WaveLinX Tilemount Sensor Kit

WaveLinX App Details:

- Default Device Name:
 - BLE Integrated Sensor
 - Integrated Sensor
- Unassigned Device Category:
 - Integrated Sensor

Icon Displayed in WaveLinX App:



When connected to a WaveLinX PRO Tilemount Sensor Control Module the WaveLinX PRO Tilemount Sensor provides occupancy sensing, daylight dimming and wireless control for connected 0-10V luminaires that do not support WaveLinX Integrated Sensors.

Out-of-the-Box Operation

- Once power is applied, the attached fixture(s) operates via the motion sensor.
 - The occupancy sensor is set for high sensitivity.
 - If occupied, the fixture will turn ON to 100%⁹¹
 - The fixture will dim to OFF (0%) after 20 minutes when the space is unoccupied.
- The daylight sensor is disabled.
- LED flashes green (in sensor window) for 100ms once every 3 seconds when motion is detected.

Construction Area Default Operation

Once paired, the device operates as part of the Construction Area.

- The daylight sensor remains disabled.
- The sensor LED flashes yellow 1 sec./OFF 1 sec. repeatedly.⁹²

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- The daylight sensor is disabled.
- The sensor LED flashes white for 100ms once every 3 seconds when motion is detected.

- All occupancy sensors report to the area's occupancy set.
 - If occupied, the fixtures will turn ON to 50% (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0).

LED Operation (The LED is located beneath the sensor lens)

LED conditions	Meaning
Flashes green for 100ms, once every 3 sec. with motion	The device is unpaired (out-of-the-box) and is detecting motion. ⁹¹
Flashes yellow for 1 sec./ OFF for 1 sec. Repeats indefinitely.	The device is paired with a WaveLinX Area Controller and is in the Construction Area. ^{92,93}
Flashes white for 100ms, once every 3 sec. with motion	The device is paired to a WaveLinX Area Controller, is assigned to a user created area and is detecting motion.
Flashes green 300ms/ white for 300ms, once every 3 sec. with motion ⁹¹	The device has lost communication with the WaveLinX Area Controller for longer than 15 minutes and is detecting motion.
Flashes white 700ms/ yellow for 300ms, once every 3 sec. with motion.	The device is enabled for daylight dim to OFF and is detecting motion but lighting remains OFF due to the daylight sensor exceeded 150% of the calibrated light level for 30 minutes. ⁹⁴
LED flashes white for 1 sec. / OFF for 1 sec. Repeats indefinitely.	The mobile app or a timed schedule event has been used to disable the occupancy set or the individual occupancy sensor. The sensor will not respond to motion activity in disabled mode.
Flashes magenta 1 sec. / OFF for 1 sec. Repeats for 15 sec.	The device has been placed into Blink to Identify mode from the WaveLinX App, by using one of the supported identification methods, or the ID Test button has been used on the WaveLinX PRO IR Remote.
Flashes cyan 1 sec/OFF 1 sec. Repeats for a period.	The device firmware is being updated. The cyan flashing pattern will end once the update is complete. ⁹²
LED flashes blue one time	The ISHH-01 or the ACC-P-RT IR remote has been used to identify the device.
LED is OFF	The device is not detecting motion. If motion is occurring, ensure device is powered and that the LED has not been disabled through the WaveLinX App. ⁹⁵

⁸⁸ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires a WAC2 (Gen 2) min. version 10.0.x.x and min. sensor firmware: IS 1.09.04.00 and BLE IS 2.06.03.00.

⁸⁹ Older models may not have Bluetooth beacon capabilities.

⁹⁰ RTLS capability may require additional license or firmware purchase.

⁹¹ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

⁹² Devices must be at minimum firmware versions noted to show this behavior: IS 1.10.15.00 and BLE IS 1.11.15.00.

⁹³ Devices in user defined areas may exhibit this LED behavior if manually placed in commissioning mode through the advanced user WAC Webpage (advanced technicians only).

⁹⁴ The LED will return to normal motion operation if the light level drops but stays between 50% and 100% of the calibrated light level for 10 minutes OR if the light level falls below 50% of the calibrated light level for 30 seconds.

⁹⁵ The LED may be difficult to see in very bright areas.

WaveLinX PRO Tilemount Sensor continued



How to Place in Pairing Mode:

Method	Description
Power Cycle Method ⁹⁶	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON
ACC-P-RT Remote Method ⁹⁷ or ISHH-01 Remote Method ⁹⁸	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has not been paired, this will trigger pairing mode. The LED in the sensor window will briefly flash blue.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.


Successful Paired Device Behavior: (While WAC is still in or is placed in pairing mode)

Connected fixture(s) dims to 10%. The LED in sensor window should blink yellow.⁹⁹

Supported Identification Methods:

Method	Description
Laser pointer or focused flashlight beam	For fixtures mounted at reasonable mounting heights, use a laser pointer or bright, focused beam flashlight to trigger identification mode. Standing beneath the sensor, shine the light directly into the sensor lens for 3-4 seconds. The timing needs to be precise for the identification mode to respond. The LED in the sensor window will flash magenta for 15 seconds as the device will appear to flash on the WaveLinX Mobile App screen.
ACC-P-RT Remote ²⁸ or ISHH-01 Remote ²⁹	Standing beneath the sensor, point the remote at the sensor, and then press and release the designated button. If the sensor has been paired with a WaveLinX Area Controller, this will trigger identification mode for that device. The LED in the sensor window will briefly flash blue and then will flash magenta for 15 seconds as the device will appear to flash on the WaveLinX Mobile App screen.

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. In **Blink to Identify** mode, the connected fixture(s) will turn ON for 1 second/OFF for 1 second and repeat for 15 seconds.

Daylighting Information

Closed Loop Daylight Operation	Open Loop Daylight Operations ¹⁰⁰
<p>Once assigned to an area and enabled, the sensor will begin closed loop daylight dimming operation to a reasonable light level. If a specific light level (target) is expected at the surface, then calibration is required.</p> <p>Dim to OFF is automatically disabled.^{101,102} Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled, when the measured light exceeds the calibrated level, the fixture will dim lighting.¹⁰¹ When the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will turn the lighting OFF. Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated light level for longer than 30 seconds.</p>	<p>Daylighting will not operate until an open loop daylight set is configured. Once the open loop daylight set is configured the controlled zone(s) will dim in response to entering daylight. If a specific light level is expected at the surface, the zone(s) response to daylight may need adjustment.</p> <p>Dim to OFF is automatically disabled.¹⁰¹ Lighting will remain at the defined minimum dim level if measured light exceeds the calibrated level.</p> <p>If Dim to OFF is enabled¹⁰¹, when the measured light exceeds 150% of the adjusted gain for more than 30 minutes, the sensor will turn lighting OFF. Lighting will turn back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the adjusted gain for longer than 10 minutes. Condition 2: The measured light level falls below 50% of the adjusted gain for longer than 30 seconds.</p>
Closed Loop Daylight Calibration Details	Open Loop Response to Daylight Adjustment
<p>It is best to calibrate indoor applications when there is a moderate to low level of daylight. If the daylight level is too high, it may be difficult to obtain the desired level of light at the task surface, even if the fixtures are completely OFF. If daylight level is too high and shading is available, use shading to decrease incoming daylight. If it is still too bright, postpone calibration until the amount of incoming daylight has decreased.</p> <p>During calibration, use the Calibrate All feature and adjust slider bars to change the light level for each controlled fixture. Once all fixtures are adjusted, use a light meter to ensure the reading is in the desired range and then send the Calibrate command. The ACC-P-RT Remote may also be used to adjust the sensor calibration.⁹⁷</p>	<p>Perform adjustment during daylight hours when electric lighting should be reduced but not fully dimmed. For best results, with electric lighting turned OFF, verify with a light meter at the work surface that the reading with daylight alone is within 50% to 75% of the desired target light level. If the light level is too high or too low, return at a time when the daylight level is within this optimal range. (For example, if 500 lux is the desired work surface level, the reading should be between 250 to 375 lux with lighting OFF.)</p> <p>To adjust the zone response, in the daylight set Calibrate screen, adjust the slider bar until the lighting is at the desired light level. The ACC-P-RT Remote may also be used to adjust the daylight response.⁹⁷</p>

⁹⁶ Devices with older firmware (prior to IS 1.07.13.00 and BLE IS 2.04.19.00) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).

⁹⁷ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: IS 1.10.15.00 and BLE IS 1.11.15.00.

⁹⁸ Devices must be minimum firmware versions noted to operate with the ISHH-01 Remote: IS 1.07.13.00 and BLE IS 2.04.19.00.

⁹⁹ Devices must be at minimum firmware versions noted to show this behavior: IS 1.10.15.00 and BLE IS 1.11.15.00.

¹⁰⁰ Selecting an integrated sensor to assign to an Open Loop Daylight Set requires min. sensor firmware: IS 1.09.04.00 and BLE IS 2.06.03.00.

¹⁰¹ WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

¹⁰² Tilemount Sensor model SWPD1 (IS) will automatically have **DIM to OFF** enabled and will not offer the ability to disable this feature.

WaveLinx PRO Tilemount Sensor continued



Loss of Communications Operation

If the device has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior and display loss of communications LED operation until communications are re-established.¹⁰³

Operation upon Return of Power

Upon return of power, if connected to a WaveLinx Control Module, the connected fixtures will resume the last known light level. If not able to communicate with the WaveLinx Area Controller for more than approx. 15 minutes, loss of communications operation will begin.¹⁰³

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Cycle power the device's circuit **six times** to (switch **OFF 4 seconds | ON 4 seconds – 6th time leave ON**).

This removes pairing for ALL devices of this type on the circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.¹⁰⁴

The ACC-P-RT IR Remote may also be used to factory reset devices. Please refer to the WaveLinx PRO IR Remote User Guide for details on using the IR factory reset command.¹⁰⁵

¹⁰³ Older firmware devices may go to 75% output when occupied out-of-the-box, take up to 1 hour and flash the LED green 100ms, once every 3 seconds to indicate entering loss of communication operation.

¹⁰⁴ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

¹⁰⁵ Devices must be minimum firmware versions noted to operate with the ACC-P-RT IR Remote: IS 1.10.15.00 and BLE IS 1.11.15.00.

WaveLinX PRO Outdoor Lighting Control Module Reference Sheet

WaveLinX PRO Outdoor Lighting Control Module (WOLC)

**Features**

- Integrated photocell for open loop daylight switching
- IEEE 802.15.4, (router and end point)

Typical Applications

- Outdoor, parking areas, and pathways

Models:

- **WOLC:** WaveLinX Outdoor Lighting Control Module

Available option on many Cooper Lighting luminaires.

WaveLinX App Details:

- Default Device Name:
 - Outdoor Control Module
- Unassigned Device Category:
 - Integrated Sensor

Icon Displayed in WaveLinX App:

The WaveLinX PRO Outdoor Lighting Control Module (WOLC) offers control of outdoor luminaires from the WaveLinX system or to add basic open loop daylight switching capability to outdoor applications.

Out-of-the-Box Operation

- Once power is applied:
 - The attached fixture will turn ON to 100% and then re-evaluate the ON/OFF status based on the available light per the photosensor.
 - From then on, the fixture will turn ON at dusk / OFF at dawn via daylight sensor.

Construction Area Default Operation**Assigned to an Area Default Operation**

Once paired, the device operates as part of the Construction Area.	Once assigned to a created area, the device operates as part of the area.
<ul style="list-style-type: none"> • The daylight sensor remains disabled. It must be assigned to an area and be configured to operate. • It will respond to the sensors in the area's occupancy set. <ul style="list-style-type: none"> • If occupied, the fixtures will turn ON to 50% (Scene 3). • The occupancy set default hold time is 20 minutes. • If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0). • It will respond to any wallstations added to the area per the default wallstation programming. 	

LED Operation

Not applicable. The WaveLinX Outdoor Lighting Control Module has no onboard LED indicator.


How to Place in Pairing Mode:

Method	Description
Automatic	<p>Once powered, an unpaired Outdoor Lighting Control Module will automatically be in pairing mode. It will reinitiate a pairing search command every 20 minutes until a WaveLinX Area Controller is found.</p> <p>A power cycle (switch OFF and then ON) will cause the search to start again approximately 20 seconds after the power up.</p>

Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

- When initially paired, the fixture will dim briefly and then turn full ON and remain ON (this can make it difficult to review paired devices. See next recommendation).
- To verify pairing, make sure to EXIT the WaveLinX Area Controller pairing mode. Then, place the WaveLinX Area Controller back in pairing mode. All Outdoor Lighting Control Modules paired with the WaveLinX Area Controller will dim to 10%.

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. When placed in **Blink to Identify** mode, the fixture will turn ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds.

Daylight Operation (open loop)

Once the Outdoor Lighting Control Module open loop daylight set is created and enabled, lighting will turn ON at dusk and turn OFF at dawn.

If the controlled area contains more than one Outdoor Lighting Control Module, one module may be assigned to control daylighting for the connected fixture or may be assigned to control daylighting for a group of fixtures if it is desired to have them respond to daylighting in the exact same manner.

If fixtures in the zones that are assigned to the open loop daylight set contain Integrated Sensors, closed loop daylighting will automatically be disabled for these sensors.

Open Loop Daylight Set Configuration

- Create the open loop daylight set.
- Assign the zones that should be controlled by the daylight set.¹⁰⁶
- Assign the sensor to the daylight set.

Daylight Calibration Details

Once the open loop daylight set is configured, the WaveLinX Outdoor Lighting Control Module does not require calibration. The WaveLinX Outdoor Lighting Control Module is hardcoded for ON at dusk / OFF at dawn operation based on optimal performance factors for outdoor application. These settings cannot be modified. The lighting will turn OFF if the light level has exceeded 65 lux for a period of 180 seconds (3 minutes). Lighting will turn ON if the light level falls below 16 lux for a period of 30 seconds.

¹⁰⁶ If fixtures in the zones that are assigned to open loop daylight sets contain integrated or Tilemount Sensors, closed loop daylighting will automatically be disabled for these sensors.

WaveLinx PRO Outdoor Lighting Control Module continued



Loss of Communications Operation

If the device has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior until communications are re-established.¹⁰⁷

Operation upon Return of Power

Upon return of power, the fixture will turn ON to 100% until communications are re-established with the WaveLinx Area Controller after which the lighting state is re-evaluated. If not able to communicate with the WaveLinx Area Controller for longer than approx. 15 minutes, the device will begin loss of communications operation.¹⁰⁷

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.




- **Preferred method:** Cycle the power to the device's circuit **six times** (switch **OFF for 5-9 seconds** and then **ON 5-9 seconds – last time leave ON**). After approximately 10 seconds, the device should factory reset.¹⁰⁸
- **Alternate method:** Cycle the power to the device's circuit **at least sixteen and not more than twenty times** (switch **OFF 4 seconds** and then **ON 4 seconds – last time leave ON**). The device should reset after approximately 10 seconds.

This removes pairing for ALL devices of this type on the affected circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.

¹⁰⁷ Devices with older firmware may take up to 1 hour to enter loss of communications operation.

¹⁰⁸ Outdoor Lighting Control Modules prior to firmware version 0x2050560 (v2.05.05.60) will not respond to the 6-power cycle method. Use the alternate 20-cycle method for these devices.

WaveLinx PRO Node Reference Sheet

WaveLinx PRO Node																	
 <p>Features</p> <ul style="list-style-type: none"> IEEE 802.15.4, (router and end point) <p>Special Features</p> <ul style="list-style-type: none"> White Tuning Control for Cooper Lighting Solutions VividTune fixtures (dual channel model recommended) <p>Typical Applications</p> <ul style="list-style-type: none"> Interior spaces where individual fixture sensor controls are not needed White tuning control <p>Models:</p> <ul style="list-style-type: none"> WaveLinx Pro Node, single channel WaveLinx Pro Node, dual channel <p>WaveLinx App Details:</p> <ul style="list-style-type: none"> Default Device Name: <ul style="list-style-type: none"> Wireless Pro Node-1C Wireless Pro Node-2C Unassigned Device Category: <ul style="list-style-type: none"> WL Pro Adapter-1C WL Pro Adapter-2C <p>Icon Displayed in WaveLinx App:</p> <ul style="list-style-type: none"> WaveLinx PRO Node, single channel¹⁰⁹  <ul style="list-style-type: none"> WaveLinx PRO Node, dual channel (icon is dependent on configuration)  <ul style="list-style-type: none"> 2 dimming 1 dimming 1 white tuning 	<p>The WaveLinx PRO Node comes installed within the selected fixture. It is preconfigured with a wireless radio <u>without</u> an Integrated Sensor providing wireless control while reducing wiring, design, and installation time. The WaveLinx PRO Node can provide either a single dimming channel for intensity control¹⁰⁹ or a dual channel control. The dual channel model can be used either for independent intensity control of downlights/uplights within the same fixture, or for combined intensity control and white tuning control when used with a VividTune tunable white fixture. The WaveLinx PRO Node can be easily configured for operation and control using the WaveLinx App.</p> <p>Out-of-the-Box Operation</p> <table border="1"> <thead> <tr> <th>Channel 1</th><th>Channel 2 (dual channel only)</th></tr> </thead> <tbody> <tr> <td>Defaults to a dimmable load. Once power is applied: <ul style="list-style-type: none"> Connected loads will turn ON to 100% and remain ON. </td><td>Defaults to white tuning. Once power is applied: <ul style="list-style-type: none"> Connected load goes to 3500K within the default range of 3000K-5000K.^{110,111} </td></tr> </tbody> </table> <p>Construction Area Default Operation</p> <table border="1"> <thead> <tr> <th>Channel 1</th><th>Channel 2 (dual channel only)</th></tr> </thead> <tbody> <tr> <td>Once paired, the device/channel will be assigned to the Construction Area's Dimmable Zone and will respond per the default operation of occupancy sensors or wallstations that are in the Construction area.</td><td>Once paired, the channel will be assigned to the Construction Area's In Area level as a white tuning device type. When the associated dimming channel is ON, the white tuning channel will remain at 3500K assuming a default range of 3000K-5000K.^{110,111}</td></tr> </tbody> </table> <p>Assigned to an Area Default Operation</p> <table border="1"> <thead> <tr> <th>Channel 1</th><th>Channel 2 (dual channel only)</th></tr> </thead> <tbody> <tr> <td>Once assigned to a created area, the device/channel operates as part of the area. <ul style="list-style-type: none"> It will respond to the sensors in the area's occupancy set. <ul style="list-style-type: none"> If occupied, the fixtures will turn ON to 50% (Scene 3). The occupancy set default hold time is 20 minutes. If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0). It will respond to any wallstations added to the area per the default wallstation programming. </td><td>Once the device is assigned to a created area and white tuning default range is adjusted (if necessary), the White Tuning Response defaults to 3500K for all programmed scenes until scenes are modified. If channel 2 is connected to a dimmable load, the control type can be changed to Dimmable. See "Changing Dual Channel WaveLinx PRO Node Configuration" on page 152 for further information.</td></tr> </tbody> </table> <p>LED Operation</p> <p>Not applicable. The WaveLinx PRO Node has no onboard LED indicator.</p> <p>How to Place in Pairing Mode:</p> <table border="1"> <thead> <tr> <th>Method</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Power Cycle Method</td><td>Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> Turn OFF power for 30 seconds, and then turn ON power for 5 seconds Turn OFF power for 30 seconds, and then turn ON power and leave ON </td></tr> </tbody> </table> <p>The Device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinx Area Controller is not made. Only unpaired devices will enter pairing mode on the power cycle.</p> <p>Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)</p> <ul style="list-style-type: none"> Dimmable device/channel dims to 10%. White tuning channel remains at 3500K. 	Channel 1	Channel 2 (dual channel only)	Defaults to a dimmable load. Once power is applied: <ul style="list-style-type: none"> Connected loads will turn ON to 100% and remain ON. 	Defaults to white tuning. Once power is applied: <ul style="list-style-type: none"> Connected load goes to 3500K within the default range of 3000K-5000K.^{110,111} 	Channel 1	Channel 2 (dual channel only)	Once paired, the device/channel will be assigned to the Construction Area's Dimmable Zone and will respond per the default operation of occupancy sensors or wallstations that are in the Construction area.	Once paired, the channel will be assigned to the Construction Area's In Area level as a white tuning device type. When the associated dimming channel is ON, the white tuning channel will remain at 3500K assuming a default range of 3000K-5000K. ^{110,111}	Channel 1	Channel 2 (dual channel only)	Once assigned to a created area, the device/channel operates as part of the area. <ul style="list-style-type: none"> It will respond to the sensors in the area's occupancy set. <ul style="list-style-type: none"> If occupied, the fixtures will turn ON to 50% (Scene 3). The occupancy set default hold time is 20 minutes. If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0). It will respond to any wallstations added to the area per the default wallstation programming. 	Once the device is assigned to a created area and white tuning default range is adjusted (if necessary), the White Tuning Response defaults to 3500K for all programmed scenes until scenes are modified. If channel 2 is connected to a dimmable load, the control type can be changed to Dimmable . See "Changing Dual Channel WaveLinx PRO Node Configuration" on page 152 for further information.	Method	Description	Power Cycle Method	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> Turn OFF power for 30 seconds, and then turn ON power for 5 seconds Turn OFF power for 30 seconds, and then turn ON power and leave ON
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Power Cycle Method	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> Turn OFF power for 30 seconds, and then turn ON power for 5 seconds Turn OFF power for 30 seconds, and then turn ON power and leave ON 																


¹⁰⁹ The WaveLinx PRO Node Single Channel device can be changed from dimming to white tuning control. In this rare application, the single channel adapter will show a CCT icon instead of the dimmable load icon shown and will display white tuning configuration screens.

¹¹⁰ The actual color temperature may differ if attached load has a different white tuning range than the default 3000K-5000K range.

¹¹¹ If channel 2 on the dual channel is connected to a dimmable load, the load may remain ON at a dimmed level until the channel is configured for a dimmable load.

WaveLinx PRO Node continued

**Blink to Identify**

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond with the following behavior:

Dimmable Device/Channel	White Tuning Channel
<ul style="list-style-type: none"> When placed in Blink to Identify mode, the connected fixture(s) will turn ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds. 	<ul style="list-style-type: none"> When placed in Blink to Identify mode, the connected tunable white fixture(s) will cycle between cool and warm color temperatures for 15 seconds.

White Tuning Configuration Details

For proper white tuning control, the device must be configured for white tuning control and assigned to a white tuning zone.

- Create the dimming zone(s) needed for the area. (p. 134)
- Create the white tuning zone(s) needed for the area. (p. 134)
- Identify each dual channel WaveLinx PRO Node and when adding them, select the dimming zone for the intensity channel and the white tuning zone for the white tuning channel. (p. 149)
- Add other devices to the area as needed and proceed with programming.

Loss of Communications Operation

If the device has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior until communications are re-established.

Operation upon Return of Power

Upon return of power, the device will resume its last known light level/white tuning level. If not able to communicate with the WaveLinx Area Controller for more than approx. 15 minutes, loss of communications operation will begin.

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.¹¹²

- Cycle power to the device's circuit **six times** (switch **OFF 30 seconds** | **ON 5 seconds** – **6th time leave ON**).

This removes pairing for ALL devices of this type on the affected circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.^{112,113}

¹¹² If the device has been paired with the WAC prior and the device is still showing in the WAC database, the device will resume operation with the previously programmed settings if paired with the same WAC again. To completely remove the device and pair as a new device with the factory defaults, delete the device from the database and perform the factory reset cycle before pairing the device with the WAC.

¹¹³ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

WaveLinx PRO Universal Voltage Dimming Switchpack Reference Sheet

WaveLinx PRO Universal Voltage Dimming Switchpack



General Features

- Universal voltage
 - RSP-P-010-347:** (120V-347V)
 - WSP-MV-010:** (120V-277V)
 - WSP-UV-010:** (120V-347V)
- Output control
 - Electronic ballast/driver 16A
 - General purpose (receptacle) 20A
 - Motor loads up to 1.5 HP (120VAC)
- Class 2, 0-10V dimming output
 - Sinks up to 120mA (approximately 60 ballasts/drivers [2mA each])
- IEEE 802.15.4, (router and end point)

Special Features

- White Tuning Control for Cooper Lighting Solutions VividTune fixtures

Typical Applications

- Office, education, and other indoor applications
- White tuning control

Models:

- RSP-P-010-347:** WaveLinx Pro Switchpack
- WSP-MV-010:** Relay Switchpack with 0-10V
- WSP-UV-010:** Universal Voltage Dimming Switchpack

WaveLinx App Details:

- Default Device Name:
 - Relay Switchpack
- Unassigned Device Category:
 - Relay Switch Pack

Icon Displayed in WaveLinx App:



Use the WaveLinx PRO Universal Voltage Dimming Switchpack to wirelessly control a zone of switched loads, 0-10V dimmable lighting loads, or for 0-10V control of tunable white lighting.

Out-of-the-Box Operation

Connected for Lighting Control	Connected for White Tuning Control
<p>Once power is applied:</p> <ul style="list-style-type: none"> Connected loads will turn ON and 0-10V dimmable loads will go to 100%.¹¹⁴ The onboard commissioning button can be pressed (less than 4 seconds) to turn load OFF and ON. White LED on switchpack indicates load state. 	<p>Once power is applied:</p> <ul style="list-style-type: none"> If controlling white tuning, the color temperature of the attached load will default to the cool white side of the color temperature spectrum. <p>(Actual color temperature is dependent on the color temperature range of attached load).</p>

Construction Area Default Operation

Connected for Lighting Control	Connected for White Tuning Control
<p>Once paired, the device will respond per the default operation of occupancy sensors or wallstations that are in the Construction area.</p>	<p>White tuning operation may have unexpected operation until configured for White Tuning in the WaveLinx App due to operation of occupancy sensors and wallstations in the Construction area.</p>

Assigned to an Area Default Operation

Connected for Lighting Control	Connected for White Tuning Control
<p>Once assigned to a created area, the device operates as part of the area.</p> <ul style="list-style-type: none"> It will respond to the sensors in the area's occupancy set. <ul style="list-style-type: none"> If occupied, the fixtures will turn ON to 50% (Scene 3). The occupancy set default hold time is 20 minutes. If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0). It will respond to any wallstations added to the area per the default wallstation programming. 	<p>Once the device is assigned to a created area, configured for White Tuning, and assigned to a White Tuning Zone:</p> <p>The White Tuning Response defaults to 3500K for all programmed scenes.</p>

LED Operation

LED conditions	Meaning
ON (white)	The device relay is closed
OFF	The device relay is opened
Flashes ON and OFF approximately 1 time per second for 10 seconds	Onboard commissioning button has been pressed for longer than 4 seconds, placing the device in pairing mode.

How to Place in Pairing Mode:

Method	Description
Power Cycle Method ¹¹⁵	<p>Using the circuit breaker, perform the following power cycle sequence:</p> <ul style="list-style-type: none"> Turn OFF power for 30 seconds, and then turn ON power for 5 seconds Turn OFF power for 30 seconds, and then turn ON power and leave ON
Onboard Commissioning Button	Press the onboard commissioning button for more than 4 seconds. The onboard LED will blink for 10 seconds to indicate the device has entered pairing mode.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinx Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.

¹¹⁴ Devices with older firmware may go to 75% light output in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

¹¹⁵ Devices with older firmware (prior to WSP-MV 1.08.12.00 and WSP-UV 1.01.05.00) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).


WaveLinX PRO Universal Voltage Dimming Switchpack continued



Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

Connected for Lighting Control	Connected for White Tuning Control
Connected loads will turn ON and 0-10V dimmable loads will go to 10%.	Connected tunable white fixtures will assume a warm white color temperature. (Actual color temperature is dependent on the color temperature range of attached load).

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond with the following behavior:

Connected for Lighting Control	Connected for White Tuning Control
<ul style="list-style-type: none">When placed in Blink to Identify mode, the connected fixture(s) will turn ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds.	<ul style="list-style-type: none">When placed in Blink to Identify mode, the connected tunable white fixture(s) will cycle between cool and warm color temperatures for 15 seconds.

White Tuning Configuration Details

- For proper white tuning control, the device must be configured for white tuning control and assigned to a white tuning zone.
- Create the dimming zone(s) needed for the area. (p. 134)
 - Create the white tuning zone(s) needed for the area. (p. 134)
 - Identify all fixture integrated sensors in the room and assign them to the dimming zone(s). (p. 146)
 - Configure the WaveLinX Universal Voltage Dimming Switchpack (p. 154):
 - Identify the switchpack controlling the color temperature and assign it to the **AREA**.
 - Edit the switchpack in the area, changing the type to white tuning and defining the color temperature range for the fixture.
 - Assign the white tuning switchpack to the white tuning zone.
 - Add other devices to the area as needed and proceed with programming.

Loss of Communications Operation

If the device has not communicated with the WaveLinX Area Controller for longer than approx.15 minutes, it will revert to its out-of-the-box behavior until communications are re-established.¹¹⁶

Operation upon Return of Power

Upon return of power, the device will resume its last known light level. If not able to communicate with the WaveLinX Area Controller for more than approx. 15 minutes, loss of communications operation will begin.¹¹⁶

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Cycle power the device's circuit **six times** to (switch **OFF 4 seconds** | **ON 4 seconds** – **6th time leave ON**).

This removes pairing for ALL devices of this type on the affected circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.¹¹⁷

¹¹⁶ Devices with older firmware may go to 75% light output in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

¹¹⁷ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

WaveLinX PRO Universal Voltage Dimming Switchpack with Dry Contact Input Reference Sheet

WaveLinX PRO Universal Voltage Dimming Switchpack with Dry Contact Input



General Features

- Universal voltage input (120V-347V)
- Output control (120V-347V):
 - Electronic ballast/driver 16A
 - General purpose (receptacle) 20A
- Class 2, 0-10V dimming output
 - Sinks up to 30mA (approximately 15 ballasts/drivers [2mA each])
- IEEE 802.15.4, (router and end point)

Special Features

- One input terminal can connect to an external maintained contact closure (dry) or Greengate occupancy sensor(s) (max. 40mA).

Typical Applications

- Office, education, or other indoor applications
- Where interface to Greengate occupancy sensors or external input is required

Models:

- **WSP-CA-010:** Universal Voltage Dimming Switchpack with Dry Contact Input

WaveLinX App Details:

- Default Device Name:
 - Relay Switchpack CCI
- Unassigned Device Category:
 - 347V Relay Switch Pack

Icon Displayed in WaveLinX App:

Dimmable Output



Input (dependent on configuration)



Not Used



Contact Closure



Occupancy Sensor

Use the WaveLinX PRO Universal Voltage Dimming Switchpack with Dry Contact Input to wirelessly control a zone of switched loads or 0-10V dimmable lighting loads. It can also be used to connect an external maintained dry-contact closure or to Greengate low-voltage occupancy sensor(s) (max. 40mA) to the WaveLinX system. See sensor specification sheets for model specific power requirements.

Out-of-the-Box Operation

Connected for Lighting Control	Connected Contact Input
Once power is applied: <ul style="list-style-type: none"> • Connected loads will turn ON and 0-10V dimmable loads will go to 100%¹¹⁸ 	If the optional contact closure is connected, the contact closure will not function until configured through the WaveLinX App.

Construction Area Default Operation

Connected for Lighting Control	Connected Contact Input
Once paired, the device will respond per the default operation of any occupancy sensors or wallstations that are in the Construction area.	If the optional contact closure is connected, the contact closure will not function until configured through the WaveLinX App.

Assigned to an Area Default Operation

Connected for Lighting Control	Connected Contact Input
Once assigned to a created area, the device operates as part of the area. <ul style="list-style-type: none"> • It will respond to the sensors in the area's occupancy set. <ul style="list-style-type: none"> • If occupied, the fixtures will turn ON to 50% (Scene 3). • The occupancy set default hold time is 20 minutes. • If the space remains unoccupied for 20 minutes, the fixtures will dim to 0% (Scene 0). • It will respond to any wallstations added to the area per the default wallstation programming. 	If the optional contact closure is connected, the contact closure will not function until configured through the WaveLinX App.

LED Operation

Not applicable. The WSP-CA-010 Universal Dimming Switchpack has no onboard LED indicator.

How to Place in Pairing Mode:

Method	Description
Automatic	Once powered, an unpaired Universal Dimming Switchpack will automatically be in pairing mode. It will reinitiate a pairing search command every 20 minutes until a WaveLinX Area Controller is found. A power cycle (switch OFF and then ON) will cause the search to start again approximately 20 seconds after the power up.

Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)



Connected for Lighting Control	Connected Contact Input
<ul style="list-style-type: none"> • When initially paired, the connected fixture(s) will dim briefly and then turn full ON and remain ON (this can make it difficult to review paired devices. See next recommendation). • To verify pairing, make sure to EXIT the WaveLinX Area Controller pairing mode. Then, place the WaveLinX Area Controller back in pairing mode. All fixtures connected to Universal Dimming Switchpacks that are paired with the WaveLinX Area Controller will dim to 10%. 	If used only for a contact input device, there is no visual feedback that pairing is successful.

¹¹⁸ Devices with older firmware may go to 75% light output in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

WaveLinX PRO Universal Dimming Switchpack with Dry Contact Input continued



Supported Identification Methods:

Connected for Lighting Control	Connected Contact Input Greengate Occupancy Sensor	Connected Contact Input Maintained Closure
Blink to Identify: <ul style="list-style-type: none"> Use the WaveLinX App's Blink to Identify feature to identify the device. Select  in the device row or from the device's dimmable screen to place the device in Blink to Identify mode. The icon will appear to pulse and a load matching that type should respond. 	Requires configuration as an Occupancy Sensor through the WaveLinX App: <ul style="list-style-type: none"> Once configured, in the device's occupancy screen, use the Blink to Identify option by tapping . The Blink to Identify mode cannot be manually cancelled and will time out on its own after a 1-minute period. 	Requires configuration as a Contact Closure Input through the WaveLinX App: <ul style="list-style-type: none"> If the device is in the construction area, manually open or close the contact to reverse identify the device on the WaveLinX App. If the device is assigned to an area, navigate to the device's Maintained CCI screen. Manually open or close the contact while watching the Current Status field to see if it reflects the activity. If it does, the device has been identified. Repeat as needed.

Blink to Identify Behavior

Connected for Lighting Control	Connected Contact Input Greengate Occupancy Sensor	Connected Contact Input Maintained Closure
<ul style="list-style-type: none"> When placed in Blink to Identify mode, the connected fixture(s) will turn ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds. 	<ul style="list-style-type: none"> The Universal Dimming Switchpack will cycle power to the Greengate sensor, causing the sensor to flash its LEDs and to issue an occupied command.¹¹⁹ The Blink to Identify mode cannot be manually cancelled and will time out on its own after a 1-minute period. 	<ul style="list-style-type: none"> Not applicable for contact closure input devices.

Contact Input Configuration Details

For operation from the onboard contact input, the device must be configured for contact input control. The output of the device can be used to control a dimmable load while the input is used for contact closure devices.

- If connected to a lighting load, identify, and assign the Universal Dimming Switchpack to the zone and area it should operate with. (Skip this if the device is not connected to a lighting load and is only being used for a contact input connection).
- Open the device and in the **Optional Input** screen, select the device behavior.
- Identify the device by using the supported identification methods described in this section based on the type of input being used.
- If not already in the area, assign the device to the area.
- Occupancy sensors will automatically be assigned to the default occupancy set of the area.
- Contact inputs will need to be defined with the desired behavior for the open and closed commands.

Programmable Contact Closure Input Actions:

When set for a contact closure input type, the following actions are available

- Wall Status Toggle¹²⁰
- Scene Select, Scene Toggle
- Zone Level, Zone Toggle

Loss of Communications Operation

If the device has not communicated with the WaveLinX Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior until communications are re-established.¹²¹

Operation upon Return of Power

Upon return of power, the connected lighting will turn ON to 100% until communications are re-established with the WaveLinX Area Controller after which the lighting state is re-evaluated. If not able to communicate with the WaveLinX Area Controller for longer than approx. 15 minutes, the device will begin loss of communications operation.¹²¹

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Preferred method:** Cycle the power to the device's circuit **six times** (switch **OFF for 5-9 seconds** and then **ON 5-9 seconds – last time leave ON**). After approximately 10 seconds, the device should factory reset.¹²²
- Alternate method:** Cycle the power to the device's circuit **at least sixteen and not more than twenty times** (switch **OFF 4 seconds** and then **ON 4 seconds – last time leave ON**). The device should reset after approximately 10 seconds.

This removes pairing for ALL devices of this type on the affected circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.

¹¹⁹ Greengate sensors not approved for use with WaveLinX or not directly connected for power from the WaveLinX Universal Voltage Dimming Switchpack may not exhibit the described behavior.

¹²⁰ **Wall Status Toggle** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher. This option is for use with Partitioned Areas.

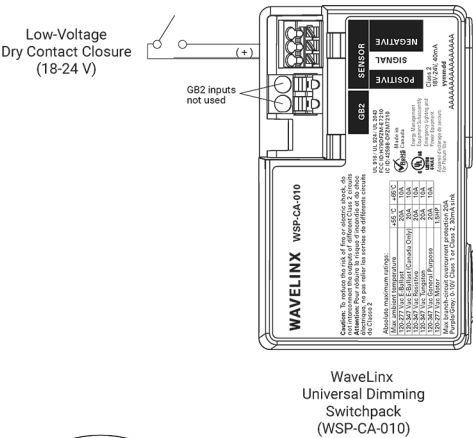
¹²¹ Devices with older firmware may go to 75% light output in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

¹²² Universal Voltage Dimming Switchpacks prior to firmware version 0x2180560 (v2.18.05.60) will not respond to the 6-power cycle method. Use the alternate 20-cycle method for these devices.

WaveLinX PRO Universal Dimming Switchpack with Dry Contact Input continued

Contact Closure Details

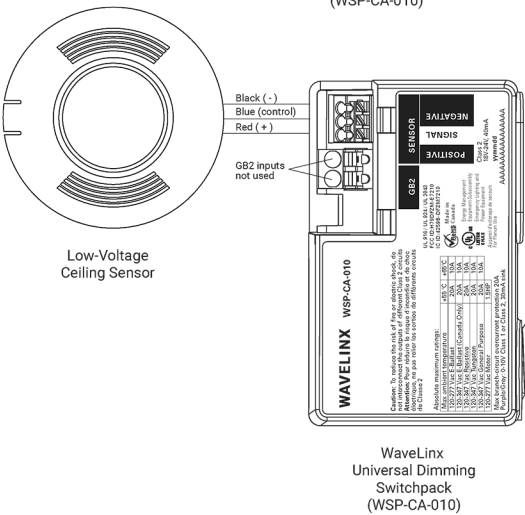
The WSP-CA-010 model WaveLinX Universal Voltage Dimming Switchpacks supports connection to an external contact closure or a Greengate Occupancy Sensor.



Contact Closure Input

The contact closure allows connection from an external system or device that can provided a dry (no voltage) maintained closure from a contact with a contact resistance of less than 1K Ohm.

Connect the dry contact to the sensor connection's positive and signal terminals.



Occupancy Sensor Input

The contact closure input also allows for connection to a supported Greengate Occupancy Sensor. Greengate Occupancy Sensor(s) may be powered directly from the switchpack contact closure (up to 40mA). See sensor specification sheets for model specific power requirements.

Connect the sensor's wiring matching the red wire to the positive terminal, blue to the signal terminal, and black to the negative terminal.

Greengate Sensor Onboard Selection Switch Settings

Greengate Occupancy Sensors have onboard configuration switches for configuration in a non-WaveLinX application. **For best operation with the WaveLinX system, set the configuration switches for the settings shown.** Refer to the installation instructions for the sensor being used to identify the switch locations. If sensors have additional option switches, leave them at the defaults described in the sensor installation instructions

Setting	Default	Recommended Setting
Time Delay	Auto	5 minutes
Activation Mode ¹²³	Auto	Auto
Override Mode	Disabled	Disabled
Daylight Options	Disabled	Disabled

¹²³ Not all supported Greengate sensor types will have this option.

WaveLinx PRO Receptacle Reference Sheet

WaveLinx PRO Receptacle



WR-15



WR-20

Features

- Top outlet is wirelessly controlled through WaveLinx while bottom outlet remains constantly powered
- IEEE 802.15.4, (router and end point)
- Input/Output 120VAC
 - WR-15: 15A
 - WR-20: 20A

Typical Applications

- Education, office, and other interior spaces

Models:

- **WR-15:** WaveLinx Receptacle 15A
- **WR-20:** WaveLinx Receptacle 20A

WaveLinx App Details:

- Default Device Name:
 - Receptacle
- Unassigned Device Category:
 - Receptacle

Icon Displayed in WaveLinx App:

The WaveLinx PRO Receptacle enables energy savings by turning OFF the top outlet when the area is unoccupied or with other programmed actions, simplifying plug load control requirements. The bottom outlet remains constantly powered.

Out-of-the-Box Operation

- Once power is applied, the wirelessly controlled outlet will turn ON.
- LED will illuminate green to indicate that the controlled outlet is ON.
- The manual pushbutton can be pressed (short press) to toggle the controlled outlet ON and OFF. (The LED will follow the state of the controlled outlet.)

Construction Area Default Operation

The controlled outlet will remain in current state (ON/OFF) unless the onboard pushbutton is pressed.

Assigned to an Area Default Operation

If assigned to Area: The controlled outlet will remain in current state (ON/OFF) unless the onboard pushbutton is pressed.

If assigned to a Receptacle Zone in the Area:

- It will respond to the sensors in the area's occupancy set.
 - If occupied, controlled WaveLinx Receptacles will turn ON (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, controlled WaveLinx Receptacles will turn OFF (Scene 0).
- All paired wallstations will operate the area devices per their default programming (WaveLinx Receptacles turn OFF with Scene 0 and ON with other scenes).

LED Operation

LED conditions	Meaning
Solid green	The controlled outlet is currently ON
OFF	The controlled outlet is currently OFF, or the device is not powered.
Flashing for 15 sec. <ul style="list-style-type: none"> • Green/Amber: controlled outlet is ON • Red/OFF: controlled outlet is OFF 	This can occur in the following situations: <ul style="list-style-type: none"> • The onboard pushbutton is used to place the WaveLinx Receptacle in pairing mode. • The onboard pushbutton is used to Factory Reset the WaveLinx Receptacle. • The onboard pushbutton is pressed and released when the WaveLinx Receptacle is paired but still in the Construction Area. • The WaveLinx App is used to place the WaveLinx Receptacle in Blink to Identify mode.

WaveLinx PRO Receptacle continued



WR-15



WR-20

How to Place in Pairing Mode:

Method	Description
Onboard Pushbutton	Press and hold the manual push button for 5 seconds. Release the push button when the LED starts flashing. ¹²⁴



Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

- **During pairing:** the outlet LED may flash red/OFF or green/amber. The outlet may turn OFF for a period and then turn back ON. The duration of the OFF period should not last longer than 5 minutes.
- **If previously paired and the WaveLinx Area Controller is placed back in pairing mode:** All paired WaveLinx Receptacles still in the default construction area will turn OFF for 5 minutes. After 5 minutes, the WaveLinx Receptacles will turn back ON.

If previously paired and the WaveLinx Area Controller is NOT in pairing mode: Press the manual push button to toggle the controlled outlet. A paired WaveLinx Receptacle still in the default construction area will flash its LED between red/OFF or green/amber for 15 seconds.

Supported Identification Methods:

- **Onboard Pushbutton:** Press and release (1 second press) the manual push button on the front of the controlled outlet. The WaveLinx Receptacle may toggle state when the push button is pressed, and the LED may flash red/OFF or green/amber.

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. When placed in **Blink to Identify** mode:

- The outlet LED will flash for a period of 15 seconds.
 - If the outlet is OFF, the LED will flash between red and OFF.
 - If the outlet is ON, the LED will flash between green and amber.

Loss of Communications Operation

If communication is lost with WaveLinx Area Controller, the controlled outlet will remain in the last commanded state. The manual pushbutton may be used to toggle the controlled outlet ON and OFF until communications are re-established.

Operation upon Return of Power

Upon return of power, the controlled outlet will remain in the last known state until a command is received.

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Press and hold the manual push button for **5 seconds**. Release the push button when the LED starts flashing.

The device should exhibit out-of-the-box behavior and may be paired as a new device.

¹²⁴ The LED may flash red or cycle between green and amber during the pairing process.

WaveLinX PRO Ceiling Sensor Reference Sheet

WaveLinX PRO Ceiling Sensor



Features

- Integrated photocell for open loop daylighting
- Integrated Passive Infrared (PIR) motion sensor for occupancy or vacancy sensing
- IEEE 802.15.4, (end point)

Power:

- 2-replaceable AA Alkaline batteries
 - 7-year life (occupancy only)
 - 6-year life (occupancy + daylighting)

Typical Applications

- Education, office, and other interior spaces

Models:

- CWPD-1500: WaveLinX Ceiling Sensor

WaveLinX App Details:

- Default Device Name:
 - Ceiling Sensor xxxx (MAC ID)
- Unassigned Device Category:
 - Ceiling Sensor

Icon Displayed in WaveLinX App:



The WaveLinX PRO Ceiling Sensor provides motion sensing and/or open loop daylight dimming to the WaveLinX system. In open loop daylighting applications, the sensor can control multiple zones in the same space. The WaveLinX Ceiling Sensor is battery powered, mounting easily where needed without the need for wiring.

Out-of-the-Box Operation

- Once the batteries are installed:
 - The LED may flash red once approximately every 10 seconds to indicate the unit is powered.
 - The daylight sensor and occupancy sensor will have no control functionality out-of-the-box.

Construction Area Default Operation



Once paired, the device operates as part of the Construction Area.

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.



- The daylight sensor remains disabled. It must be assigned to an area and be configured to operate.
- All occupancy sensors report to the area's occupancy set.
 - If occupied, the fixtures will turn ON to 50% (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0).
- Sensor LED flashes red approximately once every 10 seconds to indicate the sensor is powered.

LED Operation (The LED is located between the two sensor pushbuttons)

LED conditions	Meaning
Flashes red approximately once every 10 seconds	The device is powered.
Flashes red one time when the wireless PAIR button  is pressed	The device is paired with a WaveLinX Area Controller
Flashes red approximately 10 times	Will occur when the wireless PAIR button  is pressed OR if a flashlight shines into the sensor lens and the device is not paired with a WaveLinX Area Controller yet. This flash sequence indicates that the device has entered pairing mode. ¹²⁵

How to Place in Pairing Mode:

Pair line powered devices first as they support communications to the battery powered devices. If no line powered devices are paired, the WaveLinX Area Controller will only allow six battery powered devices to pair.

Method	Description
PAIR button (Preferred Method)	Press the wireless PAIR button (identified with  symbol) onboard the sensor to initiate pairing mode. 
Flashlight Method	Shine a bright flashlight into the lens of the battery powered sensor. ¹²⁶

The LED in the sensor window may flash ON and OFF for 10 seconds (approximately 10 times) to indicate that the sensor is in pairing mode before returning to its normal blink pattern.

Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

There is not immediately feedback that the device paired successfully.¹²⁵ If paired, the device will be visible in the WaveLinX App.

¹²⁵ The LED may flash slowly two times (3 seconds ON, 3 seconds OFF) as the device pairs with the WaveLinX Area Controller.

¹²⁶ Motion activity may also trigger PAIR mode although this method is not reliable.

WaveLinX PRO Ceiling Sensor continued



Supported Identification Methods:

- **Laser pointer or focused flashlight beam:** For sensors mounted at reasonable mounting heights, use a laser pointer or bright, focused beam flashlight to trigger identification mode. Standing beneath the sensor, shine the light directly into the sensor lens for 3-4 seconds to identify the device in the Construction Area.

Battery powered devices do not support **Blink to Identify** mode.

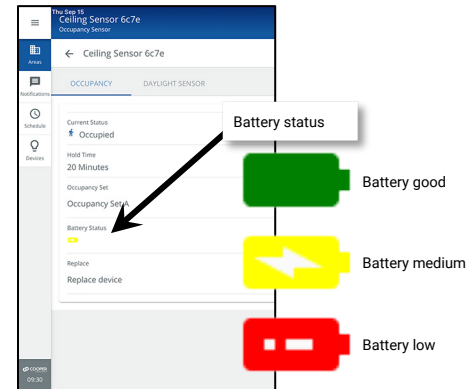
Battery Charge Indicator

The WaveLinX App will give indication of the current charge of the batteries in the sensor within the Ceiling Sensor page.

- Battery good: >2.6V
- Battery medium: <= 2.6V – 2.4V
- Battery low: <2.4V

Operation upon Battery Change

- Upon battery change, after the device automatically reconnects to the WaveLinX Area Controller, the device will operate with the last programmed settings. (device retains programming in unpowered state).



Open Loop Daylight Operation

Daylighting will not operate until an open loop daylight set is created and configured.

- Once configured and calibrated, the controlled zones will dim in response to entering daylight.
 - When the measured daylight contribution increases or decreases, the controlled zones will dim or raise lighting to reduce or increase the light level.
 - When the measured light level exceeds 150% of the calibrated gain for more than 30 minutes, the sensor will dim to OFF.
- If lighting has dimmed to OFF and the area is still occupied, lighting will be turned back ON when one of the two conditions occurs:
 - The measured light level falls between 100% and 50% of the calibrated gain for more than 10 minutes
 - The measured light level falls below 50% of the calibrated gain for longer than 30 seconds

Open Loop Daylight Set Configuration

- Create the open loop daylight set.
- Assign the zones that should be controlled by the daylight set.¹²⁷
- Assign the sensor to the daylight set
- Calibrate the sensor

Important Mounting Considerations

- Open loop daylight sensors should be mounted so that the sensor lens views mainly daylight, not the electric light being controlled in the area.
- The optimal mounting location for occupancy sensing may not be optimal for open loop daylighting. Separate sensors may be necessary.

Open Loop Daylight Adjustment Details

Perform adjustment during daylight hours when electric lighting should be reduced but not fully dimmed. The use of a light meter is recommended. With electric lighting turned OFF, verify with a light meter at the work surface that the reading with daylight alone is within 50% to 75% of the desired target light level. If the light level is too high or too low, return at a time when the daylight level is within this optimal range. (For example, if the desired light level at the work surface is 500 lux, the reading with electric lighting OFF should be between 250 to 375 lux for best results.)

In the daylight set's **Calibrate** screen, adjust the slider bar to change the light level to the desired light level, then tap the back button to save the change.

Loss of Communications Operation

Not applicable for this device type. If communication is lost with WaveLinX Area Controller, the sensor will not control the assigned loads until communications are re-established.

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Remove the battery for exactly 5 seconds then replace.
- Wait for the LED to illuminate on power up and then turn OFF.
- Immediately press the radio button (Ⓜ) ten times at 1 second intervals.
- Wait a few seconds and then press the radio button (Ⓜ) one time. After the button is released, the LED should remain OFF for about 3 seconds, flash slowly 2 times and then quickly 1 time (3 flashes total) to indicate that the reset was successful.

The device may be paired as a new device.

¹²⁷ If fixtures in the zones that are assigned to open loop daylight sets contain Integrated Sensors or Tilemount Sensors, closed loop daylighting will automatically be disabled for these devices.

WaveLinX PRO W-Series Wallstation Reference Sheet

WaveLinX PRO W-Series Wallstation



Features

- Multi-scene selection, raise/lower, and toggle ON/OFF control
- Single or multi-gang mounting
- Faceplate and buttons changeable
- IEEE 802.15.4, (router and end point)

Power:

- Line voltage powered 120-277VAC (neutral required)

Typical Applications

- Education, office, and other interior spaces

Models:

- Large Button Configurations:
 - W1L, W1L-RL, W2L, W2L-RL, W3L
- Small Button Configurations:
 - W2S, W2S-RL, W4S, W4S-RL, W5S, W6S

WaveLinX App Details:

- Default Device Name:
 - Wall Station
- Unassigned Device Category:
 - Wallstation

Icon Displayed in WaveLinX App:



Programmable options:

- Scene Selection
- Scene Toggle
- Save Scene
- Zone Toggle
- Zone Level
- Raise
- Lower
- Hold/Release Occupied
- Wall Status Toggle¹²⁸
- No Action
- Network Action from WaveLinX CORE¹²⁹

Use the WaveLinX PRO W-Series Wallstations to manually operate connected loads and provide customized light levels for each controlled space.

Out-of-the-Box Operation

- Once power is applied, if a button is pressed, the button's LED will flash slowly for 10 seconds.
- The WaveLinX W-Series Wallstation will have no control functionality out-of-the-box.

Construction Area Default Operation

Assigned to an Area Default Operation

Once paired, the device operates as part of the Construction area.	Once assigned to a created area, the device operates as part of the area.
<ul style="list-style-type: none"> • All WaveLinX wallstations will operate all lighting devices and WaveLinX receptacles in the area per the default scenes and programming (see chart next page). • The button LED indicator will illuminate to indicate the currently active scene. 	

Button LED Operation

LED conditions	Meaning
Button LED flashes ON 500ms/OFF 1 sec. Repeats for 10 sec. when pressed	The wallstation has not yet been paired. The wallstation has been placed in pairing mode and is searching for a WaveLinX Area Controller. The wallstation will remain in pairing mode for 60 minutes.
Button LED ON	The button's command is currently active.
Button LED OFF	The button's command is not active or not programmed. If button LEDs are OFF, and buttons are not responsive, verify the station is powered.
Button LED flashes ON 1 sec./OFF 1 sec. and repeats for 10 sec. when pressed.	The wallstation has been disabled by a timed event or has been manually disabled using the WaveLinX App.
Button LED flashes quickly for 5 sec. when pressed	The wallstation was paired with a WaveLinX Area Controller but is no longer communicating with it.
All LEDs flash in a cycle pattern for 15 sec.	The wallstation is in Blink to Identify mode.
All LEDs flash in a cycle pattern, continuously	The wallstation has successfully paired, is in the Construction Area, and the WaveLinX Area Controller is in pairing mode.

How to Place in Pairing Mode:

Method	Description
Press button (Preferred Method)	Press any button on the wallstation to initiate a pairing request from an unpaired wallstation. The LED on the button should flash slowly for approximately 10 seconds.
Power Cycle Method ¹³⁰	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.


Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

Once successfully paired, all button LEDs will flash in a top to bottom and then bottom to top pattern until pairing mode is exited.

Supported Identification Methods:

- **Button Press:** Press any button on the wallstation. If the wallstation is in the Construction Area, the LED will flash for 15 seconds.

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse, and the wallstation LEDs should respond. When placed in **Blink to Identify** mode the wallstation with flash all button LEDs in a cycle pattern for a period of 15 seconds.

¹²⁸ **Wall Status Toggle** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher. This option is for use with Partitioned Areas.

¹²⁹ **Network Action** will only show in WAC2 (Gen 2) version 10.0.x.x firmware and higher. WAC must be a configured part of a WaveLinX CORE platform to perform supported network actions. When programmed for this action type, the button LED will not change when the button is used.

¹³⁰ W-Series Wallstations with older firmware (prior to 01.07.10.00) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).

WaveLinX PRO W-Series Wallstation continued

**Loss of Communications Operation**

If communication is lost with WaveLinX Area Controller, the wallstation will not control the assigned loads until communications are re-established. If a button with an LED indicator is pressed, the LED will flash quickly for 5 seconds to indicate its offline status.

Operation upon Return of Power

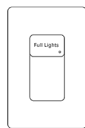
Upon return of power and connection to the WaveLinX Area Controller, the wallstation will wait for a button press before issuing commands.

Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Cycle the power to (switch **OFF 4 seconds** and then **ON 4 seconds**) the device's circuit **six times**.

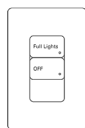
This removes pairing for ALL devices of this type on the affected circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.

Default WaveLinX W-Series Wallstation Operation

W1L-x
(* = W,V,G,B)

W1L-x

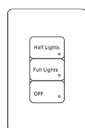
- Button #1: Toggle Scene (Scene 0/Scene 1)



W2L-x
(* = W,V,G,B)

W2L-x

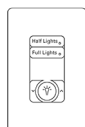
- Button #1: Scene 1
- Button #2: Scene 0



W3L-x
(* = W,V,G,B)

W3L-x

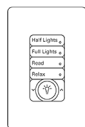
- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 0



W2S-RL-x
(* = W,V,G,B)

W2S-RL-x

- Button #1: Scene 3
- Button #2: Scene 1
- ON/OFF: Toggle Scene (Scene 0/Scene 1)
- Raise/Lower: Raise/Lower All Zones in Current Area¹³¹



W4S-RL-x
(* = W,V,G,B)

W4S-RL-x

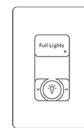
- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 2
- Button #4: Scene 4
- ON/OFF: Toggle Scene (Scene 0/Scene 1)
- Raise/Lower: Raise/Lower All Zones in Current Area¹³¹



W6S-x
(* = W,V,G,B)

W6S-x

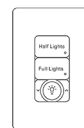
- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 2
- Button #4: Scene 4
- Button #5: Scene 5
- Button #6: Scene 0



W1L-RL-x
(* = W,V,G,B)

W1L-RL-x

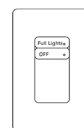
- Button # 1: Scene 3
- ON/OFF: Toggle Scene (Scene 0/Scene 1)
- Raise/Lower: Raise/Lower All Zones in Current Area¹³¹



W2L-RL-x
(* = W,V,G,B)

W2L-RL-x

- Button #1: Scene 3
- Button #2: Scene 1
- ON/OFF: Toggle Scene (Scene 0/Scene 1)
- Raise/Lower: Raise/Lower All Zones in Current Area¹³¹



W2S-x
(* = W,V,G,B)

W2S-x

- Button #1: Scene 1
- Button #2: Scene 0



W4S-x
(* = W,V,G,B)

W4S-x

- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 4
- Button #4: Scene 0



W5S-x
(* = W,V,G,B)

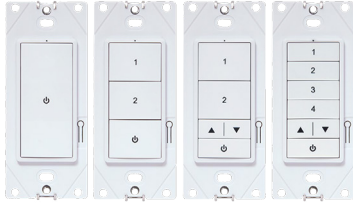
W5S-x

- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 2
- Button #4: Scene 4
- Button #5: Scene 0

¹³¹ White tuning zones are automatically exempted from raise/lower ALL zones to prevent inadvertent adjustment of the color temperature when adjusting light levels.

WaveLinX PRO WW-Series Wallstation Reference Sheet

WaveLinX PRO WW-Series Wallstation



Features

- Multi-scene selection, raise/lower, and toggle ON/OFF control
- Single or multi-gang mounting
- IEEE 802.15.4, (router and end point)

Power:

- Line voltage powered 120-277VAC (neutral required)

Typical Applications

- Education, office, and other interior spaces

Models:

- **WW1:** 1 Button
- **WW3:** 3 Button
- **WW3-RL:** 3 Button with Raise/Lower
- **WW5-RL:** 5 Button with Raise/Lower

WaveLinX App Details:

- Default Device Name:
 - WaveLinX Pro-1 Btn Wallstation (WW1)
 - WaveLinX Pro-3 Btn Wallstation (WW3)
 - WaveLinX Pro-3 Btn R/L Wallstation (WW3-RL)
 - WaveLinX Pro-5 Btn R/L Wallstation (WW5-RL)
- Unassigned Device Category:
 - Wallstation

Icon Displayed in WaveLinX App:



Programmable options:

- Scene Selection
- Scene Toggle
- Save Scene
- Zone Toggle
- Zone Level
- Raise
- Lower
- Hold/Release Occupied
- Wall Status Toggle¹³²
- No Action
- Network Action from WaveLinX CORE¹³³

Use the WaveLinX PRO WW-Series Wallstations to manually operate connected loads and provide customized light levels for each controlled space.

Out-of-the-Box Operation

- Once power is applied, if a button is pressed, the wallstation LED will flash green slowly for 10 seconds.
- The WaveLinX WW-Series Wallstation will have no control functionality out-of-the-box.

Construction Area Default Operation

Once paired, the device operates as part of the Construction area.

- The wallstation LED will flash yellow for 1 sec and then OFF for 1 sec repeatedly.
- If a button is pressed, the wallstation LED will flash magenta slowly for 15 seconds and then go back to flashing yellow.

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- The wallstation LED will be OFF.
- If a button is pressed, the wallstation LED will flash white slowly for 10 seconds.

- All WaveLinX wallstations will operate all lighting devices and WaveLinX receptacles in the area per the default scenes and programming (see chart next page).

LED Behavior

The LED is located above the top button of the wallstation.

LED conditions	Meaning
Flashes green for 300ms/OFF for 1.7 sec. Repeats for 10 sec.	One of the wallstation buttons was pressed. This pattern means that the wallstation is not yet paired with a WaveLinX Area Controller.
Flashes slow yellow for 1 sec./off for 1 sec. Repeats indefinitely.	The wallstation is paired with a WaveLinX Area Controller and is in the Construction Area. ¹³⁴
Flashes white for 300ms/OFF for 1.7 sec. Repeats for 10 sec.	One of the wallstation buttons was pressed. This pattern means that the wallstation is paired with a WaveLinX Area Controller and is assigned to a user created area.
Flashes white for 1sec./OFF for 1 sec. Repeats for 10 sec.	The wallstation has been disabled by a timed event or has been manually disabled using the WaveLinX App.
Flashes magenta for 1 sec./OFF for 1 sec. Repeats for 15 sec. and then resumes previous LED state.	The wallstation is paired and in the Construction Area. One of the wallstation buttons was pressed. The wallstation has triggered an identify command to allow for identification in the WaveLinX App. OR The wallstation (in any area) has been placed in Blink to Identify mode from the WaveLinX App.
Flashes magenta for 1 sec./OFF for 1 sec. Repeats for up to 60 minutes.	The wallstation has previously been paired, is in the Construction Area, and the WaveLinX Area Controller it is paired with has been placed into pairing mode. The LED will resume its previous state when the WaveLinX Area Controller exits pairing mode.
Flashes green for 300ms/white for 300ms/ OFF for 1.4 sec. Repeats for 10 sec.	One of the wallstation buttons was pressed. This pattern means that the wallstation was paired with a WaveLinX Area Controller but is no longer communicating with it.
Flashes cyan for 1 sec./OFF for 1 sec. Repeats for a period.	The wallstation firmware is being updated. The cyan flashing pattern will end once the update is complete.
Flashes fast yellow 500ms/OFF 500ms (factory reset used)	The factory reset button on the wallstation has been pressed for 5-10 seconds. The LED will stop flashing when the button is released OR at the 10 second mark if the button is held longer.



How to Place in Pairing Mode:

Method	Description
Press button (Preferred Method)	Press any button on the wallstation to initiate a pairing request from an unpaired wallstation. The LED on the wallstation should flash green for approximately 10 seconds.
Power Cycle Method	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON.

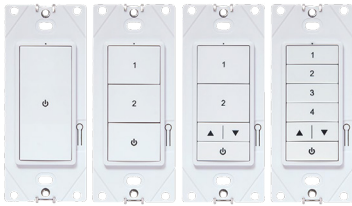
The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.

¹³² **Wall Status Toggle** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher. This option is for use with Partitioned Areas.

¹³³ **Network Action** will only show in WAC2 (Gen 2) version 10.0.x.x firmware and higher. WAC must be a configured part of a WaveLinX CORE platform to perform supported network actions.

¹³⁴ Devices in user defined areas may also exhibit this LED behavior if manually placed in commissioning mode through the advanced user WAC Webpage (advanced technicians only).

WaveLinX PRO WW-Series Wallstation continued



Successful Paired Device Behavior:


Once successfully paired, the LED will flash yellow indicating that the wallstation has been added to the Construction Area and is in commissioning mode. The LED will continue to flash yellow until the wallstation is assigned to an area other than the Construction Area.

After the initial pairing is completed, if the wallstation is in the Construction Area and the WAC is placed in pairing mode, the LED will flash magenta until the WAC exits pairing mode.

Supported Identification Methods:

- **Button Press:** If the wallstation is in the Construction Area, press any button on the wallstation. The LED will flash magenta for 1 second and OFF for 1 second, repeating for 15 seconds. This will allow identification in the WaveLinX App.

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse, and a wallstation's LED should respond. When placed in **Blink to Identify** mode the wallstation LED will flash magenta for 1 second and then OFF for 1 second, repeating the pattern for a period of 15 seconds.

Loss of Communications Operation

If communication is lost with WaveLinX Area Controller, the wallstation will not control the assigned loads until communications are re-established. If a button with is pressed, the wallstation LED will flash Green for 300ms/White for 300ms/OFF for 1.4 seconds and repeat this pattern for 10 seconds to indicate its offline status.

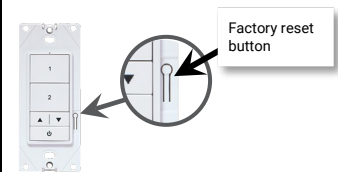
Operation upon Return of Power

Upon return of power and connection to the WaveLinX Area Controller, the wallstation will wait for a button press before issuing commands. The LED behavior will resume its normal operation based on the wallstation's paired or unpaired state, and, if paired, the area it has been assigned to (Construction Area or a created area).

Factory Reset Instructions

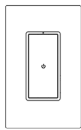
CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

Method	Description
Factory reset button (Preferred Method)	<ul style="list-style-type: none"> • Remove the wallplate to expose the factory reset button. • Press and hold the factory reset button for at least 5 and not more than 10 seconds and then release it. (The wallstation LED will begin to flash yellow after 5 seconds and stop at 10 seconds.¹³⁵)
Power Cycle Method	<ul style="list-style-type: none"> • Cycle the power to (switch OFF 4 seconds and then ON 4 seconds) the device's circuit six times. This removes pairing for ALL devices of this type on the affected circuit.




After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.

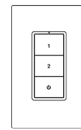
Default WaveLinX WW-Series Wallstation Operation



WW1-W


WW1-x

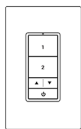
- Button : Toggle Scene (Scene 0/Scene1)



WW3-W


WW3-x

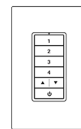
- Button #1: Scene 3
- Button #2: Scene 1
- Button : Scene 0 (OFF)



WW3-RL-W


WW3-RL-x

- Button #1: Scene 3
- Button #2: Scene 1
- Raise/Lower: Raise/Lower All Zones in Current Area¹³⁶
- Button : Toggle Scene (Scene 0/Scene 1)



WW5-RL-W

WW5-RL-x

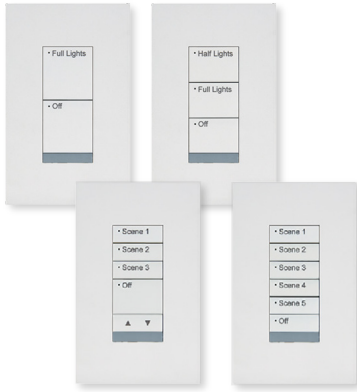
- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 2
- Button #4: Scene 4
- Raise/Lower: Raise/Lower All Zones in Current Area¹³⁶
- Button : Toggle Scene (Scene 0/Scene 1)

¹³⁵ If the factory reset button is held for less than 5 seconds or more than 10 seconds, the wallstation will not perform the factory reset and will retain its programmed settings.

¹³⁶ White tuning zones are automatically exempted from raise/lower ALL zones to prevent inadvertent adjustment of the color temperature when adjusting light levels.

WaveLinx PRO WB-Series Battery Powered Wallstation Reference Sheet

WaveLinx PRO WB-Series Battery Powered Wallstation



Features

- Multi-scene selection, raise/lower, and toggle ON/OFF control
- Single or multi-gang mounting
- IEEE 802.15.4, (router and end point)

Power:

- 4-AAA Alkaline replaceable batteries
- 10-year life expectancy

Typical Applications

- Education, office, and other interior spaces

Models:

- Large Button Configurations:
 - WB2L, WB3L
- Mixed Button Configuration:
 - WB5
- Small Button Configuration:
 - WB6

WaveLinx App Details:

- Default Device Name:
 - Battery Powered Wall Station
- Unassigned Device Category:
 - Wallstation

Icon Displayed in WaveLinx App:



Programmable options:

- Scene Selection
- Scene Toggle
- Save Scene
- Zone Toggle
- Zone Level
- Raise
- Lower
- Hold/Release Occupied
- Wall Status Toggle¹³⁷
- No Action
- Network Action from WaveLinx CORE¹³⁸

Use the WaveLinx PRO WB-Series Battery Powered Wallstations to manually operate connected loads and provide customized light levels for each controlled space. WB-Series Battery Powered Wallstations simplify new and retrofit installations.

Out-of-the-Box Operation

- Once power is applied, All LEDs will be OFF as the station is in **sleep mode** to conserve battery life. A red LED below the bottom button may flash if a finger is within 2 inches (5 cm) of the buttons or a button is pressed, triggering the proximity sensor to **wake** the station and request an updated LED status. The button LEDs should remain OFF until the station is paired with the WaveLinx Area Controller.
- The wallstation will have no control functionality out-of-the-box.

Construction Area Default Operation

Once paired, the device operates as part of the Construction area.

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- All WaveLinx wallstations will operate all lighting devices and WaveLinx receptacles in the area per the default scenes and programming (see chart next page).
- The button LED will illuminate briefly to indicate the active scene when woken from **sleep mode**.

Button LED Operation

LED conditions	Meaning
Button LED ON when hand is near wallstation	The button's command is currently active.
Button LED OFF	Battery wallstations automatically enter sleep mode turning LEDs OFF. If the red LED below the bottom button flashes but the LEDs remain OFF when a hand is near, the button's command is not active or is not programmed. If there are no button LEDs and the red LED below the bottom button does not flash when a hand is near, verify the batteries are charged.
Red LED below the bottom button flashes once (when hand is near wallstation)	The proximity sensor has woken the station from sleep mode and requested button LED status from its paired WaveLinx Area Controller. <ul style="list-style-type: none"> • If the button command is not currently active, the red LED will flash but no button LEDs will illuminate. • If button command is currently active, the red LED may not flash but the button LED(s) will illuminate.
Red LED below the bottom button flashes twice (when hand is near wallstation)	The proximity sensor has woken the station from sleep mode and requested button LED status, but the station is not paired with a WaveLinx Area Controller.
Red LED below bottom button: <ul style="list-style-type: none"> • flashes twice • then flashes 10 times 	A button has been pressed on a station that has not yet been paired with a WaveLinx Area Controller and the WaveLinx Area Controller is not in pairing mode. This sequence also occurs if the device has just been Factory Reset.
Red LED below bottom button <ul style="list-style-type: none"> • flashes twice • then flashes several times (up to 10) • followed by two slow flashes. 	A button has been pressed on a station that has not yet been paired with a WaveLinx Area Controller and the WaveLinx Area Controller is in pairing mode. The button press places the station in pairing mode. The two slow flashes at the end indicate that communication with the WaveLinx Area Controller as the device makes the pairing connection.

How to Place in Pairing Mode:

Pair line powered devices first as they support communications to the battery powered devices. If no line powered devices are paired, the WaveLinx Area Controller will only allow six battery powered devices to pair.

Method	Description
Press button	Press any button on the wallstation to initiate a pairing request from an unpaired wallstation. The red LED below the bottom button may flash when the proximity sensor detects a hand near the device and may flash intermittently during the pairing process.

¹³⁷ Wall Status Toggle will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher. This option is for use with Partitioned Areas.

¹³⁸ Network Action will only show in WAC2 (Gen 2) version 10.0.x.x firmware and higher. WAC must be a configured part of a WaveLinx CORE platform to perform supported network actions.

WaveLinx PRO WB-Series Battery Powered Wallstation continued



Successful Paired Device Behavior:

There may not be immediate feedback that the device paired successfully.¹³⁹ If paired, the device will be visible in the WaveLinx App. To verify that the device paired successfully, **make sure the WaveLinx Area Controller is not in pairing mode**. Press one of the wallstation buttons and verify that the paired lights and WaveLinx receptacles still in the Construction Area respond to the commands.

Supported Identification Methods:

- **Button Press:** Press any button on the wallstation to identify the device in the Construction Area. The red LED below the bottom button for approximately 3 seconds.

Battery powered devices do not support **Blink to Identify** mode.

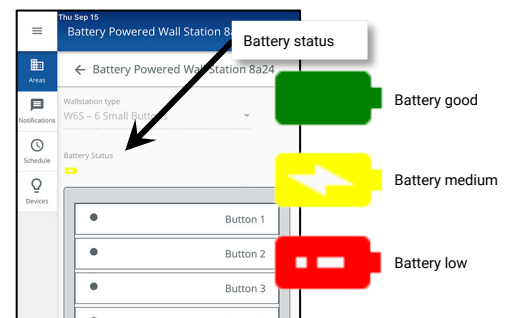
Battery Charge Indicator

The WaveLinx App will give an indication of the current charge of the batteries in the wallstation within the wallstation page.

- Battery good: >2.6V
- Battery medium: <= 2.6V – 2.4V
- Battery low: <2.4V

Operation upon Battery Change

Upon battery change, after the device automatically reconnects to the WaveLinx Area Controller, the device will operate with the last programmed settings when a button is pressed (device retains programming in unpowered state).



Loss of Communications Operation

If communication is lost with WaveLinx Area Controller, the wallstation will not control the assigned loads until communications are re-established. The red LED below the bottom button may illuminate for about 3 seconds if a button is pressed as the station tries to communicate with the WaveLinx Area Controller.

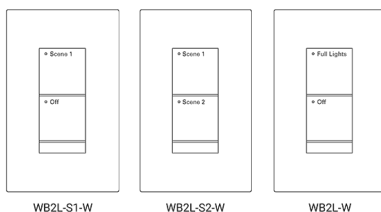
Factory Reset Instructions

CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Remove the battery assembly for exactly 5 seconds then replace.
- Once the red LED below the bottom button illuminates, immediately press any button ten times at 1 second intervals (the red LED may flash when button is pressed).
- Wait a few seconds and then press any button one time. The red LED below the bottom button should flash slowly 2 times and then flash an additional 10 times to indicate that the reset was successful.

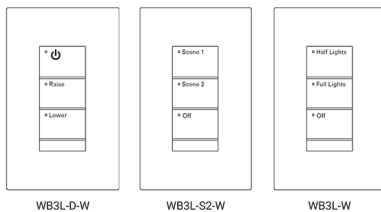
The device may be paired as a new device.

Default WB-Series Battery Powered Wallstation Operation



WB2L-x

- Button #1: Scene 1
- Button #2: Scene 0



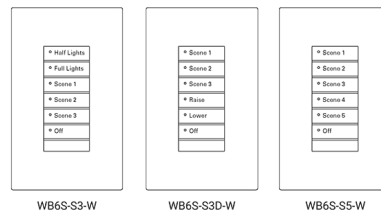
WB3L-x

- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 0



WB5-S3-W

- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 2
- Button #4: Toggle Scene (Scene 0/Scene 1)
- Raise/Lower: Raise/Lower All Zones in Current Area¹⁴⁰



WB6S-x

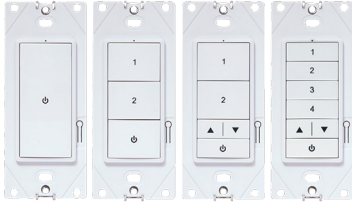
- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 2
- Button #4: Scene 4
- Button #5: Scene 5
- Button #6: Scene 0

¹³⁹ The LED may flash slowly two times (3 seconds ON, 3 seconds OFF) as the device pairs with the WaveLinx Area Controller.

¹⁴⁰ White tuning zones are automatically exempted from raise/lower ALL zones to prevent inadvertent adjustment of the color temperature when adjusting light levels.

WaveLinX PRO WWB-Series Battery Powered Wallstation Reference Sheet

WaveLinX PRO WWB-Series Battery Powered Wallstation



Features

- Multi-scene selection, raise/lower, and toggle ON/OFF control
- Single or multi-gang mounting
- IEEE 802.15.4, (router and end point)

Power:

- 2-CR123A Alkaline replaceable batteries

Typical Applications

- Education, office, and other interior spaces

Models:

- **WWB1:** 1 Button
- **WWB3:** 3 Button
- **WWB3-RL:** 3 Button with Raise/Lower
- **WWB5-RL:** 5 Button with Raise/Lower

WaveLinX App Details:

- Default Device Name:
 - BP Pro WS 1 Btn (WWB1)
 - BP Pro WS 3 Btn (WWB3)
 - BP Pro WS 3 Btn RL (WWB3-RL)
 - BP Pro WS 5Btn RL (WWB5-RL)
- Unassigned Device Category:
 - Wallstation

Icon Displayed in WaveLinX App:



Programmable options:

- Scene Selection
- Scene Toggle
- Save Scene
- Zone Toggle
- Zone Level
- Raise
- Lower
- Hold/Release Occupied
- Wall Status Toggle¹⁴¹
- No Action
- Network Action from WaveLinX CORE¹⁴²

Use WaveLinX PRO WWB-Series Battery Powered Wallstations to manually operate connected loads and provide customized light levels for each controlled space. WWB-Series Battery Powered Wallstations simplify new and retrofit installations.

Out-of-the-Box Operation

- Once power is applied, if a button is pressed, the wallstation LED will flash green slowly for 10 seconds.
- The WaveLinX WWB-Series Battery Powered Wallstation will have no control functionality out-of-the-box.

Construction Area Default Operation

Once paired, the device operates as part of the Construction area.

- If a button is pressed, the wallstation LED will flash white once, then flash magenta slowly for 15 seconds, and then turn OFF.

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- If a button is pressed, the wallstation LED will flash white. The flash may occur once or repeat up to 5 times.

- All WaveLinX wallstations will operate all lighting devices and WaveLinX receptacles in the area per the default scenes and programming (see chart next page).

LED Behavior

The LED is located above the top button of the wallstation.

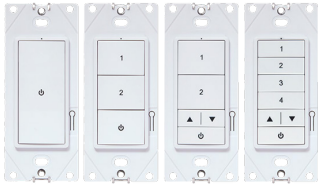
LED conditions	Meaning
Flashes: <ul style="list-style-type: none"> • green for 300ms • [COLOR2] for 300ms • OFF for 1.4 sec. Repeats for 10 sec.	One of the wallstation buttons was pressed. This pattern means that the wallstation is not yet paired with a WaveLinX Area Controller. <ul style="list-style-type: none"> • [COLOR2] OFF/No secondary color: Battery OK (>2.7V) • [COLOR2] Yellow = Battery Low (2.5V-2.7V) • [COLOR2] Red = Battery Very Low (<2.5V)
Turns white and then flashes: <ul style="list-style-type: none"> • magenta for 700ms • [COLOR2] for 300ms • OFF for 1 sec. Repeats for 15 sec.	The wallstation is paired and in the Construction Area. One of the wallstation buttons was pressed. The wallstation has triggered an identify command to allow for identification in the WaveLinX App. <ul style="list-style-type: none"> • [COLOR2] OFF/No secondary color: Battery OK (>2.7V) • [COLOR2] Yellow = Battery Low (2.5V-2.7V) • [COLOR2] Red = Battery Very Low (<2.5V)
Flashes: <ul style="list-style-type: none"> • white for 300ms • [COLOR2] for 300ms • OFF for 1.4 sec. The pattern may occur once or repeat up to 5 times.	One of the wallstation buttons was pressed. This pattern means that the wallstation is paired with a WaveLinX Area Controller and is assigned to a user created area. <ul style="list-style-type: none"> • [COLOR2] OFF/No secondary color: Battery OK (>2.7V) • [COLOR2] Yellow = Battery Low (2.5V-2.7V) • [COLOR2] Red = Battery Very Low (<2.5V)
Flashes: <ul style="list-style-type: none"> • white for 1 sec. • [COLOR2] for 300ms • OFF for 700ms. Repeats for 10 sec.	One of the wallstation buttons was pressed but the wallstation has been disabled by a timed event or manually using the WaveLinX App. <ul style="list-style-type: none"> • [COLOR2] OFF/No secondary color: Battery OK (>2.7V) • [COLOR2] Yellow = Battery Low (2.5V-2.7V) • [COLOR2] Red = Battery Very Low (<2.5V)
Flashes: <ul style="list-style-type: none"> • green for 300ms • [COLOR2] for 300ms • OFF for 1.4 sec. Repeats for 10 sec.	One of the wallstation buttons was pressed. This pattern means that the wallstation was paired with a WaveLinX Area Controller but is no longer communicating with it. <ul style="list-style-type: none"> • [COLOR2] White: Battery OK (>2.7V) • [COLOR2] Yellow = Battery Low (2.5V-2.7V) • [COLOR2] Red = Battery Very Low (<2.5V)
Flashes: <ul style="list-style-type: none"> • cyan for 700ms • [COLOR2] for 300ms • OFF for 1 sec. Repeats for a period.	The wallstation firmware is being updated. The cyan flashing pattern will end once the update is complete. <ul style="list-style-type: none"> • [COLOR2] OFF/No secondary color: Battery OK (>2.7V) • [COLOR2] Yellow = Battery Low (2.5V-2.7V) • [COLOR2] Red = Battery Very Low (<2.5V)
Flashes fast yellow 500ms/OFF 500ms (factory reset used)	The factory reset button on the wallstation has been pressed for 5-10 seconds. The LED will stop flashing when the button is released OR at the 10 second mark if the button is held longer.



¹⁴¹ Wall Status Toggle will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher. This option is for use with Partitioned Areas.

¹⁴² Network Action will only show in WAC2 (Gen 2) version 10.0.x.x firmware and higher. WAC must be a configured part of a WaveLinX CORE platform to perform supported network actions.

WaveLinx PRO WWB-Series Battery Powered Wallstation continued



How to Place in Pairing Mode:

Pair line powered devices first as they support communications to the battery powered devices. If no line powered devices are paired, the WaveLinx Area Controller will only allow six battery powered devices to pair.

Method	Description
Press button (Preferred Method)	Press any button on the wallstation to initiate a pairing request from an unpaired wallstation. The LED on the wallstation should flash green for approximately 10 seconds.

Successful Paired Device Behavior:

Press any button on the wallstation to verify pairing. If the wallstation is paired, the wallstation LED should blink white and then flash magenta for approximately 15 seconds to indicate that the wallstation is paired and is assigned to the Construction Area. Any WaveLinx lighting devices or receptacles paired and in the Construction Area will respond to the button command.

Supported Identification Methods:

- **Button Press:** If the wallstation is in the Construction Area, press any button on the wallstation. The LED will flash white briefly and then flash magenta for 1 second and OFF for 1 second, repeating for 15 seconds. This will allow identification in the WaveLinx App.

Battery powered devices do not support Blink to Identify mode

Battery Charge Indicator

The wallstation LED as well as the WaveLinx App will give indication of the current charge of the wallstation's batteries.

Wallstation LED Battery Indicator

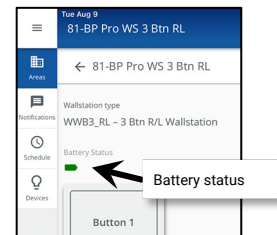
When a button on the wallstation is pressed, the LED will flash an initial color dependent on whether it is paired with a WaveLinx Area Controller and if it is still assigned to the Construction Area. If the initial color is followed by a 2nd color, the 2nd color indicates the battery status

- OFF (No 2nd color): Battery OK (>2.7V)
- Yellow = Battery Low (2.5V-2.7V)
- Red = Battery Very Low (<2.5V).

WaveLinx App Battery Indicator

The WaveLinx App's wallstation page will show the status of the battery through a colored battery icon.

	Green = Battery good: >2.7V
	Yellow = Battery medium: 2.5V-2.7V
	Red = Battery low: <2.5V



Operation upon Battery Change

After battery change, once the device automatically reconnects to the WaveLinx Area Controller, the device will operate with the last programmed settings when a button is pressed (device retains programming in unpowered state).

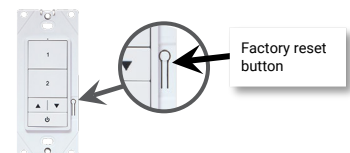
Loss of Communications Operation

If communication is lost with WaveLinx Area Controller, the wallstation will not control the assigned loads until communications are re-established. If a button is pressed, the wallstation LED will flash Green for 300ms/White for 300ms/OFF for 1.4 seconds and repeat this pattern for 10 seconds to indicate its offline status.

Factory Reset Instructions

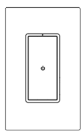
CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

Method	Description
Factory reset button	<ul style="list-style-type: none"> • Remove the wallplate to expose the factory reset button. • Press and hold the factory reset button for at least 5 and not more than 10 seconds and then release it. (The wallstation LED will begin to flash yellow after 5 seconds and stop at 10 seconds.¹⁴³)



After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.

Default WaveLinx WWB-Series Wallstation Operation



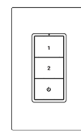
WWB1-x

- Button : Toggle Scene (Scene 0/Scene1)



WWB3-RL-x

- Button #1: Scene 3
- Button #2: Scene 1
- Raise/Lower: Raise/Lower All Zones in Current Area¹⁴⁴
- Button : Toggle Scene (Scene 0/Scene 1)



WWB3-x

- Button #1: Scene 3
- Button #2: Scene 1
- Button : Scene 0 (OFF)



WWB5-RL-x

- Button #1: Scene 3
- Button #2: Scene 1
- Button #3: Scene 2
- Button #4: Scene 4
- Raise/Lower: Raise/Lower All Zones in Current Area¹⁴⁴
- Button : Toggle Scene (Scene 0/Scene 1)

¹⁴³ If the factory reset button is held for less than 5 seconds or more than 10 seconds, the wallstation will not perform the factory reset and will retain its programmed settings.

¹⁴⁴ White tuning zones are automatically exempted from raise/lower ALL zones to prevent inadvertent adjustment of the color temperature when adjusting light levels.

WaveLinx PRO IR Remote Reference Sheet

WaveLinx PRO IR Remote ACC-P-RT



Typical Applications

- Use to simplify setup when pairing and identifying devices in the system.
- Use to quickly adjust sensors for:
 - Occupancy sensor sensitivity
 - Daylight response adjustment
- Use to quickly test:
 - Individual occupancy sensor function
 - Daylight response
 - Fixture functionality
- Use to factory reset devices in certain circumstances
- Use to set specific devices as Point Guards in a zone containing large quantities of devices

Models:

ACC-P-RT: WaveLinx PRO IR Remote

WaveLinx App Details:

- Not Applicable. Device is not displayed in the WaveLinx App.

Icon Displayed in WaveLinx App:

- Not Applicable. Device is not displayed in the WaveLinx App.

The WaveLinx PRO IR Remote streamlines the processes that installers or set-up technicians use to test device functionality, test daylight or occupancy sensor function, enable or disable pairing mode, reverse identify devices to find them in the WaveLinx App, enable or disable closed loop daylighting, adjust daylight light levels and occupancy sensor sensitivity, factory reset specific devices, and perform the advanced functionality of assigning point guards for larger zone applications.













Refer to the device reference sheet to determine if the device supports the use of the ACC-P-RT IR Remote.

WaveLinx PRO IR Remote Overview

For further details, please refer to the **WaveLinx PRO IR Remote User Guide** for a list of supported devices and specific instructions on using the remote.



ACC-P-RT

Button	Description
 Pair  Disable Pair	<p>If a device is not currently paired with a WaveLinx Area Controller, Pair places the device into pairing mode to search for a WaveLinx Area Controller.</p> <p>If a device is in pairing mode, Disable Pair deactivates pairing mode and prevents the device from continuing to search for a WaveLinx Area Controller.</p>
 Rev ID	<p>If a device is already paired with a WaveLinx Area Controller, Rev ID will cause the device to identify itself in the WaveLinx App.</p>
 PG	<p>For advanced set-up technicians programming zones with many devices, PG will allow up to 5 devices to be set as Point Guards to streamline communications.</p>
 LO  HI	<p>Adjust the occupancy sensor sensitivity at the press of a button.</p> <ul style="list-style-type: none"> • LO places the selected occupancy sensor into low sensitivity mode to assist with preventing false triggers from activity outside the desired area. • HI places the selected occupancy sensor into high sensitivity mode to assist with capturing motion activity further from the sensor.
 Occ Test	<p>Occ Test places the selected sensor into test mode to allow for validation of individual sensor occupancy detection.</p>
 OLDL Test	<p>If the sensor is assigned to perform open loop daylighting, OLDL Test will trigger the WaveLinx Area Controller to enter test mode during with, daylight transitions are accelerated to allow for daylight function verification.</p>
 CLDL On/Off	<p>For sensors not associated with an open loop daylight set, CLDL On/Off will enable or disable the sensor's closed loop daylight function.</p>
 DL Raise  DL Lower	<p>Adjust the daylight dimming response of the selected open loop or closed loop daylight sensor.</p> <ul style="list-style-type: none"> • Closed loop daylight sensors: Raise or lower the desired light level in 5% increments. • Open loop daylight sensors: Raise the light level (lower the sensitivity of the dimming response to the incoming daylight) or lower the light level (raise the sensitivity of the dimming response to the incoming daylight) in 5% increments.
 ID TEST	<ul style="list-style-type: none"> • ID TEST allows for a quick visual check of functionality from the sensor to the fixture's LED array by causing the light to cycle ON/OFF for 15 seconds regardless of paired state and programming. • ID TEST can be used to reset a sensor back to factory defaults without the need to power cycle.

WaveLinx CAT Dimming Switchpack Reference Sheet

WaveLinx CAT Dimming Switchpack



General Features

- Input voltage: 120V-277V
- Output:
 - Switched, latching relay: 20A, 277V (resistive LED and non LED loads)
 - 0-10VDC dimming sink current, 30mA
 - Provides power to the CAT bus:
 - Class 2, 24VDC, 350mA up to approx. 40 CAT devices

Special Features

- Isolated Form C relay
 - 1A, 30V AC/DC
- White Tuning Control for Cooper Lighting Solutions VividTune fixtures

Typical Applications

- Office, education, and other indoor applications

Models:

- **RSP-C-010-Z1:** WaveLinx CAT RSP-C Relay Switchpack - Zone 1

WaveLinx App Details:

Connection to a WaveLinx Area Hub required to communicate with the WaveLinx Area Controller/WaveLinx Mobile App

- Default Device Name:
 - Relay SwitchPack C
- Unassigned Device Category:
 - Relay Switchpack

Icon Displayed in WaveLinx App:



Use the WaveLinx CAT Dimming Switchpack to switch (on/off) loads via an internal 20 amp latching relay and dim loads using continuous 0-10V dimming control. The WaveLinx CAT Dimming Switchpack also provides Class 2 24VDC power to the CAT devices on the connected CAT bus.

WaveLinx CAT Distributed and Network Modes

WaveLinx CAT devices connect to CAT buses that can operate independently or may be connected to an Area Hub to operate as part of a system.

- **Distributed Mode:** The WaveLinx CAT devices connected to the same WaveLinx CAT bus operate together and control based on their out-of-the-box default settings or settings programmed using a WaveLinx CAT Bluetooth Programming Interface Module and the WaveLinx CAT Mobile App.
- **Networked Mode:** The WaveLinx CAT devices are connected to an Area Hub, are added to a WaveLinx Area Controller, and operate from the commands configured in the WaveLinx Area Controller. CAT devices can respond to or issue commands from/to other devices configured in the WaveLinx Area Controller.

Out-of-the-Box Operation

Out-of-the-box when power is first applied, the WaveLinx CAT Dimming Switchpack will be ON (closed) and the 0-10V level set to 75% light output. After this point, the WaveLinx CAT Dimming Switchpack will operate in **Distributed Mode** until the connected Area Hub is discovered and the CAT devices are added to the WaveLinx Area Controller.

In **Distributed Mode**, all CAT devices connected to the same CAT bus work together as an Area with the following programming¹⁴⁵:

- The CAT Dimming Switchpack will function in default Zone 1
- CAT Ceiling Sensors and Sensors connected to CAT Sensor Interface Modules will turn ON all Zones at 50% occupancy and apply a 20-minute hold time. Zones will turn OFF after the hold time expires
- Wallstation buttons will issue commands per their default configuration
- Contact Closure Module inputs have the following configuration: 1. *Alert mode*, 2. *Demand Response (DR) reduction to 20%*, 3. *Not configured*, 4. *Not Configured*

NOTE: If being used for white tuning, white tuning output may have unexpected operation in **Distributed Mode**.

Distributed Mode default configuration for the CAT Contact Closure Module and CAT Sensor Input Module will be overwritten by the Networked Mode programmed settings.

Discovery/Added to WaveLinx Area Controller

Once the WaveLinx Area Hub has been discovered and added along with its connected devices to a WaveLinx Area Controller, the WaveLinx CAT Dimming Switchpack will be added to an area along with all the devices attached to the same CAT bus. The initial programming will be imported from the devices during the discovery/add process. From this point, the devices will then operate in **Networked Mode** with programming maintained for the device in the WaveLinx Area Controller.

LED Operation

LED conditions	Meaning
ON Blue	The device is operating in Distributed Mode and the Relay is ON.
ON White	The device is operating in Networked Mode and the Relay is ON.
OFF	The device relay is OFF (opened) or not powered.
Flashes magenta 1s/OFF 1s. Repeats for identify duration.	The device has been placed in Blink to Identify mode from the Area Hub Identify button, the Area Hub web interface, or from the WaveLinx Mobile App.
Flashes cyan 1s/OFF 1s. Repeats for update duration.	The device firmware is being updated.
Solid green	The device is in bootloader mode (image is being swapped). The LED will return to normal operation once the image swap is complete.
Flashes yellow for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 5 and 10 seconds and the device is in the process of a factory reset.
Flashes blue for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 1 and 5 seconds and the Area Hub is in the process of a soft reset.
ALL LEDs turn OFF with reset button press	The reset button has been pressed for less than 1 second or greater than 10 seconds. No reset occurs.

¹⁴⁵ While in Distributed Mode, device programming can be changed from defaults to other behavior using the WaveLinx CAT Bluetooth Programming Interface Module and the WaveLinx CAT Mobile App.

WaveLinx CAT Dimming Switchpack continued

**Dimming Switchpack Pushbutton Functions**

The Dimming Switchpack has a pushbutton that allows for device reset.


Dimming Switchpack



LED and Button

Function	Press Length	LED feedback	Device outcome
Soft Reset/Reboot	Press and hold for 2 seconds recommended until LED flashes blue (>=1 sec. to <5 sec.)	LED will flash blue 500ms/ OFF 500ms and repeats for a short period	Soft reset begins. Device restarts without interruption
Factory Reset	Press and hold for 6 seconds recommended until LED flashes yellow (>=5 sec. to <10 sec.)	LED will flash yellow 500ms/ OFF 500ms and repeats for a short period	Factory reset begins for the Distributed Mode device settings. If the device is still programmed and communicating to a WaveLinx Area Controller, after the reset completes, it will continue to operate in Networked Mode with the settings programmed in the WaveLinx Area Controller (no change in operation).

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select the  icon in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a device matching that type should respond for 15 seconds with the described behavior.

Use the Area Hub onboard buttons or web interface to place the Area Hub or a specific CAT bus port in **Blink to Identify** mode. The devices on the CAT bus(es) selected will respond with the described behavior for 1 minute.

Connected for Lighting Control	Connected for White Tuning Control
<ul style="list-style-type: none"> When placed in Blink to Identify mode, the connected fixture(s) will turn ON for 1 second, turn OFF for 1 second and repeat for the identify duration. The device LED will flash magenta for the identify duration. 	<ul style="list-style-type: none"> When placed in Blink to Identify mode, the connected tunable white fixture(s) will cycle between cool and warm color temperatures and repeat for the identify duration. The device LED will flash magenta for the identify duration.

White Tuning Configuration Details

For proper white tuning control, the device must be configured for white tuning control and assigned to a white tuning zone.

- Create the dimming zone(s) needed for the area. (p. 134)
- Create the white tuning zone(s) needed for the area. (p. 134)
- Identify all devices controlling the ON/OFF and Intensity of the lighting in the room and assign them to the dimming zone(s). (p. 146)
- Configure the WaveLinx CAT Dimming Switchpack (p. 154):
 - Identify the switchpack controlling the color temperature and assign it to the **AREA**.
 - Edit the switchpack in the area, changing the type to white tuning and defining the color temperature range for the fixture.
 - Assign the white tuning switchpack to the white tuning zone.
- Add other devices to the area as needed and proceed with programming.

Loss of Communications Operation

If the connected Area Hub has not communicated with the WaveLinx Area Controller the devices connected to the CAT bus will begin **Distributed Mode** operation. The light level will remain until a command from an occupancy sensor or wallstation occurs. The devices will operate in **Distributed Mode** until communications are re-established after which **Networked Mode** operation will begin.

Operation upon Return of Power

Upon return of power, the device will resume its last known light level and operate in **Distributed Mode** until the Area Hub communications with the WaveLinx Area Controller are restored. Once communicating with the WaveLinx Area Controller, the device will begin normal operation in **Networked Mode**.

Factory Reset Instructions

Although the device contains an onboard button for factory reset, if the device is connected to a WaveLinx Area Hub/WaveLinx Area Controller, the device will continue to operate with the programming in the WaveLinx Area Controller after the factory reset is performed.

To factory reset the device AND remove programming from the WaveLinx Area Controller, use the Mobile Application to delete the device from the database. A device rescan command can then be performed on the WaveLinx Area Hub to add the device as a new device.

WaveLinX CAT Emergency Dimming Switchpack Reference Sheet

WaveLinX CAT Emergency Dimming Switchpack

**General Features**

- Input voltage:
 - 120V-277V
 - CAT bus power: 9.5 - 22.5 VDC supplied by communication bus connected to an RSP-C-010-Z1
- Output:
 - Switched, latching relay: 20A, 277V (resistive LED and non LED loads)
 - 0-10VDC dimming sink current, 30mA

Special Features

- UL924 Compliant
- Isolated Form C relay
 - 1A, 30V AC/DC

Typical Applications

- Office, education, and other indoor applications

Models:

- **ESP-C-010-Z1:** ESP-C Emergency Relay Switchpack - Zone 1

WaveLinX App Details:

Connection to a WaveLinX Area Hub required to communicate with the WaveLinX Area Controller/WaveLinX Mobile App

- Default Device Name:
 - EM Relay SwitchPack C
- Unassigned Device Category:
 - Relay Switchpack

Icon Displayed in WaveLinX App:

Use the WaveLinX CAT Emergency Dimming Switchpack to control luminaires powered from an emergency circuit. Switch (on/off) loads via an internal 20 amp latching relay and dim loads using continuous 0-10V dimming control. The WaveLinX CAT Emergency Dimming Switchpack is installed on a CAT bus along with standard WaveLinX CAT Dimming Switchpacks that control the normal powered lighting. The CAT Emergency Dimming Switchpack automatically overrides emergency fixtures to ON upon loss of normal power and communication with the WaveLinX CAT Dimming Switchpacks.

WaveLinX CAT Distributed and Network Modes

WaveLinX CAT devices connect to CAT buses that can operate independently or may be connected to an Area Hub to operate as part of a system.

- **Distributed Mode:** The WaveLinX CAT devices connected to the same WaveLinX CAT bus operate together and control based on their out-of-the-box default settings or settings programmed using a WaveLinX CAT Bluetooth Programming Interface Module and the WaveLinX CAT Mobile App.
- **Networked Mode:** The WaveLinX CAT devices are connected to an Area Hub, are added to a WaveLinX Area Controller, and operate from the commands configured in the WaveLinX Area Controller. CAT devices can respond to or issue commands from/to other devices configured in the WaveLinX Area Controller.

Out-of-the-Box Operation

Out-of-the-box when power is first applied, the WaveLinX CAT Emergency Dimming Switchpack will be ON (closed) and the 0-10V level set to 50% light output. After this point, the WaveLinX CAT Emergency Dimming Switchpack will operate in **Distributed Mode** until the connected Area Hub is discovered and the CAT devices are added to the WaveLinX Area Controller¹⁴⁶.

In **Distributed Mode:** The Emergency Dimming Switchpack will be in **Emergency Mode** with the load ON to 100%. The load will not respond to CAT device commands.

Discovery/Added to WaveLinX Area Controller

Once the WaveLinX Area Hub has been discovered and added along with its connected devices to a WaveLinX Area Controller, the WaveLinX CAT Emergency Dimming Switchpack will be added to an area along with all the devices attached to the same CAT bus. The initial programming will be imported from the devices during the discovery/add process. From this point, the devices will then operate in **Networked Mode** with programming maintained for the device in the WaveLinX Area Controller.

LED Operation

LED conditions	Meaning
ON Blue	The device is operating in Distributed Mode and the Relay is ON.
ON White	The device is operating in Networked Mode and the Relay is ON.
OFF	The device relay is OFF (opened) or not powered.
Flashes red 1s/OFF 1s. Repeats for emergency duration.	The device is in Emergency Power operation.
Flashes magenta 1s/OFF 1s. Repeats for identify duration.	The device has been placed in Blink to Identify mode from the Area Hub Identify button, the Area Hub web interface, or from the WaveLinX Mobile App.
Flashes cyan 1s/OFF 1s. Repeats for update duration.	The device firmware is being updated.
Solid green	The device is in bootloader mode (image is being swapped). The LED will return to normal operation once the image swap is complete.
Flashes yellow for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 5 and 10 seconds and the device is in the process of a factory reset.
Flashes blue for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 1 and 5 seconds and the Area Hub is in the process of a soft reset.
ALL LEDs turn OFF with reset button press	The reset button has been pressed for less than 1 second or greater than 10 seconds. No reset occurs.

¹⁴⁶ While in Distributed Mode, device programming can be changed from defaults to other behavior using the WaveLinX CAT Bluetooth Programming Interface Module and the WaveLinX CAT Mobile App.

WaveLinx CAT Emergency Dimming Switchpack continued

**Emergency Dimming Switchpack Pushbutton Functions**

The Emergency Dimming Switchpack has a pushbutton that allows for device reset.

Dimming Switchpack



LED and Button

Function	Press Length	LED feedback	Device outcome
Soft Reset/Reboot	Press and hold for 2 seconds recommended until LED flashes blue (>=1 sec. to <5 sec.)	LED will flash blue 500ms/ OFF 500ms and repeats for a short period	Soft reset begins. Device restarts without interruption
Factory Reset	Press and hold for 6 seconds recommended until LED flashes yellow (>=5 sec. to <10 sec.)	LED will flash yellow 500ms/ OFF 500ms and repeats for a short period	Factory reset begins for the Distributed Mode device settings. If the device is still programmed and communicating to a WaveLinx Area Controller, after the reset completes, it will continue to operate in Networked Mode with the settings programmed in the WaveLinx Area Controller (no change in operation).

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select the 📶 icon in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a device matching that type should respond for 15 seconds with the described behavior.

Use the Area Hub onboard buttons or web interface to place the Area Hub or a specific CAT bus port in **Blink to Identify** mode. The devices on the CAT bus(es) selected will respond with the described behavior for 1 minute.

Behavior:

- When placed in **Blink to Identify** mode, the connected fixture(s) will turn ON for 1 second, turn OFF for 1 second and repeat for the identify duration.
- The device LED will flash magenta for the identify duration.

Emergency Mode Operation

NOTE: For proper operation, one WaveLinx CAT Dimming Switchpack (non-emergency model) on the same CAT bus must be set to Power Sensing Mode to generate the Power Sensing signal that the WaveLinx CAT Emergency Dimming Switchpack(s) requires. Only one WaveLinx CAT Dimming Switchpack should provide the Power Sensing signal for all WaveLinx CAT Emergency Dimming Switchpacks on the same CAT bus.

If the WaveLinx CAT Dimming Switchpack(s) that is set up for communicating the normal Power Sensing signal loses power or communications with the WaveLinx CAT Emergency Dimming Switchpack, the Emergency Switchpack will activate Emergency Mode. During Emergency Mode, the Emergency Dimming Switchpack will turn the connected load ON to 100% and the onboard LED will flash red. Upon normal power return and the resumption of the Power Sensing signal, the Emergency Dimming Switchpack will revert to normal operation.

For information on setting devices to Power Sensing Mode, see "Step 7: Program Power Sensing Devices for Emergency Device Operation" on page 159.

Loss of Communications Operation

If the connected Area Hub has not communicated with the WaveLinx Area Controller the devices connected to the CAT bus will begin **Distributed Mode** operation. The devices will operate in **Distributed Mode** until communications are re-established after which **Networked Mode** operation will begin.

Operation upon Return of Power

Upon return of normal power, and restoration of the Area Hub communications with the WaveLinx Area Controller, the device will begin normal operation in **Networked Mode**.

Factory Reset Instructions

Although the device contains an onboard button for factory reset, if the device is connected to a WaveLinx Area Hub/WaveLinx Area Controller, the device will continue to operate with the programming in the WaveLinx Area Controller after the factory reset is performed.

To factory reset the device AND remove programming from the WaveLinx Area Controller, use the Mobile Application to delete the device from the database. A device rescan command can then be performed on the WaveLinx Area Hub to add the device as a new device.

WaveLinX CAT Occupancy Ceiling Sensor Reference Sheet

WaveLinX CAT Occupancy Ceiling Sensor



General Features

- Integrated photocell for open loop daylighting
- Integrated Passive Infrared (PIR) motion sensor for occupancy or vacancy sensing

Power

- CAT bus power: 9.5 - 22.5 VDC supplied by communication bus

Typical Applications

- Office, education, and other indoor applications

Models:

- **OCS-C-P12:** OCS-C Occupancy Ceiling Sensor, 1200 sq. ft.
- **OCS-C-P06:** PCS-C Occupancy Ceiling Sensor, 600 sq. ft.

WaveLinX App Details:

Connection to a WaveLinX Area Hub required to communicate with the WaveLinX Area Controller/WaveLinX Mobile App

- Default Device Name:
 - Ceiling Sensor C
- Unassigned Device Category:
 - Ceiling Sensor

Icon Displayed in WaveLinX App:



The WaveLinX CAT Ceiling Sensor provides motion sensing and/or open loop daylight dimming to the WaveLinX system. In open loop daylighting applications, the sensor can control multiple zones in the same space.

WaveLinX CAT Distributed and Network Modes

WaveLinX CAT devices connect to CAT buses that can operate independently or may be connected to an Area Hub to operate as part of a system.

- **Distributed Mode:** The WaveLinX CAT devices connected to the same WaveLinX CAT bus operate together and control based on their out-of-the-box default settings or settings programmed using a WaveLinX CAT Bluetooth Programming Interface Module and the WaveLinX CAT Mobile App.
- **Networked Mode:** The WaveLinX CAT devices are connected to an Area Hub, are added to a WaveLinX Area Controller, and operate from the commands configured in the WaveLinX Area Controller. CAT devices can respond to or issue commands from/to other devices configured in the WaveLinX Area Controller.

Out-of-the-Box Operation

The WaveLinX CAT Occupancy Ceiling Sensor will operate in **Distributed Mode** until the connected Area Hub is discovered and the CAT devices are added to the WaveLinX Area Controller.

In **Distributed Mode**, all CAT devices connected to the same CAT bus work together as an Area with the following programming¹⁴⁷:

- The CAT Dimming Switchpack will function in default Zone 1
- CAT Ceiling Sensors and Sensors connected to CAT Sensor Interface Modules will turn ON all Zones at 50% occupancy and apply a 20-minute hold time. Zones will turn OFF after the hold time expires.
- Wallstation buttons will issue commands per their default configuration
- Contact Closure Module inputs have the following configuration: 1. Alert mode, 2. Demand Response (DR) reduction to 20%, 3. Not configured, 4. Not Configured

Distributed Mode default configuration for the CAT Contact Closure Module and CAT Sensor Input Module will be overwritten by the Networked Mode programmed settings.

Discovery/Added to WaveLinX Area Controller

Once the WaveLinX Area Hub has been discovered and added along with its connected devices to a WaveLinX Area Controller, the WaveLinX CAT Occupancy Ceiling Sensor will be added to an area along with all the devices attached to the same CAT bus. The initial programming will be imported from the devices during the discovery/add process. From this point, the devices will then operate in **Networked Mode** with programming maintained for the device in the WaveLinX Area Controller.

LED Operation

LED conditions	Meaning
Flashes Blue 300ms/OFF 2.7s with motion	The device is operating in Distributed Mode and is detecting motion.
LED flashes blue for 1 sec. / OFF for 1 sec. Repeats indefinitely independent of motion.	The device is operating in Distributed Mode but has been disabled by a WaveLinX CAT Mobile App command. The sensor will not respond to motion activity in disabled mode.
Flashes White 300ms/OFF 2.7s with motion	The device is operating in Networked Mode and is detecting motion.
LED flashes white for 1 sec. / OFF for 1 sec. Repeats indefinitely independent of motion.	The device is operating in Networked Mode but has been disabled by a timed schedule event or WaveLinX Mobile App command. The sensor will not respond to motion activity in disabled mode.
Flashes magenta 1s/OFF 1s. Repeats for identify duration.	The device has been placed in Blink to Identify mode from the Area Hub Identify button, the Area Hub web interface, or from the WaveLinX Mobile App.
Flashes cyan 1s/OFF 1s. Repeats for update duration.	The device firmware is being updated.
Solid green	The device is in bootloader mode (image is being swapped). The LED will return to normal operation once the image swap is complete.
Flashes yellow for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 5 and 10 seconds and the device is in the process of a factory reset.
Flashes blue for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 1 and 5 seconds and the Area Hub is in the process of a soft reset.
ALL LEDs turn OFF with reset button press	The reset button has been pressed for less than 1 second or greater than 10 seconds. No reset occurs.

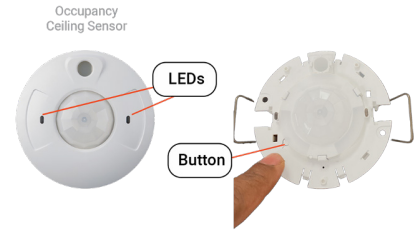
¹⁴⁷ While in Distributed Mode, device programming can be changed from defaults to other behavior using the WaveLinX CAT Bluetooth Programming Interface Module and the WaveLinX CAT Mobile App.

WaveLinx CAT Occupancy Ceiling Sensor continued




Occupancy Ceiling Sensor Pushbutton Functions

The Occupancy Ceiling Sensor has a pushbutton that allows for device reset. The pushbutton is located under the front sensor casing which can be easily removed for access.



Function	Press Length	LED feedback	Device outcome
Soft Reset/Reboot	Press and hold for 2 seconds recommended until LED flashes blue (>=1 sec. to <5 sec.)	LED will flash blue 500ms/ OFF 500ms and repeats for a short period	Soft reset begins. Device restarts without interruption
Factory Reset	Press and hold for 6 seconds recommended until LED flashes yellow (>=5 sec. to <10 sec.)	LED will flash yellow 500ms/ OFF 500ms and repeats for a short period	Factory reset begins for the Distributed Mode device settings. If the device is still programmed and communicating to a WaveLinx Area Controller, after the reset completes, it will continue to operate in Networked Mode with the settings programmed in the WaveLinx Area Controller (no change in operation).

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select the  icon in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a device matching that type should respond for 15 seconds with the described behavior.

Use the Area Hub onboard buttons or web interface to place the Area Hub or a specific CAT bus port in **Blink to Identify** mode. The devices on the CAT bus(es) selected will respond with the described behavior for 1 minute.

Behavior:

- The device LED will flash magenta for the identify duration.

Open Loop Daylight Operation

Daylighting will not operate until an open loop daylight set is created and configured.

- Once configured and calibrated, the controlled zones will dim in response to entering daylight.
 - When the measured daylight contribution increases or decreases, the controlled zones will dim or raise lighting to reduce or increase the light level.
 - When the measured light level exceeds 150% of the calibrated gain for more than 30 minutes, the sensor will dim to OFF.
- If lighting has dimmed to OFF and the area is still occupied, lighting will be turned back ON when one of the two conditions occurs:
 - The measured light level falls between 100% and 50% of the calibrated gain for more than 10 minutes
 - The measured light level falls below 50% of the calibrated gain for longer than 30 seconds

Open Loop Daylight Set Configuration

- Create the open loop daylight set.
- Assign the zones that should be controlled by the daylight set.¹⁴⁸
- Assign the sensor to the daylight set
- Calibrate the sensor

Important Mounting Considerations

- Open loop daylight sensors should be mounted so that the sensor lens views mainly daylight, not the electric light being controlled in the area.
- The optimal mounting location for occupancy sensing may not be optimal for open loop daylighting. Separate sensors may be necessary.

Open Loop Daylight Adjustment Details

Perform adjustment during daylight hours when electric lighting should be reduced but not fully dimmed. The use of a light meter is recommended. With electric lighting turned OFF, verify with a light meter at the work surface that the reading with daylight alone is within 50% to 75% of the desired target light level. If the light level is too high or too low, return at a time when the daylight level is within this optimal range. (For example, if the desired light level at the work surface is 500 lux, the reading with electric lighting OFF should be between 250 to 375 lux for best results.)

In the daylight set's **Calibrate** screen, adjust the slider bar to change the light level to the desired light level, then tap the back button to save the change.

Loss of Communications Operation

If the connected Area Hub has not communicated with the WaveLinx Area Controller the devices connected to the CAT bus will begin **Distributed Mode** operation. The light level will remain until a command from an occupancy sensor or wallstation occurs. The devices will operate in **Distributed Mode** until communications are re-established after which **Networked Mode** operation will begin.

Operation upon Return of Power

Upon return of power, the device will resume operation in **Distributed Mode** until the Area Hub communications with the WaveLinx Area Controller are restored. Once communicating with the WaveLinx Area Controller, the device will begin normal operation in **Networked Mode**.

Factory Reset Instructions

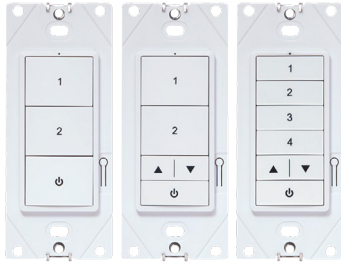
Although the device contains an onboard button for factory reset, if the device is connected to a WaveLinx Area Hub/WaveLinx Area Controller, the device will continue to operate with the programming in the WaveLinx Area Controller after the factory reset is performed.

To factory reset the device AND remove programming from the WaveLinx Area Controller, use the Mobile Application to delete the device from the database. A device rescan command can then be performed on the WaveLinx Area Hub to add the device as a new device.

¹⁴⁸ If fixtures in the zones that are assigned to open loop daylight sets contain Integrated Sensors or Tilemount Sensors, closed loop daylighting will automatically be disabled for these devices.

WaveLinX CAT WST-C Series Wallstation Reference Sheet

WaveLinX CAT WST-C Series Wallstation



Features

- Multi-scene selection, raise/lower, and toggle ON/OFF control
- Single or multi-gang mounting

Power:

- CAT bus power: 9.5 - 22.5 VDC supplied by communication bus

Typical Applications

- Office, education, and other indoor applications

Models:

- **WST-C-3:** 3 Button
- **WST-C-3D:** 3 Button with Raise/Lower
- **WST-C-5D:** 5 Button with Raise/Lower

WaveLinX App Details:

Connection to a WaveLinX Area Hub required to communicate with the WaveLinX Area Controller/WaveLinX Mobile App

- Default Device Name:
 - Wall Station C 3 (WST-C-3)
 - Wall Station C 3D (WST-C-3D)
 - Wall Station C 5D (WST-C-5D)
- Unassigned Device Category:
 - Wallstation

Icon Displayed in WaveLinX App:



Programmable options:

- Scene Selection
- Scene Toggle
- Save Scene
- Zone Toggle
- Zone Level
- Raise
- Lower
- Hold/Release Occupied
- Wall Status Toggle¹⁴⁹
- No Action
- Network Action from WaveLinX CORE¹⁵⁰

Use the WaveLinX CAT WST-C Series Wallstations to manually operate connected loads and provide customized light levels for each WaveLinX controlled space.

WaveLinX CAT Distributed and Network Modes

WaveLinX CAT devices connect to CAT buses that can operate independently or may be connected to an Area Hub to operate as part of a system.

- **Distributed Mode:** The WaveLinX CAT devices connected to the same WaveLinX CAT bus operate together and control based on their out-of-the-box default settings or settings programmed using a WaveLinX CAT Bluetooth Programming Interface Module and the WaveLinX CAT Mobile App.
- **Networked Mode:** The WaveLinX CAT devices are connected to an Area Hub, are added to a WaveLinX Area Controller, and operate from the commands configured in the WaveLinX Area Controller. CAT devices can respond to or issue commands from/to other devices configured in the WaveLinX Area Controller.

Out-of-the-Box Operation

The WaveLinX CAT WST-C Series Wallstations will operate in **Distributed Mode** until the connected Area Hub is discovered and the CAT devices are added to the WaveLinX Area Controller.

In **Distributed Mode**, all CAT devices connected to the same CAT bus work together as an Area with the following programming¹⁵¹:

- The CAT Dimming Switchpack will function in default Zone 1
- CAT Ceiling Sensors and Sensors connected to CAT Sensor Interface Modules will turn ON all Zones at 50% occupancy and apply a 20-minute hold time. Zones will turn OFF after the hold time expires.
- Wallstation buttons will issue commands per their default configuration
- Contact Closure Module inputs have the following configuration: 1. *Alert mode*, 2. *Demand Response (DR) reduction to 20%*, 3. *Not configured*, 4. *Not Configured*

Distributed Mode default configuration for the CAT Contact Closure Module and CAT Sensor Input Module will be overwritten by the Networked Mode programmed settings.

Discovery/Added to WaveLinX Area Controller

Once the WaveLinX Area Hub has been discovered and added along with its connected devices to a WaveLinX Area Controller, the WaveLinX CAT WST-C Series Wallstation will be added to an area along with all the devices attached to the same CAT bus. The initial programming will be imported from the devices during the discovery/add process. From this point, the devices will then operate in **Networked Mode** with programming maintained for the device in the WaveLinX Area Controller.

LED Operation

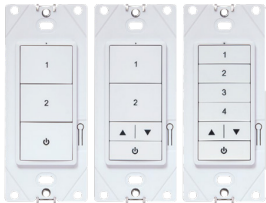
LED conditions	Meaning	
Flashes Blue 300ms/OFF 1.7s. Repeats for 10 seconds.	One of the wallstation buttons was pressed and the device is operating in Distributed Mode .	
Flashes White 300ms/OFF 1.7s. Repeats for a max of 10 seconds.	One of the wallstation buttons was pressed and the device is operating in Networked Mode . The LED will stop flashing when a response message is received or after 10 seconds.	
LED flashes white for 1 sec. / OFF for 1 sec. Repeats for 10 seconds.	The device is operating in Networked Mode but has been disabled by a timed schedule event or WaveLinX Mobile App command. The buttons will not operate when disabled.	
Flashes magenta 1s/OFF 1s. Repeats for identify duration.	The device has been placed in Blink to Identify mode from the Area Hub Identify button, the Area Hub web interface, or from the WaveLinX Mobile App.	
Flashes cyan 1s/OFF 1s. Repeats for update duration.	The device firmware is being updated.	
Solid green	The device is in bootloader mode (image is being swapped). The LED will return to normal operation once the image swap is complete.	
Flashes yellow for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 5 and 10 seconds and the device is in the process of a factory reset.	
Flashes blue for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 1 and 5 seconds and the Area Hub is in the process of a soft reset.	
LED turns OFF with reset button press	The reset button has been pressed for less than 1 second or greater than 10 seconds. No reset occurs.	

¹⁴⁹ **Wall Status Toggle** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher. This option is for use with Partitioned Areas.

¹⁵⁰ **Network Action** will only show in WAC2 (Gen 2) version 10.0.x.x firmware and higher. WAC must be a configured part of a WaveLinX CORE platform to perform supported network actions.

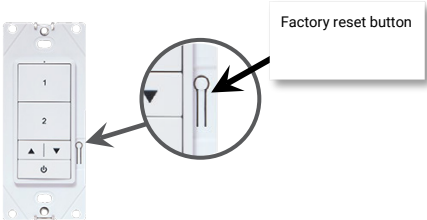
¹⁵¹ While in Distributed Mode, device programming can be changed from defaults to other behavior using the WaveLinX CAT Bluetooth Programming Interface Module and the WaveLinX CAT Mobile App.

WaveLinx CAT WST-C Series Wallstation continued




WST-C Series Wallstation Pushbutton Functions

The WST-C Series Wallstation has a pushbutton that allows for device reset.



Function	Press Length	LED feedback	Device outcome
Soft Reset/Reboot	Press and hold for 2 seconds recommended until LED flashes blue (>=1 sec. to <5 sec.)	LED will flash blue 500ms/ OFF 500ms and repeats for a short period	Soft reset begins. Device restarts without interruption
Factory Reset	Press and hold for 6 seconds recommended until LED flashes yellow (>=5 sec. to <10 sec.)	LED will flash yellow 500ms/ OFF 500ms and repeats for a short period	Factory reset begins for the Distributed Mode device settings. If the device is still programmed and communicating to a WaveLinx Area Controller, after the reset completes, it will continue to operate in Networked Mode with the settings programmed in the WaveLinx Area Controller (no change in operation).

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select the  icon in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a device matching that type should respond for 15 seconds with the described behavior.

Use the Area Hub onboard buttons or web interface to place the Area Hub or a specific CAT bus port in **Blink to Identify** mode. The devices on the CAT bus(es) selected will respond with the described behavior for 1 minute.

Behavior:

- The device LED will flash magenta for the identify duration.

Loss of Communications Operation

If the connected Area Hub has not communicated with the WaveLinx Area Controller the devices connected to the CAT bus will begin **Distributed Mode** operation. The light level will remain until a command from an occupancy sensor or wallstation occurs. The devices will operate in **Distributed Mode** until communications are re-established after which **Networked Mode** operation will begin.

Operation upon Return of Power

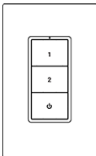
Upon return of power, the device will resume operation in **Distributed Mode** until the Area Hub communications with the WaveLinx Area Controller are restored. Once communicating with the WaveLinx Area Controller, the device will begin normal operation in **Networked Mode**.

Factory Reset Instructions


Although the device contains an onboard button for factory reset, if the device is connected to a WaveLinx Area Hub/WaveLinx Area Controller, the device will continue to operate with the programming in the WaveLinx Area Controller after the factory reset is performed.

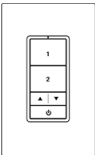
To factory reset the device AND remove programming from the WaveLinx Area Controller, use the Mobile Application to delete the device from the database. A device rescan command can then be performed on the WaveLinx Area Hub to add the device as a new device.

Default WaveLinx WST-C Wallstation Operation




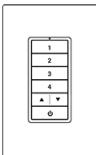
WST-C-3

- Button #1: Scene 1 = 100%
- Button #2: Scene 3 = 50%
- Button  : Scene 0 (OFF)




WST-C-3D

- Button #1: Scene 1 = 100%
- Button #2: Scene 3 = 50%
- Raise/Lower: Raise/Lower All Zones in Current Area¹⁵²
- Button  : Toggle Scene (Scene 0/Scene 1)



WST-C-5D

- Button #1: Scene 1 = 100%
- Button #2: Scene 2 = 70%
- Button #3: Scene 3 = 50%
- Button #4: Scene 4 = 30%
- Raise/Lower: Raise/Lower All Zones in Current Area¹³⁶
- Button  : Scene 0 (OFF)

¹⁵² White tuning zones are automatically exempted from raise/lower ALL zones to prevent inadvertent adjustment of the color temperature when adjusting light levels.

WaveLinx CAT Contact Closure Input Module Reference Sheet

WaveLinx CAT Contact Closure Input Module



Features

- Four dry contact inputs for connection to up to four separate maintained dry contact closure switches.
- Response to contact input closures is user defined.

Power:

- CAT bus power: 9.5 - 22.5 VDC supplied by communication bus

Typical Applications

- Office, education, and other indoor applications

Special Features

- Offers ability of issuing Alert Mode, Demand Response, and After Hours Occupancy commands to the WaveLinx WAC

Typical Applications

- Office, education, or other indoor applications
- Where interface to an external input is required

Models:

- **CCI-C-V-:** WaveLinx CAT CCI-C Contact Closure Input Module

WaveLinx App Details:

Connection to a WaveLinx Area Hub required to communicate with the WaveLinx Area Controller/WaveLinx Mobile App

- Default Device Name:
 - Contact Closure Inputs C
- Unassigned Device Category:
 - Relay Switchpack-CCI

Icon Displayed in WaveLinx App:



Programmable options:

- Alert Mode
- Demand Response
- After Hours Occupancy Mode¹⁵³
- Wall Status Toggle¹⁵⁴
- Scene Select, Scene Toggle
- Zone Level, Zone Toggle

Use the WaveLinx CAT Contact Closure Input Module as an interface for a variety of devices outside the WaveLinx network. The Contact Closure Input Module can detect up to four separate dry contact closures. Maintained contact closures support all functions and can be user defined for operation when closure or open is received from the connected contact. Momentary contact closures can be used for limited scene and zone function commands.

WaveLinx CAT Distributed and Network Modes

WaveLinx CAT devices connect to CAT buses that can operate independently or may be connected to an Area Hub to operate as part of a system.

- **Distributed Mode:** The WaveLinx CAT devices connected to the same WaveLinx CAT bus operate together and control based on their out-of-the-box default settings or settings programmed using a WaveLinx CAT Bluetooth Programming Interface Module and the WaveLinx CAT Mobile App.
- **Networked Mode:** The WaveLinx CAT devices are connected to an Area Hub, are added to a WaveLinx Area Controller, and operate from the commands configured in the WaveLinx Area Controller. CAT devices can respond to or issue commands from/to other devices configured in the WaveLinx Area Controller.

Out-of-the-Box Operation

The WaveLinx CAT Contact Closure Input Module s will operate in **Distributed Mode** until the connected Area Hub is discovered and the CAT devices are added to the WaveLinx Area Controller.

In **Distributed Mode**, all CAT devices connected to the same CAT bus work together as an Area with the following programming¹⁵⁵:

- Contact Closure Module inputs have the following configuration: 1. *Alert mode*, 2. *Demand Response (DR) reduction to 20%*, 3. *Not configured*, 4. *Not Configured*
- The CAT Dimming Switchpack will function in default Zone 1
- CAT Ceiling Sensors and Sensors connected to CAT Sensor Interface Modules will turn ON all Zones at 50% occupancy and apply a 20-minute hold time. Zones will turn OFF after the hold time expires.
- Wallstation buttons will issue commands per their default configuration

Distributed Mode default configuration for the CAT Contact Closure Module and CAT Sensor Input Module will be overwritten by the Networked Mode programmed settings.

Once the WaveLinx Area Hub has been discovered and added along with its connected devices to a WaveLinx Area Controller, the WaveLinx CAT Contact Closure Input Module will be added to an area along with all the devices attached to the same CAT bus. The initial programming will be imported from the devices during the discovery/add process. From this point, the devices will then operate in **Networked Mode** with programming maintained for the device in the WaveLinx Area Controller.

Alert Mode

Alert Mode is a high priority command that triggers all dimmable, non-dimmable, and receptacle zones in the WaveLinx Area Controller to go to 100% and prevents operation of lighting from other devices until Alert Mode is deactivated. Once the Alert Mode contact is cancelled:

- Lighting will blink one time to warn that lighting is being released to normal operation in 5 minutes. (manual wallstation actions can operate and adjust light level after this point).
- Lighting will blink two times to warn that lighting is being released to normal operation at the 1 minute mark.
- Normal operation will begin once the timer expires.

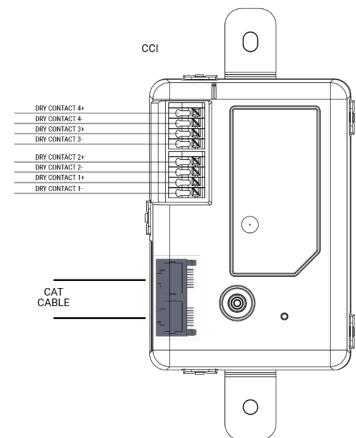
Note: If occupancy sensors are in the area, the occupancy set will be evaluated for status upon deactivation of Alert Mode.

Demand Response

An input programmed to send a Demand Response action will cause all Areas in the WaveLinx Area Controller to assume Demand Response mode. All zones that are programmed for Demand Response reduction will reduce their light level by the defined reduction level and operate within the reduced range. When the Demand Response input is deactivated, the system will return to normal operation. Lighting will remain at the last light level until the next command is received.

After Hours Occupancy Mode

An input programmed to send an After Hours Occupancy action¹⁵³ will only affect Areas programmed for After Hours Occupancy mode. When the mode is activated, the areas will change the occupancy set unoccupied command to the After Hours Occupancy mode programmed level. When the mode is deactivated, the unoccupied command will return to normally programmed behavior. This is typically used to allow for external time clock control.



¹⁵³ **After Hours Occupancy Mode** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

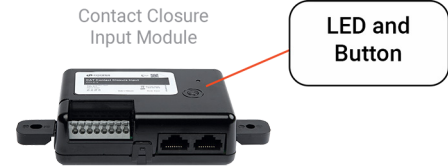
¹⁵⁴ **Wall Status Toggle** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher. This option is for use with Partitioned Areas.

¹⁵⁵ While in Distributed Mode, device programming can be changed from defaults to other behavior using the WaveLinx CAT Bluetooth Programming Interface Module and the WaveLinx CAT Mobile App.

WaveLinx CAT Contact Closure Input Module continued

**Contact Closure Input Module Pushbutton Functions**

The CAT Contact Closure Input Module has a pushbutton that allows for device reset.



Function	Press Length	LED feedback	Device outcome
Soft Reset/Reboot	Press and hold for 2 seconds recommended until LED flashes blue (>=1 sec. to <5 sec.)	LED will flash blue 500ms/ OFF 500ms and repeats for a short period	Soft reset begins. Device restarts without interruption
Factory Reset	Press and hold for 6 seconds recommended until LED flashes yellow (>=5 sec. to <10 sec.)	LED will flash yellow 500ms/ OFF 500ms and repeats for a short period	Factory reset begins for the Distributed Mode device settings. If the device is still programmed and communicating to a WaveLinx Area Controller, after the reset completes, it will continue to operate in Networked Mode with the settings programmed in the WaveLinx Area Controller (no change in operation).

LED Operation

LED conditions	Meaning
Flashes Blue 300ms/OFF 1.7s. Repeats.	The device is operating in Distributed Mode .
Flashes White 300ms/OFF 1.7s. Repeats.	The device is operating in Networked Mode .
Flashes magenta 1s/OFF 1s. Repeats for identify duration.	The device has been placed in Blink to Identify mode from the Area Hub Identify button, the Area Hub web interface, or from the WaveLinx Mobile App.
Flashes cyan 1s/OFF 1s. Repeats for update duration.	The device firmware is being updated.
Solid green	The device is in bootloader mode (image is being swapped). The LED will return to normal operation once the image swap is complete.
Flashes yellow for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 5 and 10 seconds and the device is in the process of a factory reset.
Flashes blue for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 1 and 5 seconds and the Area Hub is in the process of a soft reset.
LED turns OFF with reset button press	The reset button has been pressed for less than 1 second or greater than 10 seconds. No reset occurs.

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select the 📶 icon in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a device matching that type should respond for 15 seconds with the described behavior.

Use the Area Hub onboard buttons or web interface to place the Area Hub or a specific CAT bus port in **Blink to Identify** mode. The devices on the CAT bus(es) selected will respond with the described behavior for 1 minute.

Behavior:

- The device LED will flash magenta for the identify duration.

Loss of Communications Operation

If the connected Area Hub has not communicated with the WaveLinx Area Controller the devices connected to the CAT bus will begin **Distributed Mode** operation. The light level will remain until a command from an occupancy sensor or wallstation occurs. The devices will operate in **Distributed Mode** until communications are re-established after which **Networked Mode** operation will begin.

Operation upon Return of Power

Upon return of power, the device will resume operation in **Distributed Mode** until the Area Hub communications with the WaveLinx Area Controller are restored. Once communicating with the WaveLinx Area Controller, the device will begin normal operation in **Networked Mode**.

Factory Reset Instructions

Although the device contains an onboard button for factory reset, if the device is connected to a WaveLinx Area Hub/WaveLinx Area Controller, the device will continue to operate with the programming in the WaveLinx Area Controller after the factory reset is performed.

To factory reset the device AND remove programming from the WaveLinx Area Controller, use the Mobile Application to delete the device from the database. A device rescan command can then be performed on the WaveLinx Area Hub to add the device as a new device.

WaveLinx CAT Sensor Interface Module Reference Sheet

WaveLinx CAT Sensor Interface Module



Features

- One input terminal for connection to a Greengate Dual Tech sensor
- 24VDC output with protection to power one Greengate sensor per SIM

Power:

- CAT bus power: 9.5 - 22.5 VDC supplied by communication bus

Typical Applications

- Office, education, and other indoor applications

Typical Applications

- Office, education, or other indoor applications
- Where interface to a Greengate dual tech sensor is a requirement

Models:

- **SIM-C-V-**: WaveLinx CAT SIM-C Sensor Interface Module

WaveLinx App Details:

Connection to a WaveLinx Area Hub required to communicate with the WaveLinx Area Controller/WaveLinx Mobile App

- Default Device Name:
 - Sensor Interface Module C
- Unassigned Device Category:
 - Sensor Interface Module

Icon Displayed in WaveLinx App:



Use the WaveLinx CAT Sensor Interface Module to connect with a Greengate Dual Tech sensor. The interface provides the necessary power to the Greengate sensor and offers limited configuration through the WaveLinx system.

WaveLinx CAT Distributed and Network Modes

WaveLinx CAT devices connect to CAT buses that can operate independently or may be connected to an Area Hub to operate as part of a system.

- **Distributed Mode:** The WaveLinx CAT devices connected to the same WaveLinx CAT bus operate together and control based on their out-of-the-box default settings or settings programmed using a WaveLinx CAT Bluetooth Programming Interface Module and the WaveLinx CAT Mobile App.
- **Networked Mode:** The WaveLinx CAT devices are connected to an Area Hub, are added to a WaveLinx Area Controller, and operate from the commands configured in the WaveLinx Area Controller. CAT devices can respond to or issue commands from/to other devices configured in the WaveLinx Area Controller.

Out-of-the-Box Operation

The WaveLinx CAT Contact Closure Input Module s will operate in **Distributed Mode** until the connected Area Hub is discovered and the CAT devices are added to the WaveLinx Area Controller.

In **Distributed Mode**, all CAT devices connected to the same CAT bus work together as an Area with the following programming¹⁵⁶:

- Contact Closure Module inputs have the following configuration: 1. *Alert mode*, 2. *Demand Response (DR) reduction to 20%*, 3. *Not configured*, 4. *Not Configured*
- The CAT Dimming Switchpack will function in default Zone 1
- CAT Ceiling Sensors and Sensors connected to CAT Sensor Interface Modules will turn ON all Zones at 50% occupancy and apply a 20-minute hold time. Zones will turn OFF after the hold time expires.
- Wallstation buttons will issue commands per their default configuration

Distributed Mode default configuration for the CAT Contact Closure Module and CAT Sensor Input Module will be overwritten by the Networked Mode programmed settings.

Discovery/Added to WaveLinx Area Controller

Once the WaveLinx Area Hub has been discovered and added along with its connected devices to a WaveLinx Area Controller, the WaveLinx CAT Contact Closure Input Module will be added to an area along with all the devices attached to the same CAT bus. The initial programming will be imported from the devices during the discovery/add process. From this point, the devices will then operate in **Networked Mode** with programming maintained for the device in the WaveLinx Area Controller.

LED Operation

LED conditions	Meaning
Flashes Blue 300ms/OFF 2.7s with motion	The device is operating in Distributed Mode and the connected sensor is detecting motion.
LED flashes blue for 1 sec. / OFF for 1 sec. Repeats indefinitely independent of motion.	The device is operating in Distributed Mode but has been disabled by a WaveLinx CAT Mobile App command. The connected sensor will not respond to motion activity in disabled mode.
Flashes White 300ms/OFF 2.7s with motion	The device is operating in Networked Mode and the connected sensor is detecting motion.
LED flashes white for 1 sec. / OFF for 1 sec. Repeats indefinitely independent of motion.	The device is operating in Networked Mode but has been disabled by a timed schedule event or WaveLinx Mobile App command. The connected sensor will not respond to motion activity in disabled mode.
Flashes magenta 1s/OFF 1s. Repeats for identify duration.	The device has been placed in Blink to Identify mode from the Area Hub Identify button, the Area Hub web interface, or from the WaveLinx Mobile App.
Flashes cyan 1s/OFF 1s. Repeats for update duration.	The device firmware is being updated.
Solid green	The device is in bootloader mode (image is being swapped). The LED will return to normal operation once the image swap is complete.
Flashes yellow for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 5 and 10 seconds and the device is in the process of a factory reset.
Flashes blue for 500ms/OFF for 500ms with reset button press	The reset button has been pressed between 1 and 5 seconds and the Area Hub is in the process of a soft reset.
ALL LEDs turn OFF with reset button press	The reset button has been pressed for less than 1 second or greater than 10 seconds. No reset occurs.

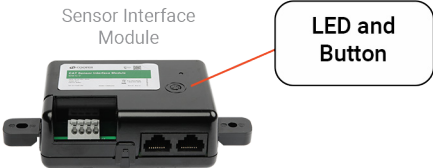
¹⁵⁶ While in Distributed Mode, device programming can be changed from defaults to other behavior using the WaveLinx CAT Bluetooth Programming Interface Module and the WaveLinx CAT Mobile App.

WaveLinx CAT Sensor Interface Module continued




Sensor Interface Module Pushbutton Functions

The CAT Sensor Interface Module has a pushbutton that allows for device reset.



Function	Press Length	LED feedback	Device outcome
Soft Reset/Reboot	Press and hold for 2 seconds recommended until LED flashes blue (>=1 sec. to <5 sec.)	LED will flash blue 500ms/ OFF 500ms and repeats for a short period	Soft reset begins. Device restarts without interruption
Factory Reset	Press and hold for 6 seconds recommended until LED flashes yellow (>=5 sec. to <10 sec.)	LED will flash yellow 500ms/ OFF 500ms and repeats for a short period	Factory reset begins for the Distributed Mode device settings. If the device is still programmed and communicating to a WaveLinx Area Controller, after the reset completes, it will continue to operate in Networked Mode with the settings programmed in the WAC (no change in operation).

Blink to Identify

Use the WaveLinx App’s **Blink to Identify** feature to identify the device. Select the  icon in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a device matching that type should respond for 15 seconds with the described behavior.

Use the Area Hub onboard buttons or web interface to place the Area Hub or a specific CAT bus port in **Blink to Identify** mode. The devices on the CAT bus(es) selected will respond with the described behavior for 1 minute.

Behavior: The device LED will flash magenta for the identify duration.

Loss of Communications Operation

If the connected Area Hub has not communicated with the WaveLinx Area Controller the devices connected to the CAT bus will begin **Distributed Mode** operation. The light level will remain until a command from an occupancy sensor or wallstation occurs. The devices will operate in **Distributed Mode** until communications are re-established after which **Networked Mode** operation will begin.

Operation upon Return of Power

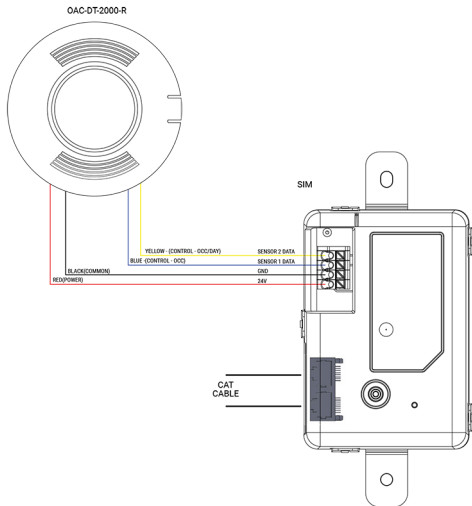
Upon return of power, the device will resume operation in **Distributed Mode** until the Area Hub communications with the WaveLinx Area Controller are restored. Once communicating with the WaveLinx Area Controller, the device will begin normal operation in **Networked Mode**.

Factory Reset Instructions

Although the device contains an onboard button for factory reset, if the device is connected to a WaveLinx Area Hub/WaveLinx Area Controller, the device will continue to operate with the programming in the WaveLinx Area Controller after the factory reset is performed.

To factory reset the device AND remove programming from the WaveLinx Area Controller, use the Mobile Application to delete the device from the database. A device rescan command can then be performed on the WaveLinx Area Hub to add the device as a new device.

Greengate Sensor Details



Greengate Sensor Onboard Selection Switch Settings

Greengate Occupancy Sensors have onboard configuration switches for configuration in a non-WaveLinx application. **For best operation with the WaveLinx system, set the configuration switches for the settings shown.** Refer to the installation instructions for the sensor being used to identify the switch locations. If sensors have additional option switches, leave them at the defaults described in the sensor installation instructions.

Setting	Default	Recommended Setting
Time Delay	Auto	5 minutes
Activation Mode ¹⁵⁷	Auto	Auto
Override Mode	Disabled	Disabled
Daylight Options	Disabled	Disabled

¹⁵⁷ Not all supported Greengate sensor types will have this option.

WaveLinX LV Low-Voltage Fixture with Integrated Sensor Reference Sheet

WaveLinX LV Low-Voltage Fixture with Integrated Sensor

**Features**

- Integrated photocell for closed loop daylighting
- Integrated Passive Infrared (PIR) motion sensor for occupancy or vacancy sensing
- Class 2, low-voltage connection to a WaveLinX Low-Voltage Power Module for easy installation

Typical Applications

- Education, office, and other interior spaces

Models:

- **LV1-SLVPD1:** Available option on many Cooper Lighting luminaires.
- **WLA:** Available option on many Cooper Lighting luminaires

WaveLinX App Details:

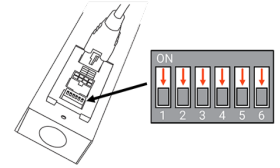
- Default Device Name:
 - IS-LV
- Unassigned Device Category:
 - Integrated Sensor

Icon Displayed in WaveLinX App:

The WaveLinX LV Low-Voltage Fixture with Integrated Sensor communicates through the WaveLinX Low-Voltage Power Module to the WaveLinX system. The onboard Integrated Sensor provides both occupancy and daylight control that can be easily configured using the WaveLinX App.

Important Installation Details:

- Low-Voltage Fixtures have onboard selector switches. Ensure that all fixture selector switches are in the OFF or down position (default).
- Always power down the WaveLinX Low-Voltage Power Module before connecting Low-Voltage Fixtures.

**Out-of-the-Box Operation**

- Once power is applied, the attached fixture operates via the motion sensor.
 - The occupancy sensor is set for high sensitivity.
 - If occupied, the fixture will turn ON to 100%.
 - The fixture will dim to OFF (0%) after 20 minutes when the space is unoccupied.
- The daylight sensor is disabled.
- The LED flashes red or green (tri-color LED) for 100ms once every 3 seconds when motion is detected.¹⁵⁸

Construction Area Default Operation

Once paired, the device operates as part of the Construction Area.

- The daylight sensor remains disabled.

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- The daylight sensor is disabled.

- All occupancy sensors report to the area's occupancy set.
 - If occupied, the fixtures will turn ON to 50% (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0).
- LED: Flashes red (single-color) or white (tricolor) for 100ms once every 3 sec. with motion detection.

LED Operation (The LED is located beneath the sensor lens.)

Note: Older Low Voltage Integrated Sensors may have a single-color red LED. Newer models will have multiple LED color options (tricolor) to display different conditions.

LED conditions	Meaning
Flashes for 100ms, once every 3 sec. <ul style="list-style-type: none"> • green (tricolor) • red (single-color) 	The device is unpaired (out-of-the-box) and is detecting motion or the connected Low-Voltage Power Module lost communication with the WaveLinX Area Controller and the device is detecting motion.
Flashes for 100ms, once every 3 sec. <ul style="list-style-type: none"> • white (tricolor) • red (single-color) 	The device is paired to a WaveLinX Area Controller and is detecting motion.
Fast blink 10ms every 250ms: <ul style="list-style-type: none"> • white (tricolor) • red (single-color) 	The daylight sensor has exceeded 150% of the calibrated light level for 30 minutes. ¹⁵⁹
LED is OFF	The device is not detecting motion. If motion is occurring, ensure device is powered and that the LED has not been disabled. ¹⁶⁰
LED flashes magenta (tricolor) one time	The flashlight method has been used to identify the device. The LED will flash red in single-color LED sensors.

Pairing Information

The Low-Voltage Fixture with Integrated Sensor will automatically pair when its WaveLinX Low-Voltage Power Module is paired with the WaveLinX Area Controller. If a Low-Voltage device is attached after the initial pairing was completed (always power down before the connection) or a Low-Voltage device is deleted in error from the WaveLinX App, manually refresh the pairing. Press and release (1 second press) the PAIR button on the WaveLinX Area Controller to start pairing mode. The Low-Voltage Power Module will refresh the connected devices to the WaveLinX Area Controller and will pair any unpaired devices.

Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

- Fixture dims to 10%.
- Single-color LED Sensor: LED flashes red for 100ms once every 3 seconds when motion is detected.
- Tri-color LED Sensor: LED flashes white for 100ms once every 3 seconds when motion is detected.

¹⁵⁸ Devices with older firmware may go to 75% light output when occupied in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

¹⁵⁹ The LED will stop flashing if the light level drops but stays between 50% and 100% of the calibrated light level for 10 minutes OR if the light level falls below 50% of the calibrated light level for 30 seconds.

¹⁶⁰ The LED may be difficult to see in very bright areas.


Low-Voltage Fixture with Integrated Sensor continued



Supported Identification Methods:

- **Laser pointer or focused flashlight beam:** For fixtures mounted at reasonable mounting heights, use a laser pointer or bright, focused beam flashlight to trigger identification mode. Standing beneath the sensor, shine the light directly into the sensor lens for 3-4 seconds. The timing needs to be precise for the identification mode to respond. The LED in the sensor window will briefly flash violet (tri-color LED sensor) or red (single color LED sensor) at the end of this 3-4 second period.

Blink to Identify

Use the WaveLinX App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. When placed in **Blink to Identify** mode, the fixture will turn ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds.

Daylight Operation (closed loop)

- Once assigned to an area and enabled, the sensor will begin closed loop daylight dimming operation to a reasonable light level. If a specific light level (target) is expected at the surface, then calibration is required.
- When the measured light exceeds the calibrated level, the fixture will dim lighting to reduce the light level.
- Dim to OFF is automatically enabled when daylighting is enabled and cannot be disabled.
 - When the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will dim to OFF.
 - Lighting will be turned back ON when one of the two conditions occurs:
 - The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes
 - The measured light level falls below 50% of the calibrated light level for longer than 30 seconds

Closed Loop Daylight Calibration Details

It is best to calibrate indoor applications when there is a moderate to low level of daylight. If the daylight level is too high, it may be difficult to obtain the desired level of light at the task surface, even if the fixtures are completely OFF.

During calibration, use the **Calibrate All** feature and adjust slider bars to change the light level to the desired light level for each controlled fixture. Once all fixtures are adjusted, use a light meter on the surface to ensure the reading is in the desired range and then send the **Calibrate** command.

If the light level in the space is still too bright when electric lighting is fully dimmed, use available shading to adjust the amount of incoming daylight or postpone calibration until the amount of incoming daylight has decreased.

Loss of Communications Operation

The lighting will remain in its last known state. If the connected WaveLinX Low-Voltage Power Module has not communicated with the WaveLinX Area Controller for longer than approx. 15 minutes, the fixture will revert to its out-of-the-box behavior until communications are re-established.¹⁶¹

Operation upon Return of Power

Upon return of power, the device will return to the last known light level until communications are re-established between the Low-Voltage Power Module and the WaveLinX Area Controller.¹⁶² If communications cannot be established for more than approx. 15 minutes, loss of communications operation will begin.¹⁶¹

Factory Reset Instructions

To factory reset a single Low-Voltage Fixture with Integrated Sensor, use the WaveLinX App to delete the device from the app. The device should then display out-of-the-box behavior and may be paired as a new device. Note: All devices connected to the same Low-Voltage Power Module must be paired with the same WaveLinX Area Controller.

There is no manual method of factory resetting a single low-voltage device. Refer to the Low-Voltage Power Module's reference sheets for details on performing a factory reset on the Low-Voltage Power Module.¹⁶³

¹⁶¹ Devices with older firmware may go to 75% light output when occupied in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

¹⁶² If closed loop daylighting is enabled, when powering up the fixture may flash ON, then OFF, and then flash again as it resumes the last known level.

¹⁶³ Factory resetting a Low-Voltage Power Module will remove pairing and configuration for ALL Low-Voltage Devices that are connected to the Power Module.

WaveLinx LV Low-Voltage Fixture Reference Sheet

WaveLinx LV Low-Voltage Fixture



Features

- Class 2, low-voltage connection to a WaveLinx Low-Voltage Power Module for easy installation

Typical Applications

- Education, office, and other interior spaces

Models:

- **LV1:** (with no SLVPD1) Available option on many Cooper Lighting luminaires.

WaveLinx App Details:

- Default Device Name:
 - DM-LV
- Unassigned Device Category:
 - Dimmable

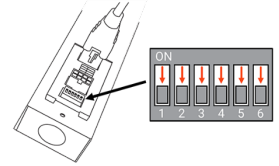
Icon Displayed in WaveLinx App:



The WaveLinx LV Low-Voltage Fixture contains an internal control module that communicates through the WaveLinx Low-Voltage Power Module to the WaveLinx system. The fixture can be easily configured to be controlled from WaveLinx devices using the WaveLinx App.

Important Installation Details:

- Low-Voltage Fixtures have onboard selector switches. Ensure that all fixture selector switches are in the OFF or down position (default).
- Always power down the WaveLinx Low-Voltage Power Module before connecting Low-Voltage Fixtures.



Out-of-the-Box Operation

- Once power is applied, the Low-Voltage Fixture turns ON and remains ON at a 100% light level.¹⁶⁴

Construction Area Default Operation

Once paired, the device operates as part of the Construction Area.

Assigned to an Area Default Operation

Once assigned to a created area, the device operates as part of the area.

- It will respond to the sensors in the area's occupancy set.
 - If occupied, the fixtures will turn ON to 50% (Scene 3).
 - The occupancy set default hold time is 20 minutes.
 - If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0).
- It will respond to any wallstations in the area per the default wallstation programming.

LED Operation

Not applicable. The WaveLinx Low-Voltage Fixture has no onboard LED indicator.


Pairing Information

The Low-Voltage Fixture will automatically pair when its WaveLinx Low-Voltage Power Module is paired with the WaveLinx Area Controller. If a Low-Voltage device is attached after the initial pairing was completed (always power down before the connection) or a Low-Voltage device is deleted in error from the WaveLinx App, manually refresh the pairing. Press and release (1 second press) the PAIR button on the WaveLinx Area Controller to start pairing mode. The Low-Voltage Power Module will refresh the connected devices to the WaveLinx Area Controller and will pair any unpaired devices.

Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

- Fixture dims to 10%.

Blink to Identify

Blink to Identify: Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. When placed in **Blink to Identify** mode, the fixture will turn ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds.

Loss of Communications Operation

The lighting will remain in its last known state. If the connected WaveLinx Low-Voltage Power Module has not communicated with the WaveLinx Area Controller for longer than approx. 15 minutes, the fixture will revert to its out-of-the-box behavior until communications are re-established.¹⁶⁴

Operation upon Return of Power

Upon return of power, the device will return to the last known light level until communications are re-established between the Low-Voltage Power Module and the WaveLinx Area Controller. If communications cannot be established for more than approx. 15 minutes, loss of communications operation will begin.¹⁶⁴

Factory Reset Instructions


To factory reset a single Low-Voltage Fixture, use the WaveLinx App to delete the device from the app. The device should then display out-of-the-box behavior and may be paired as a new device. Note: All devices connected to the same Low-Voltage Power Module must be paired with the same WaveLinx Area Controller.

There is no manual method of factory resetting a single low-voltage device. Refer to the Low-Voltage Power Module's reference sheets for details on performing a factory reset on the Low-Voltage Power Module.¹⁶⁵

¹⁶⁴ Devices with older firmware may go to 75% light output in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

¹⁶⁵ Factory resetting a Low-Voltage Power Module will remove pairing and configuration for ALL Low-Voltage Devices that are connected to the Power Module.

Additional Accessories: ISHH-01 Integrated Sensor Programming Remote Reference Sheet



Typical Applications

- Activate Pairing Mode in supported WaveLinx Devices
- Activate Reverse Identification in supported WaveLinx Devices

Models:

ISHH-01: Integrated Sensor Programming Remote

WaveLinx App Details:


- Not Applicable. Device is not displayed in the WaveLinx App.



Icon Displayed in WaveLinx App:


- Not Applicable: Device is not displayed in the WaveLinx App.

Place supported devices into pairing mode without the need to cycle power¹⁶⁶, or place devices into Reverse Identification Mode using the ISHH-01 Integrated Sensor Remote Control. The use of the remote streamlines system setup, removing the need to cycle power to place supported devices in pairing mode and simplifying reverse identification activation.


Refer to the device reference sheet to determine if the device supports the use of the ISHH-01.

Only the power button  on the ISHH-01 remote will be used in the WaveLinx system.

- **If a supported device is not paired with a WaveLinx Area Controller**, press  to place the device into pairing mode.
- **If a supported device is paired with a WaveLinx Area Controller**, press  to place the device into Reverse Identification Mode.



Only the power button will be used in the WaveLinx architecture



¹⁶⁶ Devices may require firmware update to activate pairing mode from the remote. Refer to the device reference sheet for that device type for further details.

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WaveLinx Device Archive

This section contains information for products that are no longer sold. These devices may be unsupported in the Version 14.1 architecture or may not support all the features.

WaveLinX Area Controller (Gen 1) Reference Sheet**WaveLinX Area Controller (Gen 1)****Features**

- Coordinates communication between WaveLinX Devices and the Mobile App
 - Built-in Wi-Fi for connection to WaveLinX Applications
 - Built-in Ethernet for PoE power and LAN connection
- Optionally connects to WaveLinX Core for use with:
 - CORE Applications
 - BMS,

Power:

- Powered from PoE or PoE Injector

Typical Applications

- Required for communication to WaveLinX Devices

Models:

WAC: WaveLinX Area Controller (Gen 1)

WaveLinX App Details:

NOTE: WAC Gen 1 is not directly supported in the WaveLinX Mobile App V14. When connecting to a WAC Gen 1, the app will open a separate browser window allowing configuration within the browser.

- Default Device Name:
 - CooperWAC-XX-XX

Icon Displayed:

A G1 icon will display at the top of the browser for a Gen 1 WaveLinX Area Controller

G1

NOTE: WAC Gen 1 is not directly supported in the WaveLinX Mobile App V14. When connecting to this version WAC, the app will open a separate browser window allowing configuration within the browser. Please refer to the manual for the WAC Gen 1's software version as version 14 features may not be supported.

The WaveLinX Area Controller (WAC) is a central communications coordinator for the WaveLinX system. A WaveLinX Area Controller (Gen 1) can coordinate communication to up to 150 devices within its wireless range (for best performance, connect up to 100 devices). **The WAC Gen 1 supports connection to PRO and LV devices. WaveLinX CAT devices are not supported.**

The WaveLinX Area Controller can operate as a stand-alone coordinator or may be connected to a building network with other WaveLinX Area Controllers to meet larger building requirements.

WAC (Gen 1) Details

Feature	Details
Supported Devices	The WAC (Gen 1) supports up to 150 WaveLinX Devices (for best performance, connect up to 100 devices). <ul style="list-style-type: none"> All devices may be WaveLinX PRO devices OR Up to 100 of the devices may be WaveLinX LV devices <ul style="list-style-type: none"> Example: 100 WaveLinX LV = 100 Devices Up to 50 of the devices may be actively using RTLS functionality <ul style="list-style-type: none"> Example: 50 RTLS Devices + 50 WaveLinX PRO = 100 Devices Example: 50 RTLS Devices + 40 WaveLinX LV + 10 WaveLinX PRO = 100 Devices
Areas	The WAC (Gen 1) supports up to 16 areas. <ul style="list-style-type: none"> 15 user defined areas plus 1 default construction area.
Zones	<ul style="list-style-type: none"> The WAC (Gen 1) creates two default dimming zones per area (Zone 1 and Zone 2), and one default receptacle zone per area (Zone 3). The WAC (Gen 1) supports up to 16 zones per area.
Scenes	The WAC (Gen 1) supports up to 16 scenes per area.
Occupancy Sets	The WAC (Gen 1) supports up to 6 occupancy sets per area.
Closed Loop Daylighting	The WAC (Gen 1) will automatically create a closed loop daylight set when an applicable device is paired.
Open Loop Daylighting	The WAC (Gen 1) supports up to 6 open loop daylight sets per area using the WaveLinX Ceiling Sensor or the WaveLinX Outdoor Lighting Control Module. Open Loop Daylighting must be programmed.

Out-of-the-Box

- Once power is applied, after approximately 1-2 minutes, the blue power/health LED on top of the unit and the 802.15.4 LED should illuminate.¹⁶⁷


Loss of Communications Operation

Please refer to the device reference sheets for the devices in the facility for the expected behavior upon loss of communications with the WaveLinX Area Controller.

Operation upon Return of Power

Upon return of power, after approximately a 1-2-minute power up period, the WaveLinX Area Controller will begin re-establishing connection with controlled devices. This process may take several minutes depending on the quantity of devices being controlled. Controlled devices will remain in their return of power state until the connection is re-established.

How to Place in Pairing Mode:

Method	Description
PAIR button	Press and release (1 second press) the PAIR button located on the rear panel of the WaveLinX Area Controller. 
Mobile App	<ul style="list-style-type: none"> Login to the WaveLinX Area Controller. From the menu, select Devices. With the WaveLinX Area Controller selected, tap Actions, or locate the actions bar at the bottom of the mobile device screen. Select Enable Discover Devices.

The blue 802.15.4 LED on the WaveLinX Area Controller will blink at a rate of one blink per second to indicate the WaveLinX Area Controller is in pairing mode.

The WaveLinX Area Controller pairing mode automatically times-out after 60 minutes. Manually exit by pressing and releasing (1 second press) the PAIR button or select **Disable Discover Devices** from the Mobile App.

¹⁶⁷ The green LAN LED may also illuminate if the controller is connected to a building LAN with a DHCP server. Other LEDs should remain OFF.

WaveLinX Area Controller (Gen 1) continued

**LED Operation**

Power/Health LED

Connection Port LEDs



WAN LED



LAN LED



Wi-Fi LED



not used



802.15.4 LED

After power is applied, wait approximately 1 minutes for the WaveLinX Area Controller to fully boot before reviewing the LED status.

LED	Color/Pattern	Description
Connection Port LEDs	Green LED ON/Flashing	The WaveLinX Area Controller is connected to the Ethernet and is connected to a 10/100Mb network.
	Orange LED ON/Flashing	The WaveLinX Area Controller is connected to the Ethernet and is connected to a Gigabyte network.
	OFF	There is no connection to the Ethernet
Power/Health LED	Solid BLUE	The WaveLinX Area Controller is powered from the PoE connection.
	OFF	There is no power on the PoE connection.
	Blinking BLUE	The WaveLinX Area Controller may be running a firmware update, may be running firmware updates on connected devices, or may be processing a factory reset.
WAN LED	OFF	Normal condition in stand-alone use. If used in a WaveLinX CORE system, the WAC has lost its connection to WaveLinX CORE.
	Solid GREEN	The WaveLinX Area Controller is connected to a WaveLinX CORE, OpenADR or a Third-Party system.
	Blinking GREEN	The connected system is communicating.
LAN LED	OFF	There is no connection or IP address from the building LAN.
	Solid GREEN	The WaveLinX Area Controller is connected to the building LAN and has received an IP address
	Blinking GREEN	There are communications from the building LAN connection.
Wi-Fi LED	OFF	There is no connection to the Wi-Fi.
	Solid BLUE	There is an active connection to the Wi-Fi and the unit has received an IP address.
	Blinking BLUE	There are communications through the Wi-Fi connection.
802.15.4 LED	Blinking BLUE	The WaveLinX Area Controller is in pairing mode.
	Solid BLUE	The 802.15.4 network communications are normal.
	OFF	The 802.15.4 LED should not be OFF. Verify unit is powered and has had time to fully power up (approx. 1-2 minutes).

WaveLinx Area Controller (Gen 1) continued

**WaveLinx Area Controller Pushbutton Functions**

The WaveLinx Area Controller pushbutton options allows for several administrative functions. These functions should be used with caution!



Function	PAIR button press	Device outcome	WAC LED feedback
Enter Pairing Mode	1 press (1 second)	Paired PRO and LV devices will exhibit paired behavior described in the device reference sheets. Unpaired devices can pair with the WaveLinx Area Controller if they are in pairing mode.	802.15.4 LED flashes
Exit Pairing Mode (if pairing mode is still active)	1 press (1 second)	Paired PRO and LV devices will start operation within the construction grouping. Lighting still in the default construction area will turn ON to a 100% level or operate from paired wallstations and occupancy sensor controls.	802.15.4 LED ON steady
Remove Unassigned Devices	Press and hold for 4 seconds	Devices still in the default construction area will leave the WaveLinx network.	No LED feedback
Authorization Reset	Press and hold for 20 seconds	No effect on devices. The following data will be cleared and replaced with factory defaults: <ul style="list-style-type: none"> • Admin user accounts • User-uploaded custom certificates • Network configuration • Wi-Fi settings • Ethernet settings • Wi-Fi access point settings 	After the 20 second press, the Wi-Fi LED will begin flashing. As the command continues to process, different combinations of LEDs may flash or turn ON and OFF, including the power/health LED. After approximately 2-3 minutes, the power/health LED and blue 802.15.4 LED will be ON steady indicating that the process is complete (other LEDs may be ON depending upon connections).
Factory Reset	Power cycle the WaveLinx Area Controller and wait approx. 2 to 4 minutes for the reboot to occur. The power/health LED will be ON, and the 802.15.4 LED illuminated when the reboot is complete (other LEDs may be ON depending on connections). Within 15 minutes of the power cycle, press and hold the PAIR button for 30 seconds.	All programming will be cleared for the WaveLinx Area Controller and reset to factory defaults including: <ul style="list-style-type: none"> • Removing all 802.15.4 device pairing • All user accounts • Clearing user-uploaded custom certificates • Network configuration including: <ul style="list-style-type: none"> • Wi-Fi settings • Ethernet settings • Wi-Fi access point settings • Clearing programming including area and zone designations • Resetting WAC name to default 	During the 30 second press, the Wi-Fi LED will start flashing for approx. 10 seconds, and then all LEDs start flashing at the 30 second mark. As the command continues to process, different combinations of LEDs may flash or turn ON and OFF, including the power/health LED. After approximately 2-3 minutes, the power/health LED and blue 802.15.4 LED will be ON steady indicating that the process is complete (other LEDs may be ON depending upon connections).

The WaveLinx Area Controller Reset button issues a soft reset to the WaveLinx Area Controller. A soft reset will not impact the WaveLinx Area Controller's settings.

Initial Configuration Steps for the WaveLinX Area Controller (Gen 1)

WaveLinX Area Controller (Gen 1) continued



Initial Configuration Steps for WAC (Gen 1)

The steps in this section should be completed before pairing devices to the WaveLinX Area Controller.

Use this section to:

- Connect to the WaveLinX Area Controller Webpage
- Set the Clock Parameters
- Set the IP address of the WaveLinX Area Controller

Step 1: Connect to the WaveLinX Area Controller Webpage

The steps in this section assume that the WaveLinX Area Controller has not been connected to a building network and is still in its factory default state for wireless name and username/password. If the WaveLinX Area Controller is connected to the building network, or the wireless name and password has been changed from the default, please refer to the network administrator for access information.

1: Make sure that the computer being used has wireless connectivity and has a current version web browser installed. The WaveLinX internal webpage configuration is accessed using the web browser.

2: Go to the location of the WaveLinX Area Controller. Verify that the unit is powered and has the Blue Power/Health LED and the 802.15.4 LED illuminated (other LEDs may also be illuminated depending on connections).

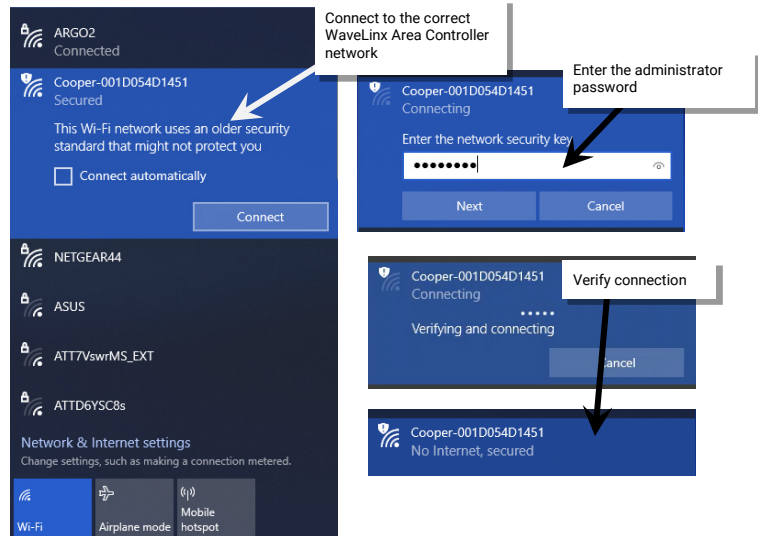
On the front plate of the WaveLinX Area Controller below the blue power/health LED, locate the label with the MAC ID. Make note of the MAC ID shown.



3: Ensure that the computer's Wi-Fi is active, and then navigate to the list of available Wi-Fi networks. Locate the Wi-Fi network with the name Cooper-XXXXXXXXXXXX (where X is a string of letters and numbers).

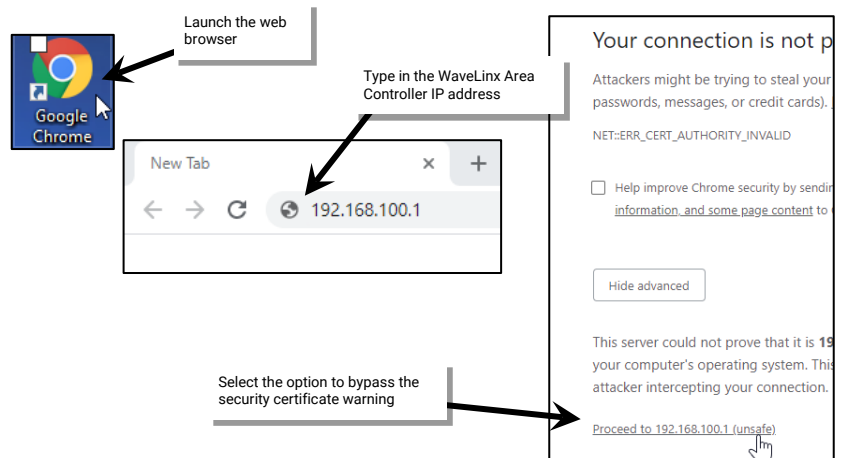
Select the Wi-Fi network Cooper-XXXXXXXXXXXX where the X characters match the MAC ID noted in the last step. The last number will be one digit higher than the MAC ID noted.

Enter the password wclAdmin when prompted matching the case shown and join the network



4: Open the web browser and enter the IP address of the WaveLinX Area Controller in the address bar. (The default IP address is 192.168.100.1.)

The first time the WaveLinX Area Controller is accessed, the browser may display message windows regarding the site security certificate. The display and wording of these messages may differ between web browsers. Locate the option to bypass the warning to proceed to the site.



WaveLinx Area Controller (Gen 1) continued



5: In the log in screen, enter the username and password for the administrator user.¹⁶⁸

- Default Username: **WclAdmin**
- Default Password: **wclAdmin**

6: If this is the first login, the system will force a password change. When prompted, enter a new password for the administrative user.

Set a complex password when changing passwords, making sure it is something that can be remembered.

IMPORTANT! REMEMBER THE NEW PASSWORD AS IT WILL BE USED FOR ALL FUTURE ADMINISTRATOR LOGINS FOR THE INTERNAL WEBPAGE AND FOR THE MOBILE APPLICATION.

Step 2: Set the WaveLinx Area Controller Clock

The WaveLinx Area Controller clock settings need to be set for the site. This includes the location, time, date, and time zone settings. These settings are found within the system webpage. In the event of a power loss, the time and date will be retained for up to 48 hours. If power is lost for longer than a 48-hour period, the settings will need to be refreshed once power is restored.

1: In the WaveLinx Area Controller's webpage, select the **System** page and then select the pencil icon in the location section to open it for editing.

2: Set the location using either the auto location feature or by manually entering the coordinates.

- Auto-Location: Can be used if the computer is connected to a network that allows for GPS location. Fields will automatically populate with the coordinates.
- Manually enter: Manually enter the coordinates after determining the latitude and longitude for the site.

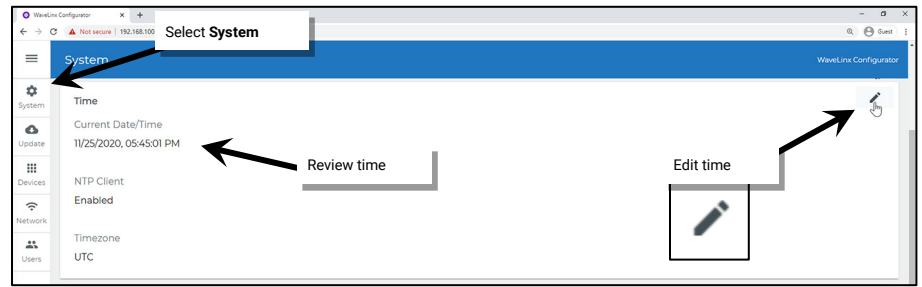
Select **UPDATE** to save the coordinates. A success message will appear once completed.

¹⁶⁸ If the username and password have been changed, use the updated username or password when logging in.

WaveLinx Area Controller (Gen 1) continued



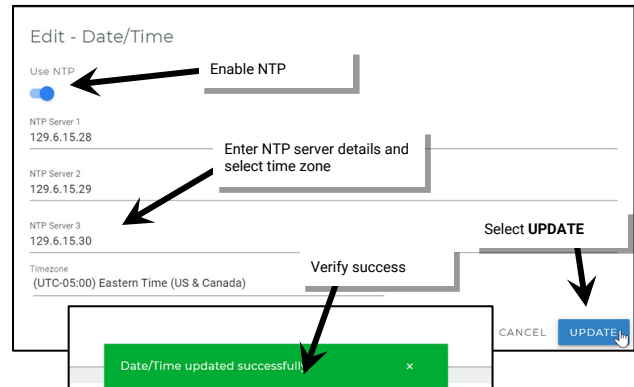
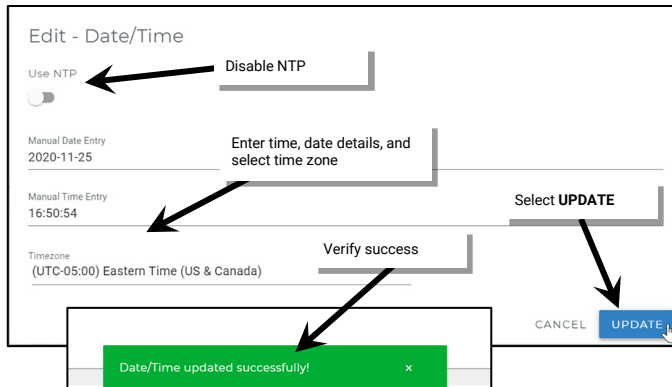
3: In the system page, review the current time, date, and time zone. If they are not correct, select the pencil icon to edit.



4: Update the time information by either entering the data manually or entering the NTP server details.

- **Enter manually:** Disable the **Use NTP** slider and enter the date (year-month-day YYYY-MM-DD format) and time fields (Use 24-hour military clock format to distinguish AM from PM). Click the time zone drop down and select the proper time zone.
- **Use NTP:** If the WaveLinx Area Controller is connected to a building network that uses a network time protocol (NTP) server, enable the **Use NTP** slider and fill in the NTP server address details. NTP servers do not set the time zone field. Manually set the time zone using the provided time zone drop down.

Click **UPDATE** to save the coordinates to the WaveLinx Area Controller. A success message will appear once completed.



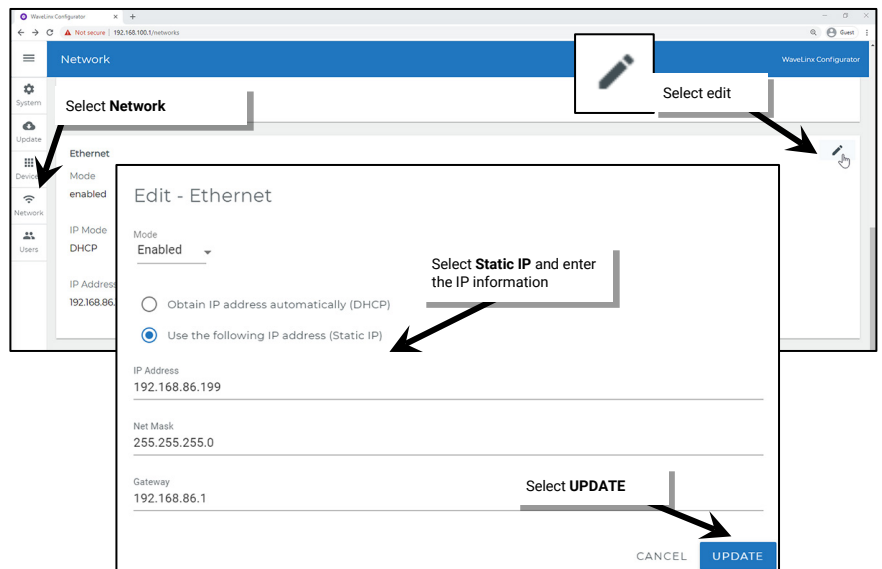
Step 3: Set the IP Address of the WaveLinx Area Controller

The WaveLinx Area Controller is set to DHCP by default. If using DHCP for IP addressing, skip this step. Follow the steps below only if assigning a static IP address.

1: Select the **Network** page and then click on the pencil icon in the **Ethernet** section to edit.

2: Disable **DHCP** and manually enter the desired IP address, subnet mask and default gateway. Select **UPDATE** to send the settings to the WaveLinx Area Controller.

Verify that the WaveLinx Area Controller is properly connected to the Building LAN.



The WaveLinx Area Controller initial setup is complete.

WaveLinx PRO Universal Voltage Dimming Switchpack with Emergency Reference Sheet**WaveLinx PRO Universal Voltage Dimming Switchpack with Emergency****General Features**

- Universal voltage input (120V-347V)
- Output control (120V-347V):
 - Electronic ballast/driver 16A
 - General purpose (receptacle) 20A
 - Motor loads up to 1.5 HP (120VAC)
- Class 2, 0-10V dimming output
 - Sinks up to 120mA (approximately 60 ballasts/drivers [2mA each])
- IEEE 802.15.4, (router and end point)

Special Features

- Control of Emergency Lighting

Typical Applications

- Emergency fixture control
- Office, education, and other indoor applications

Models:

- **WSP-UV-010-EM:** Universal Voltage Dimming Switchpack with Emergency

WaveLinx App Details:

- Default Device Name:
 - Relay Switchpack Emergency
- Unassigned Device Category:
 - Relay Switch Pack

Icon Displayed in WaveLinx App:

Use the WaveLinx PRO Universal Voltage Dimming Switchpack with Emergency to wirelessly control Emergency lighting, including switched or 0-10V emergency lighting loads.

Out-of-the-Box Operation

Once power is applied:

- Connected loads will turn ON and 0-10V dimmable loads will go to 100%.
- The onboard commissioning button can be pressed (less than 4 seconds) to turn load OFF and ON.
- White LED on switchpack indicates load state.

Construction Area Default Operation

Once paired, the device operates as part of the Construction Area.	Once assigned to a created area, the device operates as part of the area.
<ul style="list-style-type: none"> • It will respond to the sensors in the area's occupancy set. <ul style="list-style-type: none"> • If occupied, the fixtures will turn ON to 50% (Scene 3). • The occupancy set default hold time is 20 minutes. • If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0). • It will respond to any wallstations in the area per the default wallstation programming. 	

Assigned to an Area Default Operation**LED Operation**

LED conditions	Meaning
ON (white)	The device relay is closed
OFF	The device relay is opened
Flashes ON and OFF approximately 1 time per second for 10 seconds	Onboard commissioning button has been pressed for longer than 4 seconds, placing the device in pairing mode.

How to Place in Pairing Mode:


Method	Description
Power Cycle Method ¹⁶⁹	Using the circuit breaker, perform the following power cycle sequence: <ul style="list-style-type: none"> • Turn OFF power for 30 seconds, and then turn ON power for 5 seconds • Turn OFF power for 30 seconds, and then turn ON power and leave ON
Onboard Commissioning Button	Press the onboard commissioning button for more than 4 seconds. The onboard LED will blink for 10 seconds to indicate the device has entered pairing mode.

The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinx Area Controller is not made. Only unpaired devices will enter pairing mode with these methods.

Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)

- Connected loads will turn ON and 0-10V dimmable loads will go to 10%.

Blink to Identify

Use the WaveLinx App's **Blink to Identify** feature to identify the device. Select  in a device row to place the device in **Blink to Identify** mode. The icon will appear to pulse and a load matching that type should respond. When placed in **Blink to Identify** mode, the connected fixture(s) will turn ON for 1 second, turn OFF for 1 second and repeat this cycle for 15 seconds.

¹⁶⁹ Devices with older firmware (prior to WSP-UV 1.01.05.00) may only require a single power cycle to place in pairing mode (30 seconds OFF, and then turn back ON).

WaveLinX PRO Universal Voltage Dimming Switchpack with Emergency continued



Loss of Communications Operation

If the device has not communicated with the WaveLinX Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior until communications are re-established.

Emergency Mode Operation & Operation upon Return of Power

To ensure proper operation for Emergency Mode:

- The WSP-UV-010-EM **MUST** be wired to an emergency circuit
- The paired WaveLinX Area Controller **MUST** be powered from a normal circuit. Do not place the WaveLinX Area Controller on a UPS backup or other emergency backup power supply.

If the WSP-UV-010-EM loses power for more than 30 milliseconds, the device will turn ON to 100% output. The switchpack will ignore all WaveLinX system messages for 20 seconds and then will try to communicate with the WaveLinX Area Controller. The switchpack will remain in Emergency Mode until communications are re-established. It will then go to the last known light level and resume normal operation.

Factory Reset Instructions




CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.

- Cycle power the device's circuit **six times** to (switch **OFF 4 seconds** | **ON 4 seconds** – **6th time leave ON**).

This removes pairing for ALL devices of this type on the affected circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.¹⁷⁰

¹⁷⁰ The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

WaveLinX PRO Wireless Fixture Reference Sheet

WaveLinX PRO Wireless Fixture									
 <p>Features</p> <ul style="list-style-type: none"> IEEE 802.15.4, (router and end point) <p>Typical Applications</p> <ul style="list-style-type: none"> Interior spaces where individual fixture sensor controls are not needed <p>Models:</p> <ul style="list-style-type: none"> WN: WaveLinX Wireless Fixture, No Sensor <p>WaveLinX App Details:</p> <ul style="list-style-type: none"> Default Device Name: <ul style="list-style-type: none"> Dimmable Light Unassigned Device Category: <ul style="list-style-type: none"> Dimmable <p>Icon Displayed in WaveLinX App:</p> 	<p>The WaveLinX PRO Wireless Fixture is preconfigured with a wireless radio <u>without</u> an Integrated Sensor providing wireless control within the light fixture to reduce wiring, design, and installation time. The fixture can be easily configured to be controlled from WaveLinX devices using the WaveLinX App.</p> <p>Out-of-the-Box Operation</p> <p>Once power is applied, the attached fixture turns ON and remains ON at a 100% light level.¹⁷¹</p> <table border="1"> <thead> <tr> <th>Construction Area Default Operation</th><th>Assigned to an Area Default Operation</th></tr> </thead> <tbody> <tr> <td>Once paired, the device operates as part of the Construction Area.</td><td>Once assigned to a created area, the device operates as part of the area.</td></tr> </tbody> </table> <ul style="list-style-type: none"> It will respond to the sensors in the area's occupancy set. <ul style="list-style-type: none"> If occupied, the fixtures will turn ON to 50% (Scene 3). The occupancy set default hold time is 20 minutes. If the space remains unoccupied for 20 minutes, the fixture will dim to 0% (Scene 0). It will respond to any wallstations in the area per the default wallstation programming. <p>LED Operation</p> <p>Not applicable. The WaveLinX Wireless Fixture has no onboard LED indicator.</p> <p>How to Place in Pairing Mode:</p> <table border="1"> <thead> <tr> <th>Method</th><th>Description</th></tr> </thead> <tbody> <tr> <td>Power Cycle Method</td><td>Cycle the power once (switch OFF and then ON) using the circuit breakers. The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode on the power cycle.</td></tr> </tbody> </table> <p>Successful Paired Device Behavior: (While WAC is still in or placed in pairing mode)</p> <ul style="list-style-type: none"> Fixture dims to 10%. <p>Blink to Identify</p> <p>Use the WaveLinX App's Blink to Identify feature to identify the device. Select  in a device row to place the device in Blink to Identify mode. The icon will appear to pulse and a load matching that type should respond. When placed in Blink to Identify mode, the fixture will turn ON for 1 second, turn OFF for 1 second and will repeat this cycle for 15 seconds.</p> <p>Loss of Communications Operation</p> <p>If the device has not communicated with the WaveLinX Area Controller for longer than approx. 15 minutes, it will revert to its out-of-the-box behavior until communications are re-established.¹⁷¹</p> <p>Operation upon Return of Power</p> <p>Upon return of power, the fixture will resume its last known light level. If not able to communicate with the WaveLinX Area Controller for more than approx. 15 minutes, loss of communications operation will begin.¹⁷¹</p> <p>Factory Reset Instructions</p> <p>CAUTION: The factory reset will set the device back to factory settings (out-of-the-box behavior) removing pairing and programmed settings.</p> <ul style="list-style-type: none"> Cycle power the device's circuit six times to (switch OFF 4 seconds ON 4 seconds – 6th time leave ON). <p>This removes pairing for ALL devices of this type on the affected circuit. After a brief period, the device should exhibit out-of-the-box behavior and may be paired as a new device.¹⁷²</p>	Construction Area Default Operation	Assigned to an Area Default Operation	Once paired, the device operates as part of the Construction Area.	Once assigned to a created area, the device operates as part of the area.	Method	Description	Power Cycle Method	Cycle the power once (switch OFF and then ON) using the circuit breakers. The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode on the power cycle.
Construction Area Default Operation	Assigned to an Area Default Operation								
Once paired, the device operates as part of the Construction Area.	Once assigned to a created area, the device operates as part of the area.								
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Power Cycle Method	Cycle the power once (switch OFF and then ON) using the circuit breakers. The device will stay in pairing mode for 60 minutes and then time out automatically if a connection with WaveLinX Area Controller is not made. Only unpaired devices will enter pairing mode on the power cycle.								

¹⁷¹ Devices with older firmware may go to 75% light output in out-of-the-box operation and may take up to 1 hour to enter loss of communication operation.

¹⁷² The device may flash the light to indicate the reset was successful. If the light was ON prior to the reset, the light will flash twice then remain ON. If OFF prior to reset, the flash behavior may not be observed, but lighting will turn ON.

Preparing the WaveLinX Apps for First Use

Either the WaveLinX Mobile App or the WaveLinX Area Controller (WAC) Lighting App¹⁷³ can be used to pair/add, organize, and program WaveLinX PRO, WaveLinX CAT, and WaveLinX LV devices. This section discusses the basics of preparing to use either the WaveLinX Mobile App or the WaveLinX WAC Lighting App to administer the WaveLinX system.

Preparing to use the WaveLinX Mobile App

To use the WaveLinX Mobile App to administer WaveLinX PRO, WaveLinX CAT, and WaveLinX LV devices, users of the application must first download the application, and then sign in with a registered user account.

Download and Install the WaveLinX Mobile App

The WaveLinX Mobile App is supported on mobile devices running iOS 14+ or Android™ 11+ operating systems.

Download the latest version of the WaveLinX Mobile App on the App Store® or get it on Google Play™. Install the mobile app on a smartphone or tablet.



Once installed, the Mobile App can be launched by tapping the provided icon.

Register for a WaveLinX Mobile App Account

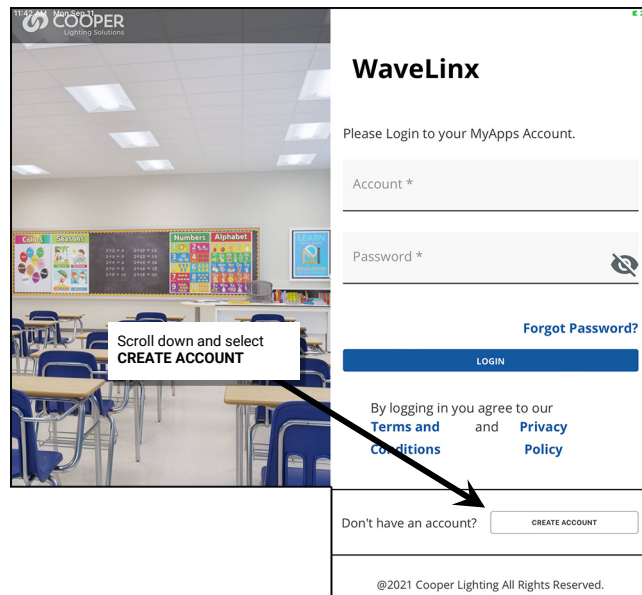
Before initial use, the user must register for a Cooper MyApps Account. **An internet connection is required for the initial registration.** After registration, the user can log in to the MyApps Account and then use the application without an internet connection if they do not log out. Once logged in, the WaveLinX Mobile App can communicate with the WaveLinX system.

To register for a Cooper MyApps Account:

- 1: Tap on the WaveLinX App icon to launch the WaveLinX Mobile App.



- 2: When prompted to login, select the option to **CREATE ACCOUNT**. Scroll down if necessary.



¹⁷³ This feature requires the use of a WaveLinX Area Controller WAC2 (Gen 2) with the minimum software version 11.x.x.x.

- 3: Enter a valid email address, select options for electronic messages, and enter the desired password (This password is for the MyApps Account and is different from the password assigned to a WaveLinx Area Controller). Tap **CONTINUE**.

COOPER
Lighting Solutions

ACCOUNT REGISTRATION

Please enter your email address and click "Continue" to receive for registration.

Email Address* *
joan.t.smith7@gmail.com

☒ I agree to receive electronic messages from Cooper about updates (security, new features, offers) which pertain to the system installed at my facility. I may unsubscribe at any time.

Password should have:

- Minimum 8 and maximum 16 characters.
- Minimum 1 number.
- Minimum 1 special character from this set [!@#%&'*].
- Minimum 1 upper case.
- Minimum 1 lower case.
- No Spaces.

Password *

Confirm password *

Terms and Conditions and Privacy Policy

Select CONTINUE

CONTINUE →

- 4: An email verification code will be sent to the email address entered. Enter the provided code, and then tap **CONTINUE**. (If the code is not received, click **RE-SEND CODE** and check the email spam folder.)

COOPER
Lighting Solutions

ACCOUNT REGISTRATION

Enter the verification code sent to joan.t.smith7@gmail.com . Click "Continue" to verify your account. To receive a code, click on "Re-Send Code".

Verification Code
789626

Did not receive the code? Click on "RE-SEND CODE" to receive a code.

Terms and Conditions and Privacy Policy

← BACK

Select CONTINUE

CONTINUE →

no-reply@cooperlighting.com
To: joan.t.smith7@gmail.com >

12:10 PM

Signup Verification

COOPER
Lighting Solutions

Signup Verification Code 789626

Please enter your verification code to complete your registration. Your code will expire within 4 hours.

- 5: Enter the requested details and then click **CONTINUE** to advance the screen.

COOPER
Lighting Solutions

USER DETAILS

Please provide more information about yourself.

Required *

Employer * *
ABC Company

Title * *
Facility Manager

First Name* *
Joan

Last Name* *
Smith

Phone Number*
+1 1112223333

Terms and Conditions and Privacy Policy

Select CONTINUE

CONTINUE →

COOPER
Lighting Solutions

Required *

Building Name* *
ABC Company Headquarters

Building Type* *
Office

Lighting System* *
WaveLinx Wireless

Address Line 1* *
555 ABC Lane

Address Line 2

City* *
Atlanta

State* *
GA

Zip/Postal Code* *
30301

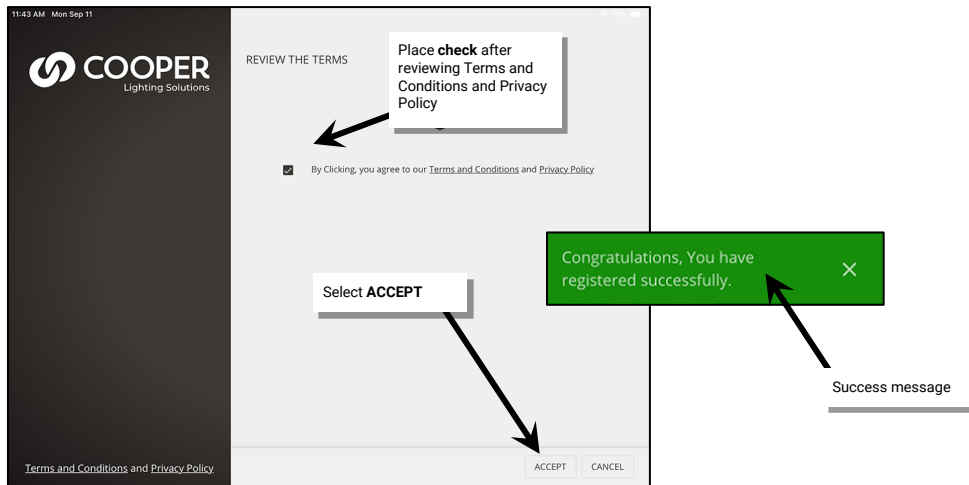
Country* *
United States

Terms and Conditions and Privacy Policy

Select CONTINUE

CONTINUE →

6: Review the Terms and Conditions and Privacy Policy, tap the **checkbox** to agree, and then tap **ACCEPT** to finish registration. Confirmation of registration will appear.

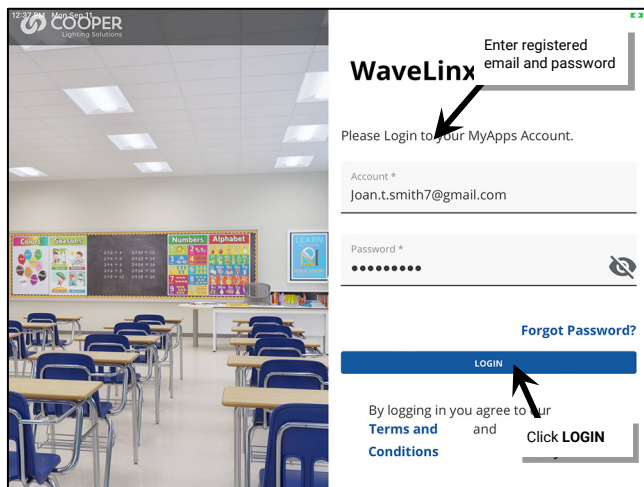


To manage the MyApps Account or to obtain firmware updates, use a web browser to login to <https://myapps.cooperlighting.com>. Enter the registered email address and password.

Login to the WaveLinX Mobile App

After registering for a MyApps Account, login to the WaveLinX Mobile App. **An internet connection is required for the initial login.** After login, the application will operate without an internet connection unless the user logs out. The WaveLinX Mobile App can communicate with any WaveLinX Area Controller.

1: When prompted to login, enter the registered email address and account password and then tap **LOGIN**.



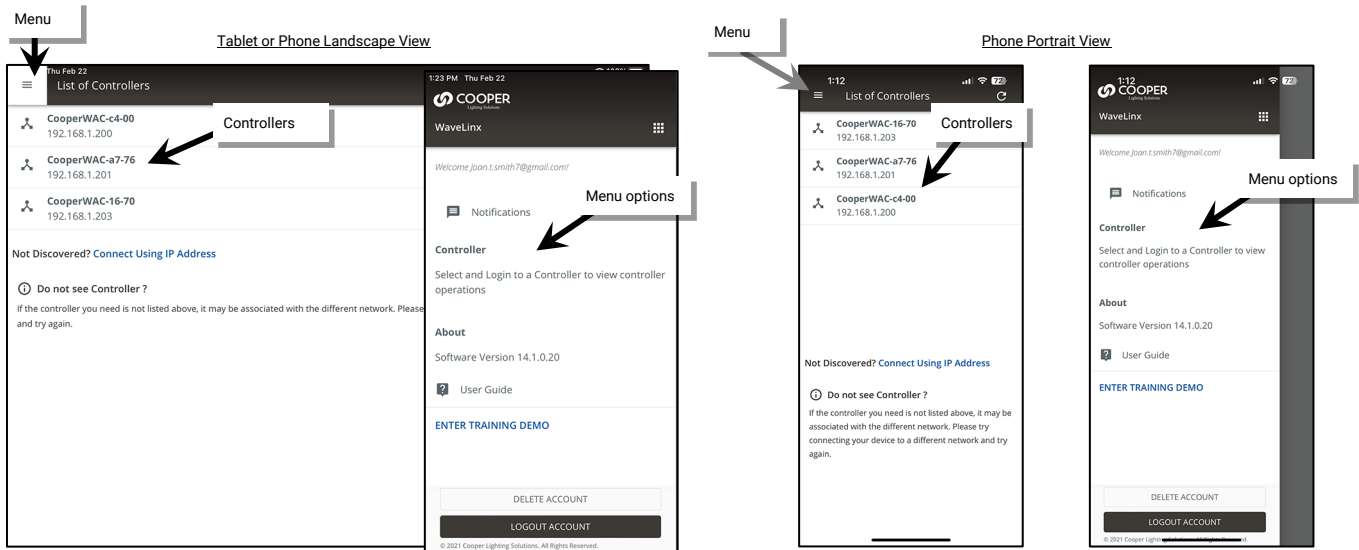
2: The first time the app opens, grant permission to allow network access and notifications to ensure that the app functions properly.

3: The application is now logged in and ready for use with the WaveLinX system with the **List of Controllers** screen displayed. The app will remain logged in, even if closed, unless the user logs out of the application.




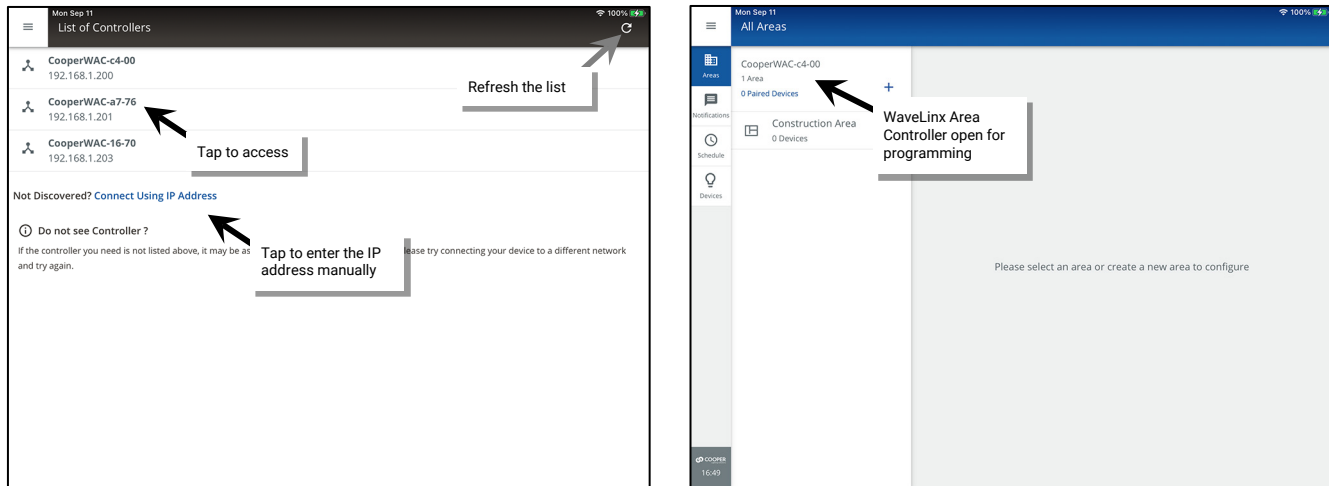
Using the List of Controllers Screen

Once logged in to the Mobile App, the **List of Controllers** will appear. The main function of the screen is to allow access to the programming of WaveLinX Area Controllers. Additional screen options include access to Notifications and WaveLinX Demonstration Mode.

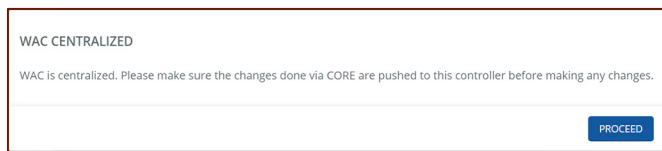


The **List of Controllers** is used to open a WaveLinX Area Controller for programming. Multiple WaveLinX Area Controllers may appear if the site has multiple connected to same network that the mobile device is accessing.

To display the programming for the WaveLinX Area Controller, tap on the WaveLinX Area Controller in the list and then enter the login credentials. If no WaveLinX Area Controllers are listed, check that the correct Wi-Fi network is selected and then click **refresh**  to restart the search. If needed, manually enter the WaveLinX Area Controller's IP address.

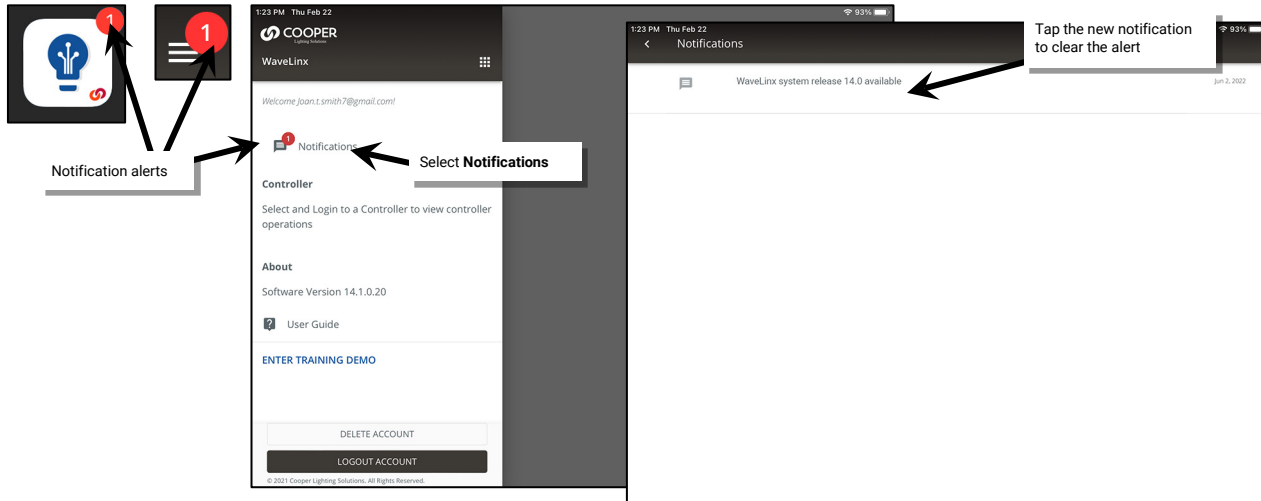


When logging in, if the message displays **WAC CENTRALIZED**, the WaveLinX Area Controller has been added to the WaveLinX CORE System for administration. Before proceeding, make certain to sync the programming from WaveLinX CORE to the WAC before any changes are made. Once changes are complete, make certain that the WAC changes are synced to WaveLinX CORE.



Accessing Notifications

The notifications screen will be used to display notifications that have been pushed the mobile device from the user's MyApps account. Notifications may be issued with new releases or other Cooper Lighting Solutions communications. If app notifications are allowed, notifications will display on the mobile device. New notification alerts will also be indicated by a symbol over the WaveLinX Mobile App icon and the app menu. To review and acknowledge the notification alert, from the menu, select **Notifications** and then tap the new notification.




Using Demonstration Mode

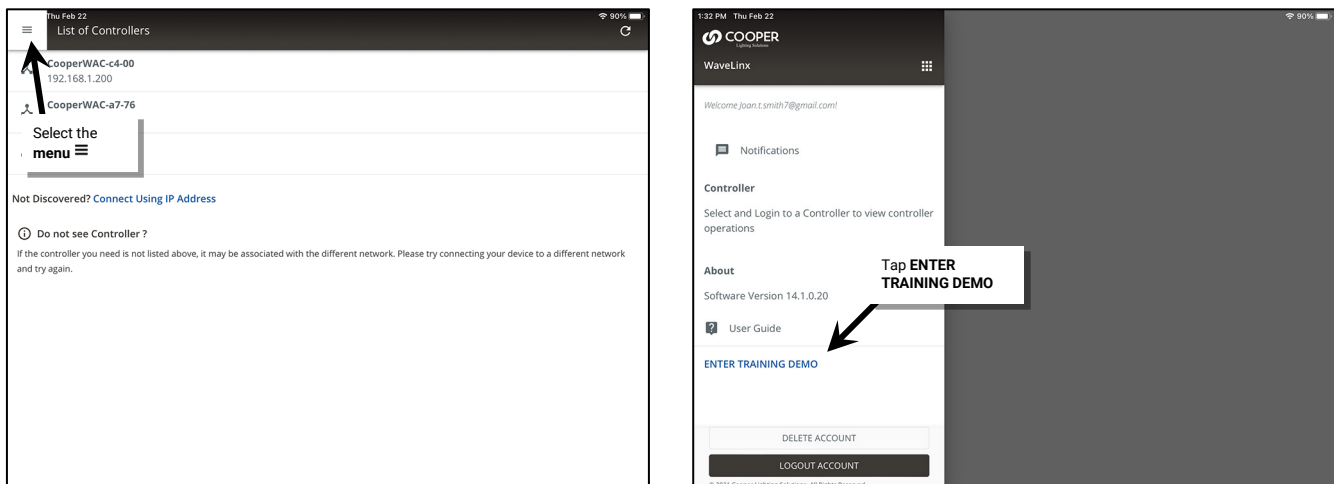
Place the WaveLinX Mobile App in **Demonstration Mode** to learn how to use the Mobile App without needing to be connected to a system. The demonstration uses a basic database containing several WaveLinX Area Controllers, each with a selection of paired devices.

The demonstration mode operates offline and does not require access to a WaveLinX Area Controller or WaveLinX devices.

Entering Demonstration Mode

To place the WaveLinX Mobile App in **Demonstration Mode**:

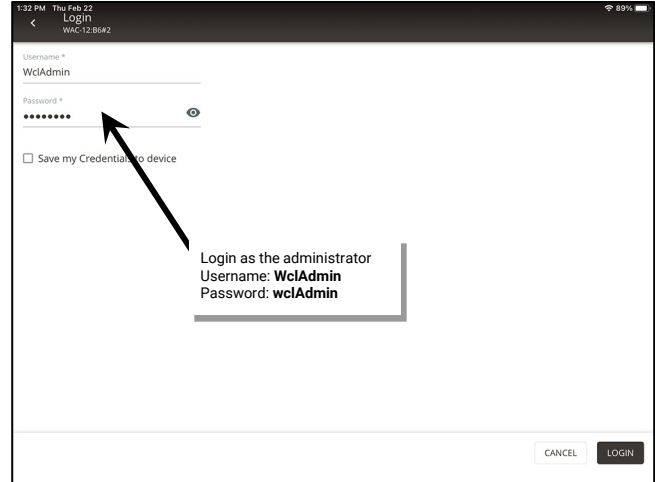
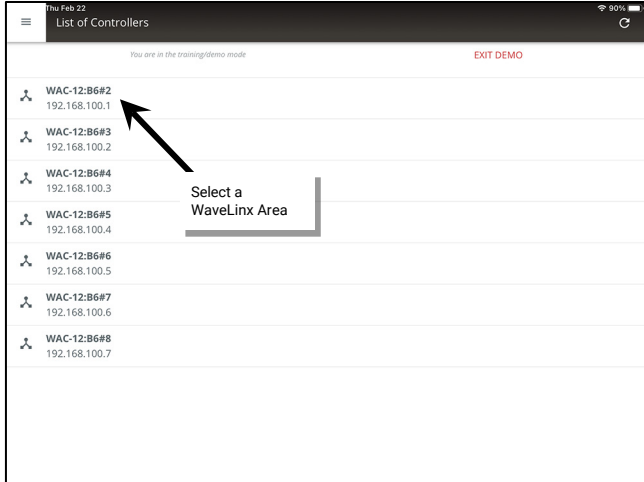
- 1: Open the Mobile App but do not login to a WaveLinX Area Controller (If already logged in to a WaveLinX Area Controller, tap the menu and select **WAC Logout**).
- 2: From the **List of Controllers** screen, tap menu  and select **ENTER TRAINING DEMO**.



3: Tap to open one of the WaveLinX Area Controllers.

4: When prompted to enter a username and password, enter the administrator credentials:

- Default Username: **WclAdmin**
- Default Password: **wclAdmin**



The demo may require changing the default WaveLinX Area Controller password. Once the password is changed, login with the new credentials to open the database and begin configuring the demonstration site.

Resetting the Demonstration Database

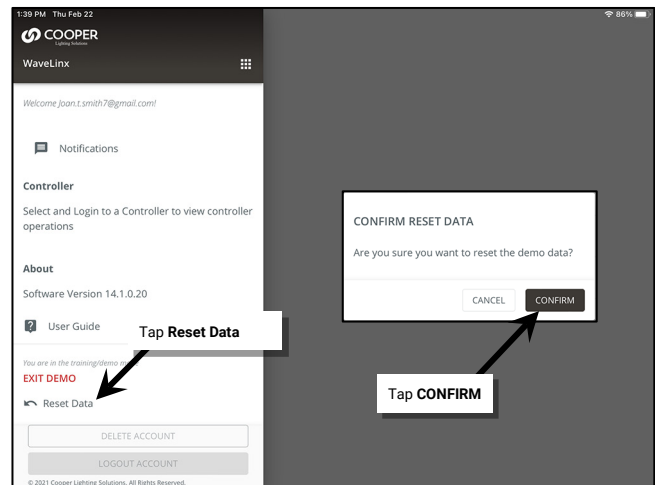
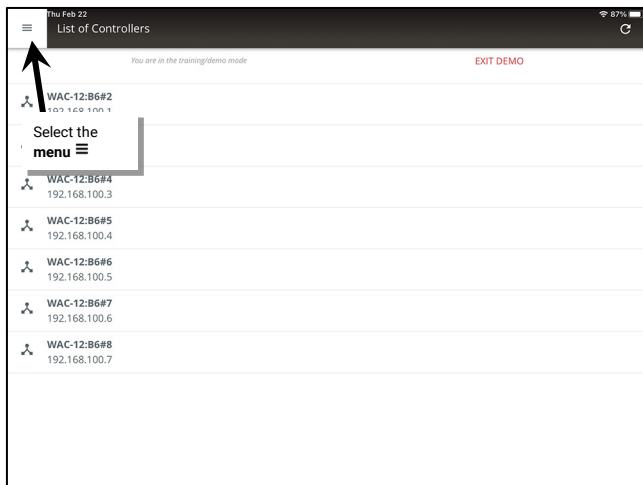
After using the demonstration mode, if demo devices have been reorganized, reprogrammed, or deleted, they can be restored by resetting the demonstration database.

To reset the demonstration database:

1: If not already in, enter **Demonstration Mode** and navigate to the **List of Controllers**.

2: Tap **menu** ≡ and select **Reset Data**.

3: When prompted, confirm the data reset.

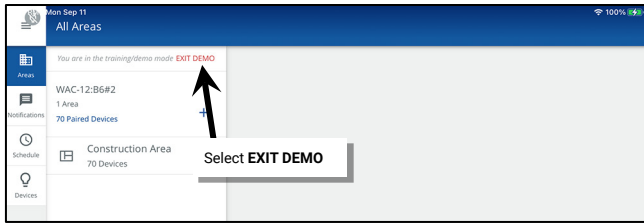


The demonstration data will be back in its original format.

Exiting Demonstration Mode

To exit **Demonstration Mode** and revert to **Live mode**.

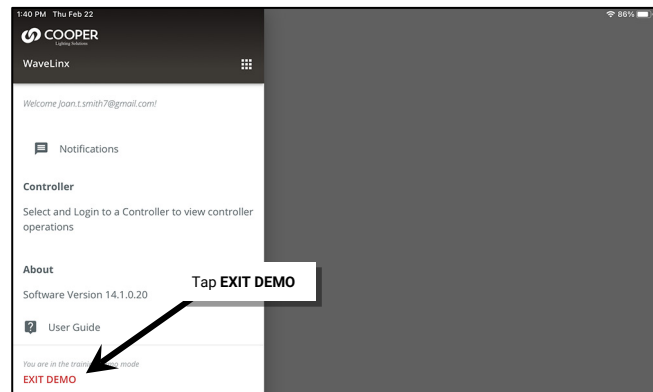
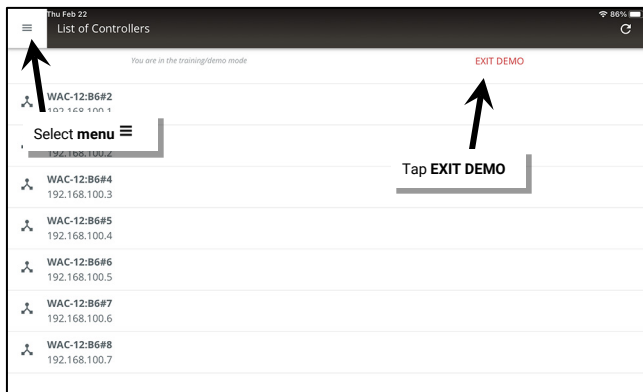
1: If in the demo and logged into a WaveLinx Area Controller, select **EXIT DEMO**.



OR:

1: Open the Mobile App but do not login to a WaveLinx Area Controller (If already logged in to a WaveLinx Area Controller, tap menu and select **WAC Logout**).

2: Tap **EXIT DEMO** at the top of the **List of Controllers** screen or tap menu ≡ and select **EXIT DEMO**.



The demo will exit. The Mobile App will now allow access to WaveLinx Area Controllers and WaveLinx devices at the facility.

WaveLinx Area Controller Login using the WaveLinx Mobile App

The WaveLinx Mobile App must make a connection to a WaveLinx Area Controller to allow the app to administer the system. This section describes how to make a communication connection from the WaveLinx Mobile App to a WaveLinx Area Controller, logging in as the administrative user. This procedure assumes that the user has previously registered for a MyApps account and has logged into the application.

Before using the WaveLinx Mobile App, perform the initial setup of the WaveLinx Area Controller recommended in "Initial Configuration Steps for the WaveLinx Area Controller 2 (Gen 2)" on page 18. Once these steps are completed, proceed with the steps below.

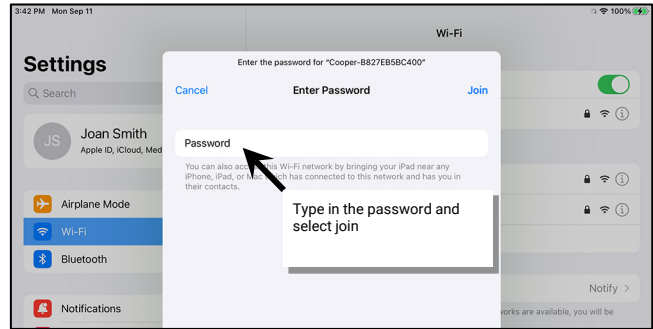
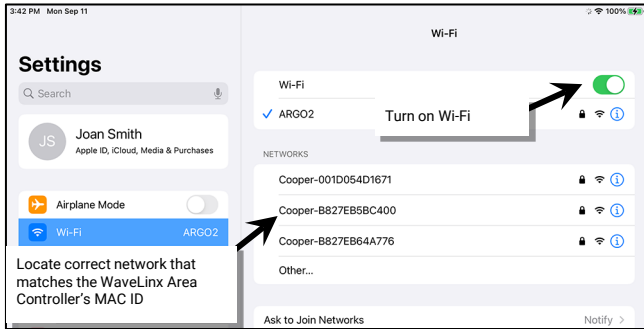
The below steps assume that during the initial configuration steps, the WaveLinx Area Controller default password and network key have been updated from the defaults. The steps use the WaveLinx Area Controller's built-in Wi-Fi access to connect to the mobile app. If the WaveLinx Area Controller has been installed into the facility network and the mobile device has access, connect the mobile device to facility network to access the WaveLinx Area Controller. Refer to the network administrator for access information, the WaveLinx Area Controller's IP address, and the credentials to use when logging in.

For security purposes, change the default password. Users should set a complex password when changing passwords. See "Modifying Existing User Accounts and Passwords" on page 297 for this procedure.

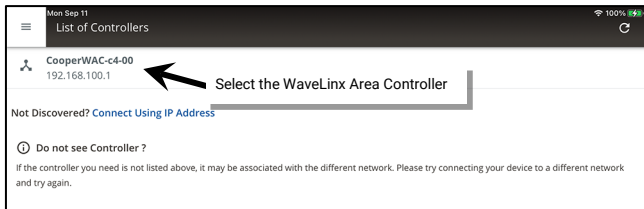
1: If there is more than one WaveLinx Area Controller in the facility, locate the label with the MAC ID on the top face of the WaveLinx Area Controller. Make note of the MAC ID shown.



- 2: Turn on the smartphone or tablet Wi-Fi. Locate the Wi-Fi network named Cooper-XXXXXXXXXX (where X is a string of letters and numbers). Select the network where the X characters match the MAC ID noted in the previous step. When prompted, enter the Wi-Fi password assigned to the WaveLinx Area Controller during the initial setup. (If still in the default configuration, use the default password, **wclAdmin**, to join the network.)



- 3: Tap on the WaveLinx icon to launch the Mobile App.
- 4: Once the app opens, the WaveLinx Area Controller should display. Tap on the WaveLinx Area Controller to open the connection. Depending on the controller version, follow the appropriate steps listed below.



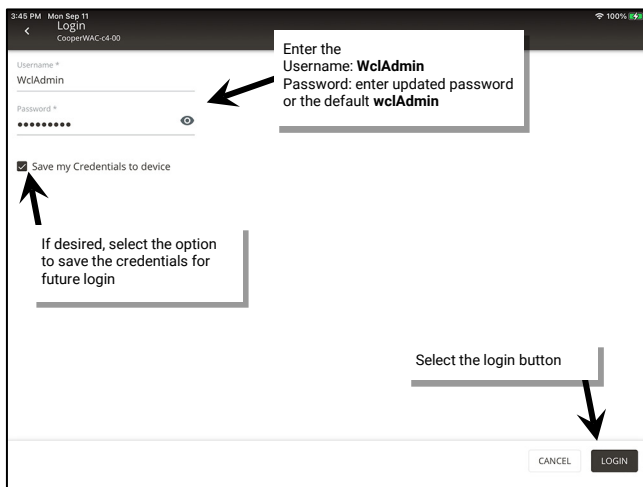
WAC2 Gen 2 Version 14.x.x.x

WAC2 Gen 2 models with version 14.x.x.x software will automatically open in the Mobile App and display the login screen.

In the log in screen, enter the username and password for the administrator user.

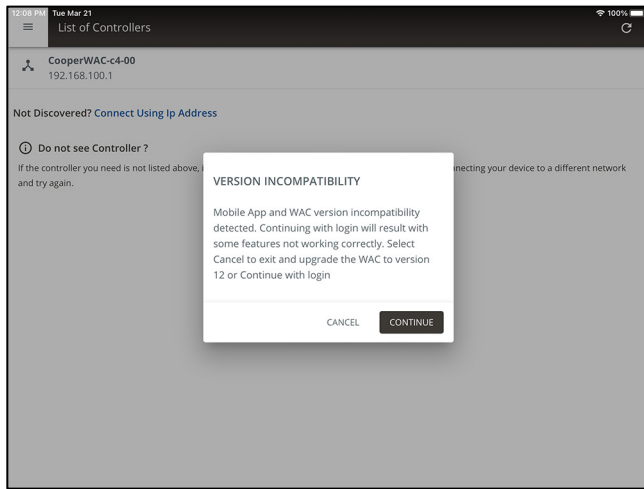
- Username: **WclAdmin**
- Password: Enter the assigned password (if still at default settings, enter password **wclAdmin**).

Select the option to save credentials to remember the login credentials automatically on this device for future connections and then select the log in button.



WAC Gen 2 Version 12.x.x.x and Lower

For a WAC Gen 2 model with 12.x.x.x or lower versions software, the WaveLinx Mobile App will display a warning indicating that there is a version incompatibility.

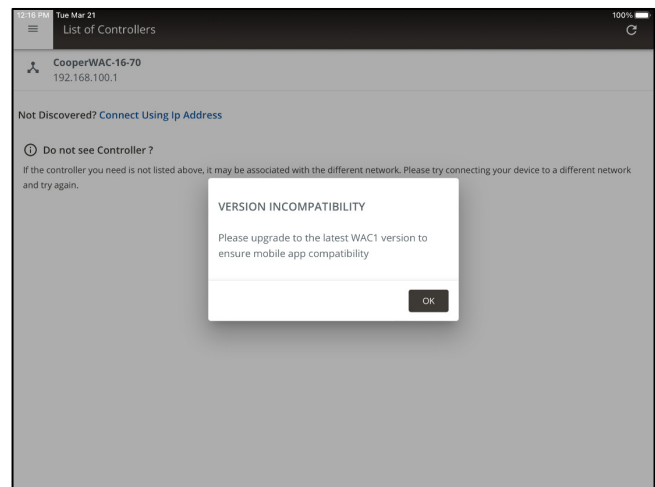


- Although the app will still allow login to the WAC, some features shown in the app may not operate properly with the WAC version. For best results, update the WAC Gen 2 to the latest software available before proceeding (see "Viewing and Updating Firmware of the WaveLinx Area Controller and WaveLinx Devices" on page 306 for instructions).
- If the WAC Gen 2 is not upgraded, it is recommended that the WaveLinx WAC Lighting App be used instead to log directly in to the WAC's webpage for administration as this will show only available features for that WAC version (see "Preparing to use the WaveLinx WAC Lighting App" on page 112).

WAC Gen 1

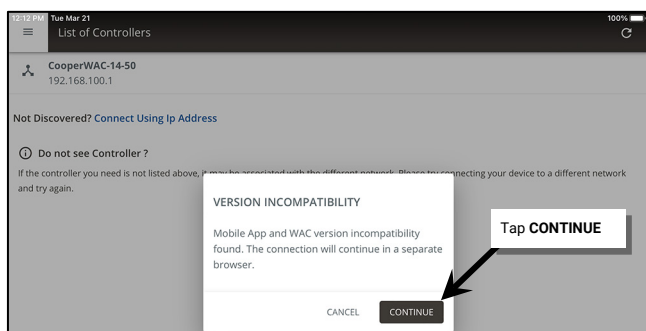
The mobile app will not directly connect to a WAC Gen 1 but will allow for a browser portal to be opened to the WAC Gen 1 for administration. Note that the features shown in the WAC Gen 1 browser portal will reflect the features available for that software version release. Refer to the user guide for that version release for information on using these features.

- If the WAC Gen 1 is not at the latest firmware version available for the unit, a version incompatibility message will display, prompting that the update be done. First, update the WAC Gen 1 to the latest Gen 1 firmware and then open the WAC again. (see "Viewing and Updating Firmware of the WaveLinx Area Controller and WaveLinx Devices" on page 306 for instructions).

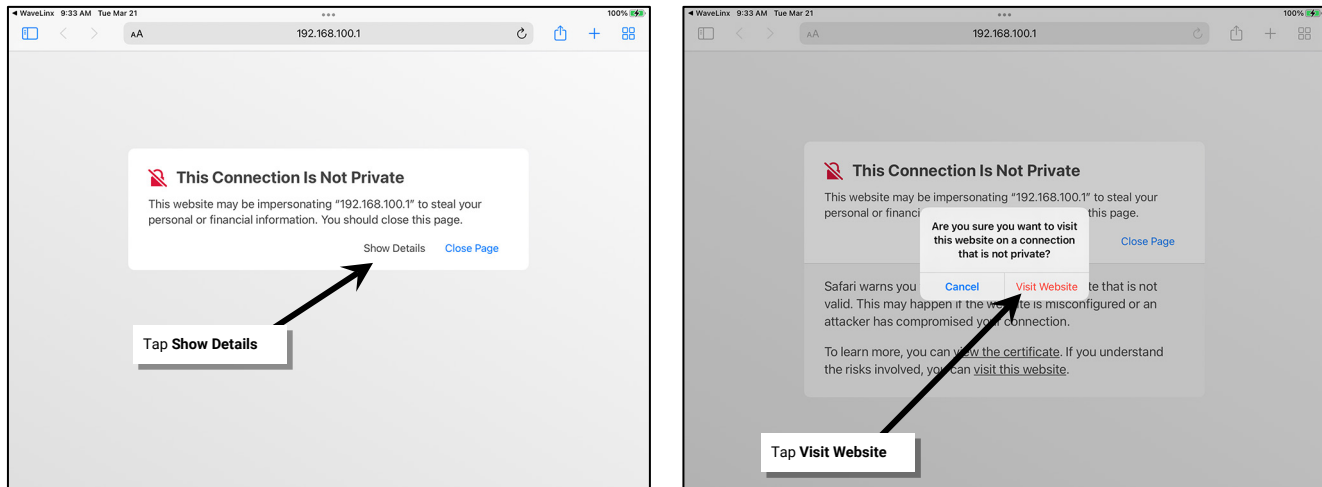


- For a WAC Gen 1 at the latest firmware version, the mobile app will display a version incompatibility message, along with the option to **Continue** to open the WAC for administration in a separate browser window.

1: Tap **CONTINUE** to open the device's browser.



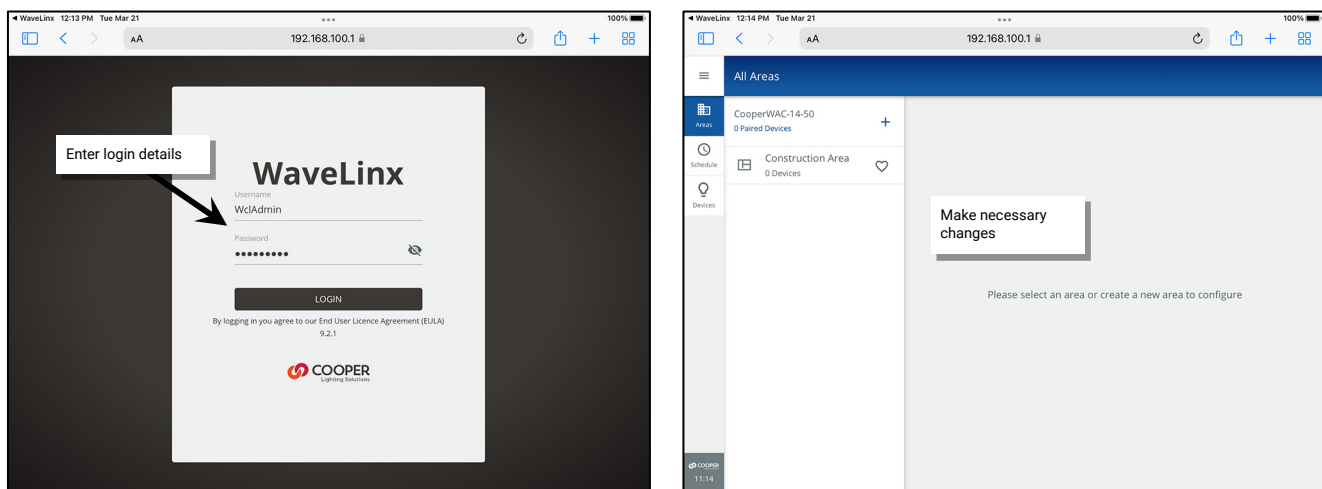
2: If a warning is displayed, click **Show Details**, and then select the option to bypass and **Visit Website**.



3: In the log in screen, enter the username and password for the administrator user.

- Username: **WclAdmin**
- Password: Enter the assigned password (if still at default settings, enter password wclAdmin).

Use the browser connected WaveLinx App to make the desired modifications.



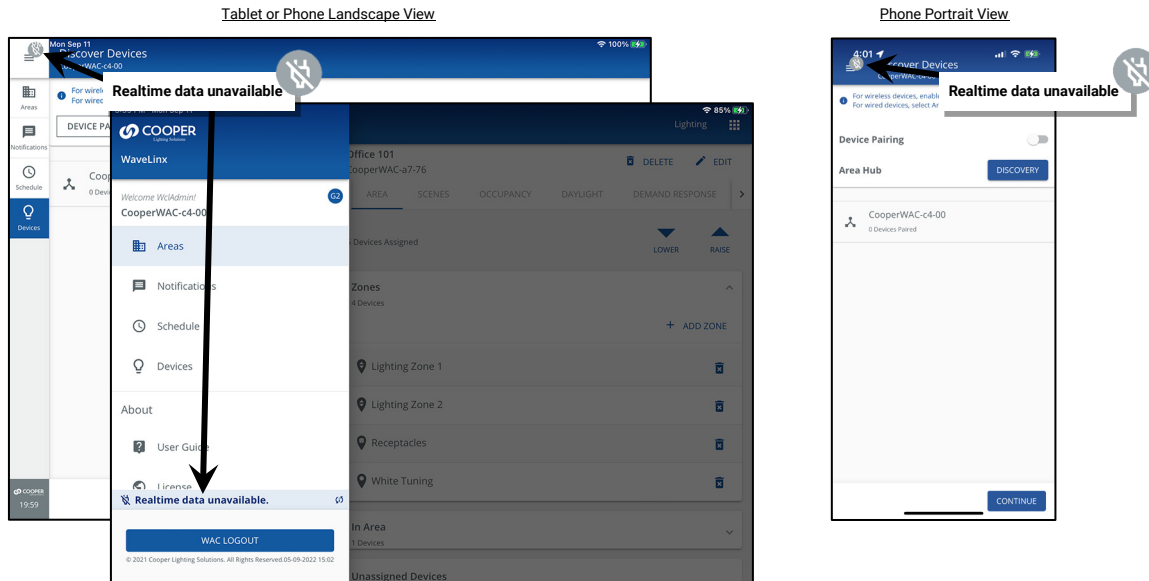
Note: The Mobile App will not be the active app displayed when logging out of a browser connected WaveLinx WAC. Tap on the WaveLinx Mobile App to access additional WaveLinx Area Controllers.

Verifying Mobile App Connection Reliability: Real-time Data Unavailable

Before proceeding on, ensure that the Mobile App has a reliable communications connection. The WaveLinx Mobile App relies on a reliable connection to the WaveLinx Area Controller to display real-time data such as:

- new device pairing/adding notifications
- current scene, daylight, and zone levels
- occupancy set status
- displaying the identified device when a device is identified using an onboard button, flashlight/laser method, or remote.

If the communication signal between the Mobile App and the WaveLinX Area Controller becomes unreliable, the Mobile App will display a special icon over the menu icon and the message **Realtime data unavailable** at the bottom of the menu. Although real-time data is affected, commands and programming changes may continue to process properly.



In most cases, the Mobile App will automatically recover from the live data disconnected state if the signal improves.

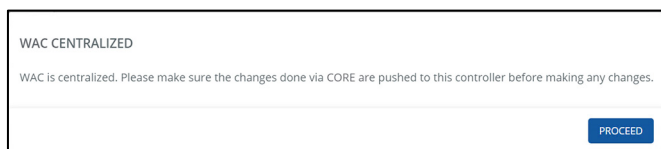
If the Mobile App indicates a disconnected state that does not automatically resolve:

- 1: Try force closing the Mobile App and then reopen it.
- 2: Move the Mobile Device closer to the Wi-Fi access point.
- 3: Ensure that the wireless network is operating properly. A poor wireless network signal will cause this intermittent issue.

Additional Login Details

If this is the first login for the WclAdmin user, a password change may be forced. If prompted to change the password, follow the instructions on screen to set a complex password. Important: Select a password that can be remembered as it will be required when logging in to the WaveLinX Area Controller through the Mobile App or through the internal webpages.

When logging in, if the message **WAC CENTRALIZED** displays, the WaveLinX Area Controller has been added to WaveLinX CORE for administration. Before proceeding, make certain to sync the programming from the WaveLinX CORE to the WAC before any changes are made. Once changes are complete, make certain that the WAC changes are synced back to the WaveLinX CORE.



Quick Links for Common Questions

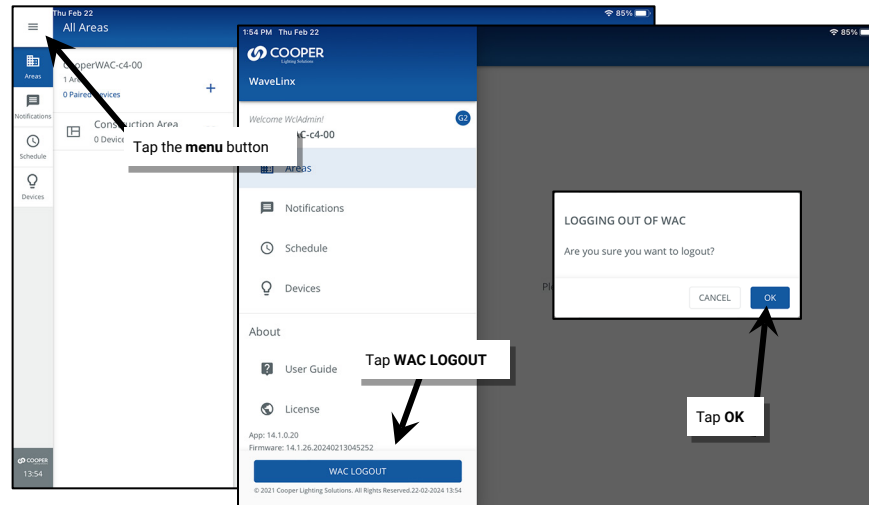
- I previously logged in on my mobile device as a personal control user and saved my credentials. Now I need to log in as the administrator user. How do I switch users? See the answer on page 362.
- How do I change the default password for the user? See the answer on page 297.
- How do I create additional users? See the answer on page 296.
- When I open the Mobile App, I get an error message. What should I do? See the answer on page 362.

Logout of the WaveLinx Area Controller using the WaveLinx Mobile App

Once the changes are complete, log out of the WaveLinx Area Controller.

To log out of the WaveLinx Area Controller

- 1: Tap **menu** ☰.
- 2: Select **WAC LOGOUT**.
- 3: Tap **OK**.



The Mobile App will logout and return to the **List of Controllers**.

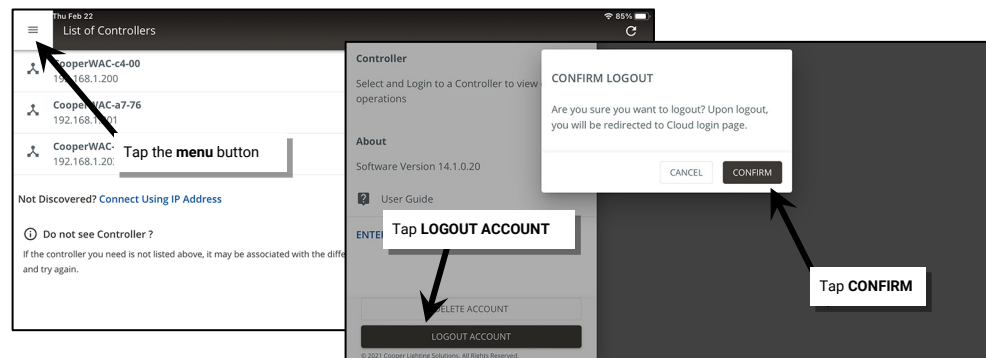
Logout of the Mobile App

Once logged in to the Mobile App, it is not necessary to log out. The WaveLinx Mobile App can be used without need of an external internet connection if the user account remains logged in.¹⁷⁴

WARNING: If an App logout is processed, an internet connection will be required to log back in.

To log out of the Mobile App:

- 1: Tap **menu** ☰.
- 2: Select **LOGOUT ACCOUNT**.
- 3: Tap **CONFIRM**.



To use the WaveLinx Mobile App again, login as a registered user (requires an internet connection).

¹⁷⁴ Selecting **WAC Logout** closes the connection to the current WaveLinx Area Controller. It will not logout the Mobile App user account.

Preparing to use the WaveLinX WAC Lighting App

The WaveLinX Area Controller Gen 2 (WAC) internal webpages offer the capability to login via PC to administer the lighting programming through a built-in Lighting App. This feature requires a WAC2 with minimum software version 11.x.x.x.

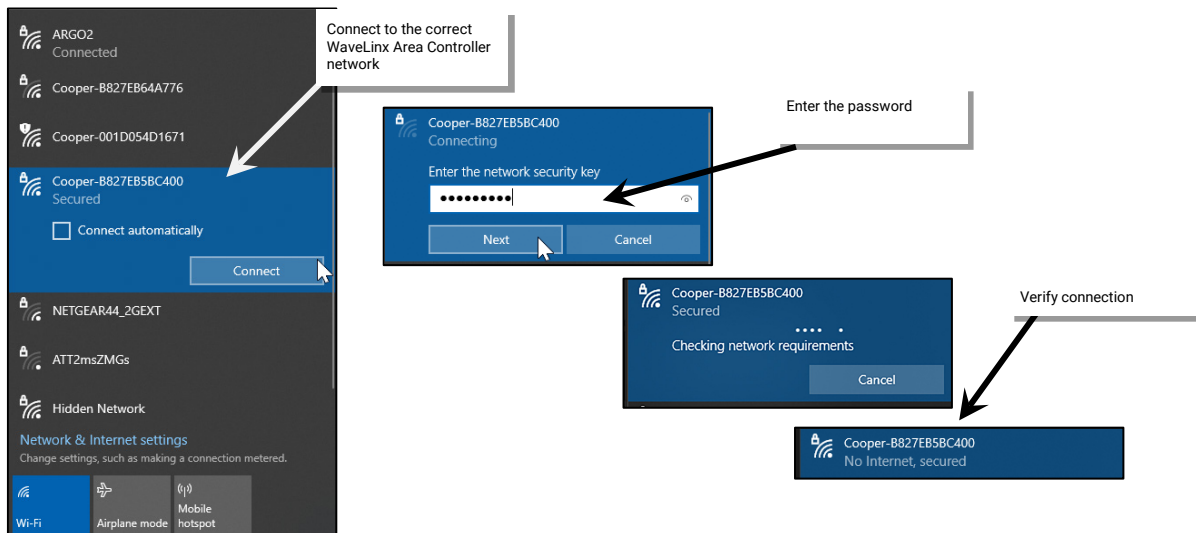
The WaveLinX WAC Lighting App will have the same appearance and functionality as the WaveLinX Mobile App when logged in to a WaveLinX Area Controller. The WAC Lighting App will not require user registration, and will not display the notification options or demonstration mode features of the WaveLinX Mobile App.

Logging in to the WaveLinX WAC Lighting App

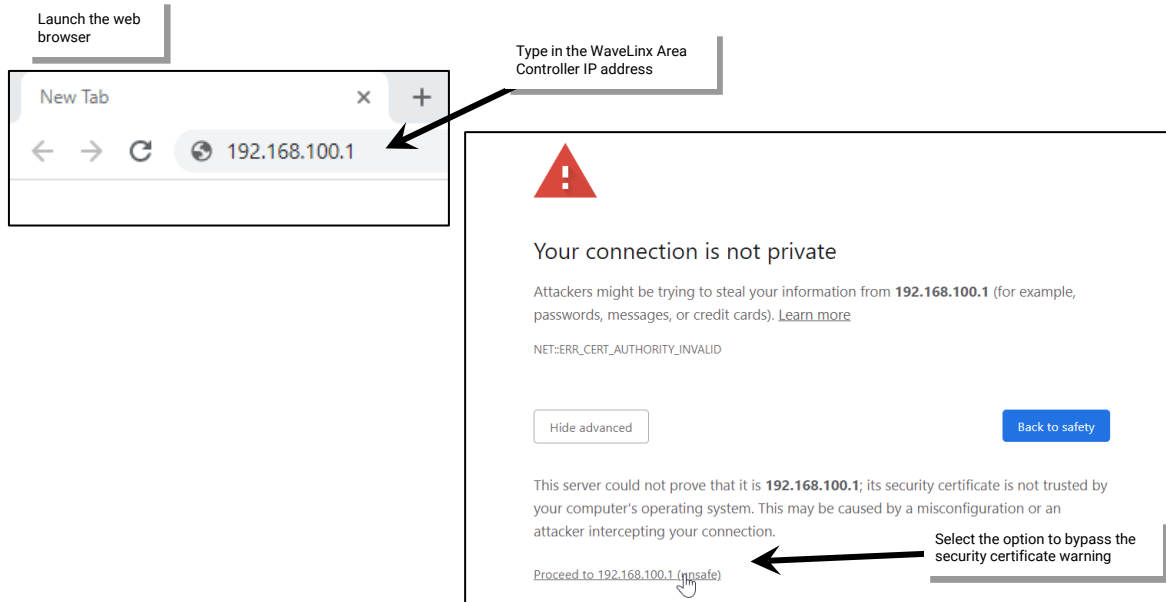
Before logging in to the WAC WaveLinX Web App, perform the initial setup of the WaveLinX Area Controller recommended in “Initial Configuration Steps for the WaveLinX Area Controller 2 (Gen 2)” on page 18. Once these steps are completed, the WAC Lighting App is ready for use.

The below steps assume that during the initial configuration steps, the WaveLinX Area Controller default password and network key have been updated from the defaults. The below steps use the WAC Gen 2’s built-in wireless access to connect to the computer being used. If the WAC Gen 2 has been installed into the facility network and the computer has access through the facility network, use the IP address assigned to the WAC Gen 2 on the facility network to access the webpage. Refer to the network administrator for access information, the WaveLinX Area Controller’s IP address, and the credentials to use when logging in.

- 1: Make sure that the mobile device or computer being used has wireless connectivity and has a current web browser installed. The WaveLinX internal webpage configuration is accessed using a current version web browser.
- 2: If there is more than one WaveLinX Area Controller in the facility, on the top of the WaveLinX Area Controller, locate the label with the MAC ID. Make note of the MAC ID shown.
- 3: Turn on the mobile device or computer Wi-Fi and locate the Wi-Fi network named Cooper-XXXXXXXXXXXX (where X is a string of letters and numbers). Select the Wi-Fi network Cooper-XXXXXXXXXXXX where the X characters match the MAC ID noted in the last step. When prompted, enter the previously customized password, and then join the network (If still at the default settings, use the network key password **wclAdmin** [case sensitive]).

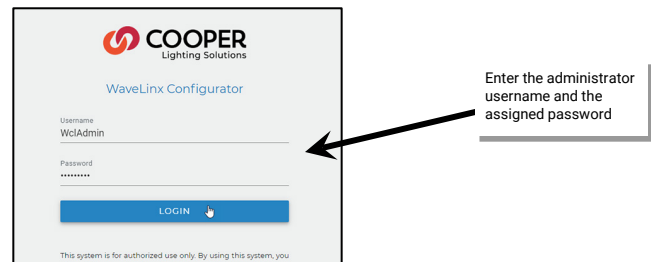


- 4: Open the web browser and enter the IP address of the WaveLinX Area Controller in the address bar. (The default IP address if connecting through the onboard wireless access point is 192.168.100.1.) The first time the WaveLinX Area Controller is accessed, the browser may display message windows regarding the site security certificate. The display and wording of these messages may differ between web browsers. Locate the option to bypass the warning to proceed to the site.

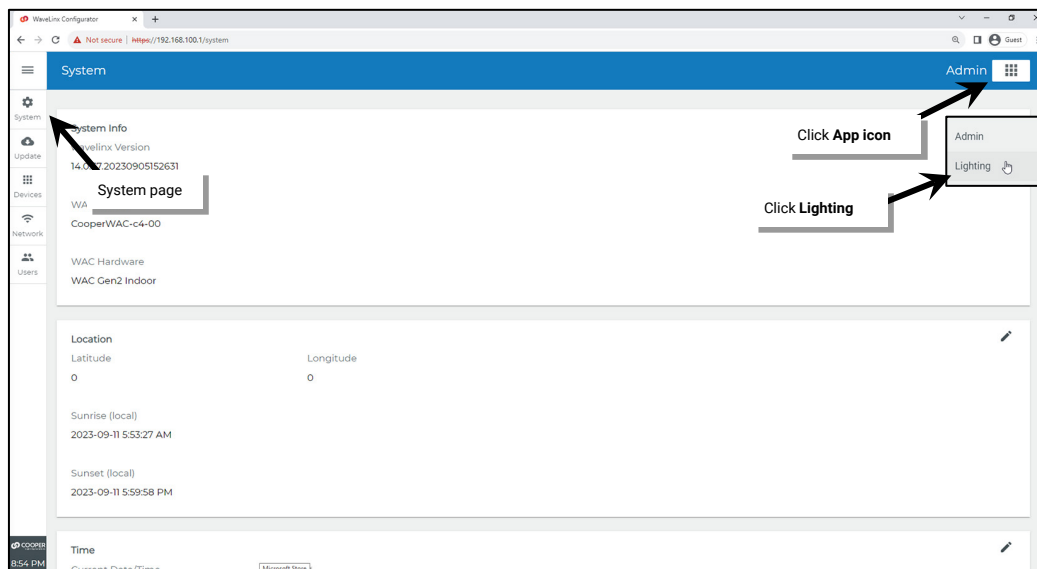


- 5: In the log in screen, enter the username and password for the administrator user.

- Username: **WclAdmin**
- Password: Enter the assigned password.

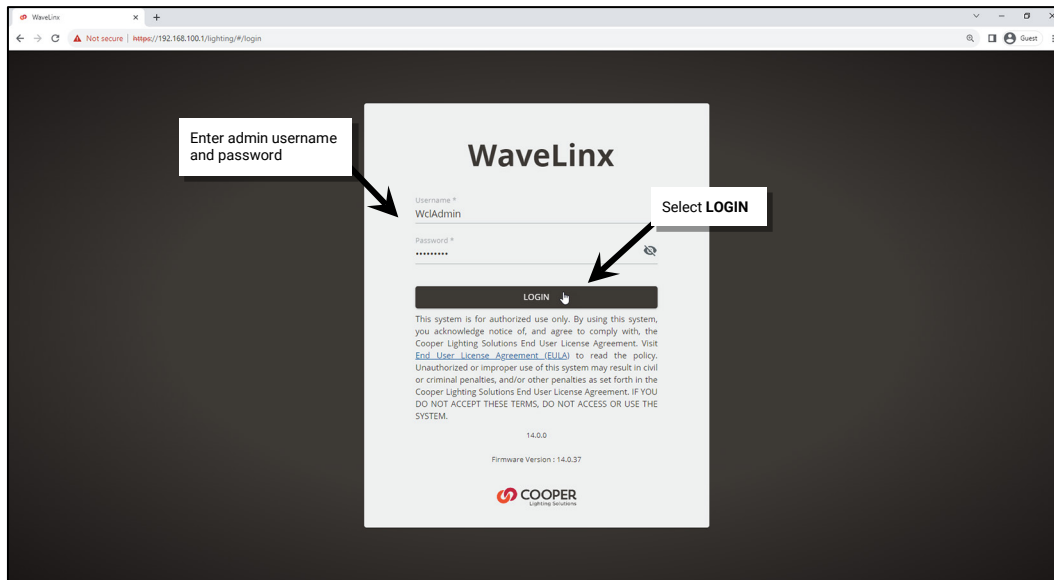


- 6: In the top right of the system page, click on the **App icon** and then select **Lighting** from the drop down.

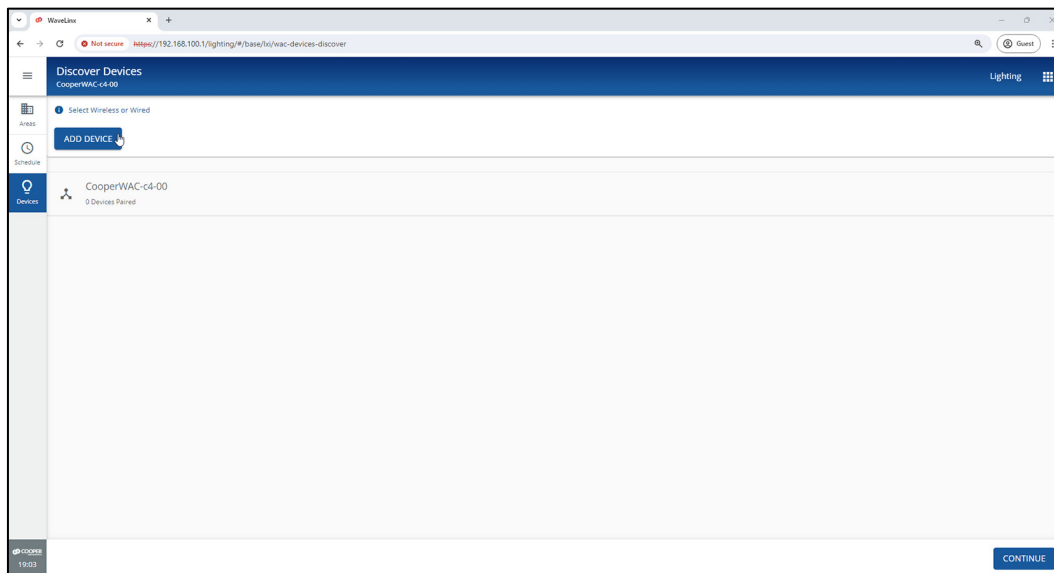


7: When prompted, enter the username and password for the WaveLinX Area Controller's administrator user and then select **LOGIN**.

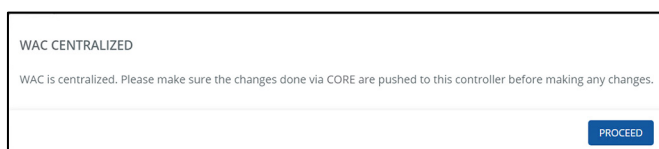
- Username: **WclAdmin**
- Password: Enter the assigned password.



8: The WAC Lighting App will allow administration and programming of the devices that are paired with this WaveLinX Area Controller.



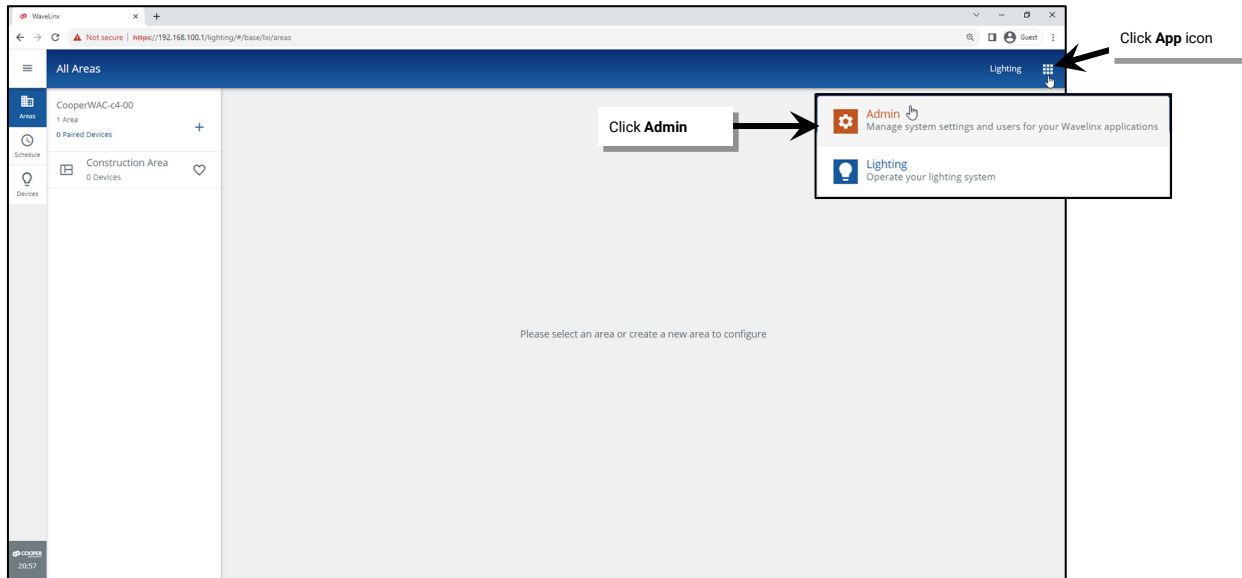
When logging in, if the message **WAC CENTRALIZED** displays, the WaveLinX Area Controller has been added to WaveLinX CORE for administration. Before proceeding, make certain to sync the programming from the WaveLinX CORE to the WAC before any changes are made. Once changes are complete, make certain that the WAC changes are synced back to the WaveLinX CORE.




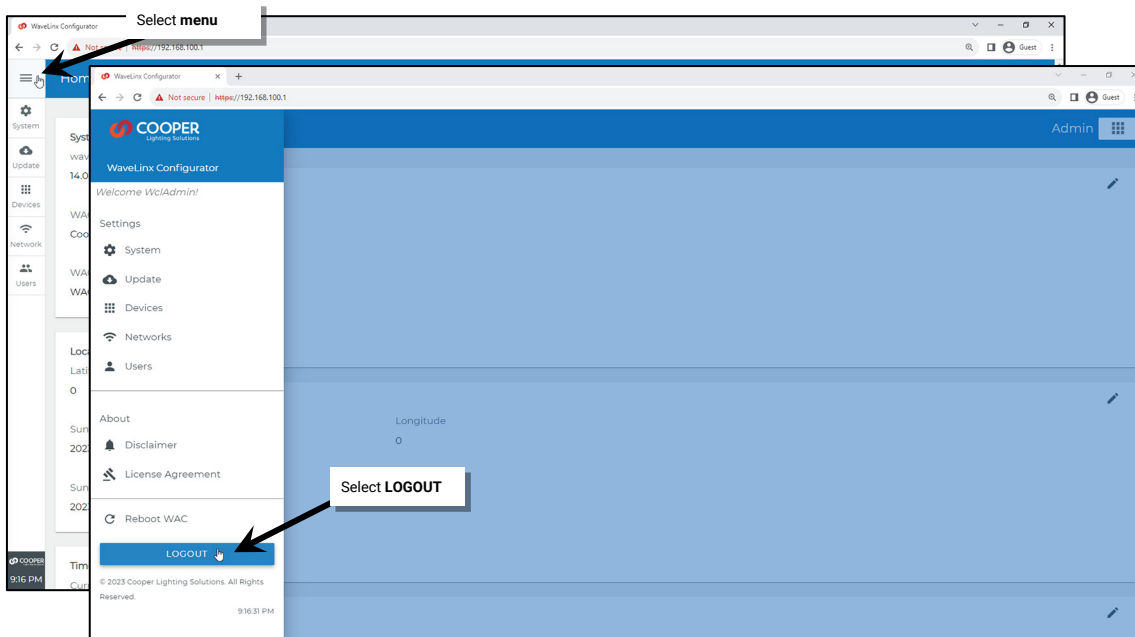
Close and Logout of the WaveLinX WAC Lighting App

To logout and close out of the WaveLinX WAC Lighting App follow the instructions below:

1: In the top right of the Lighting App page, click on the **App icon**  and then select **Admin** from the drop down.



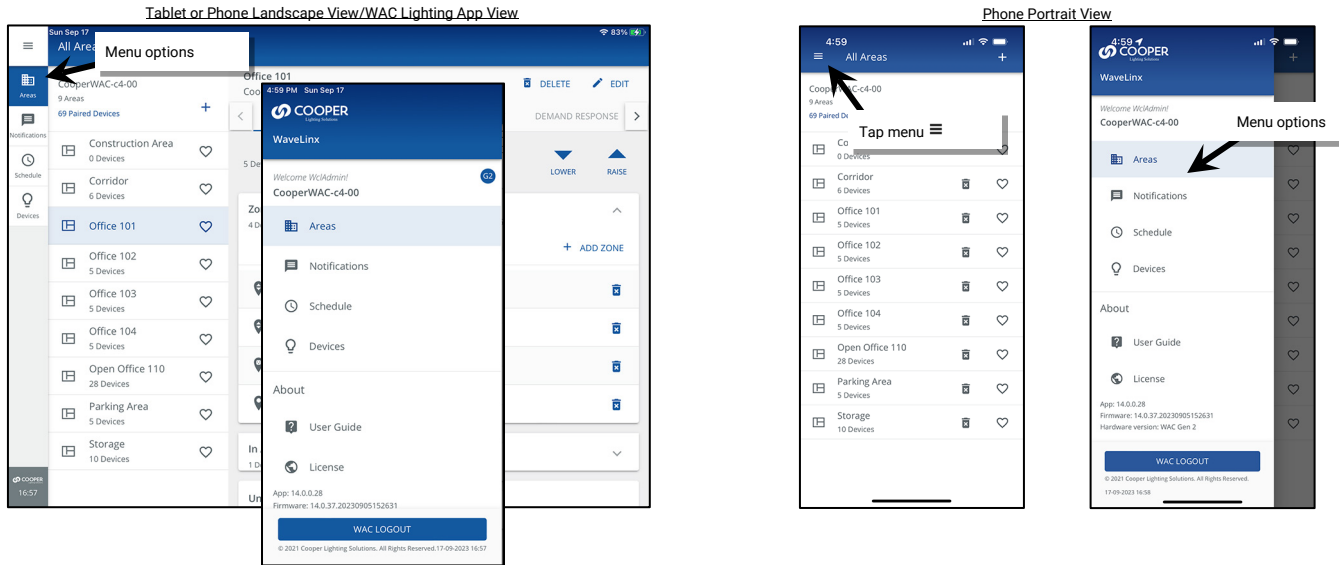
2: Select **menu**  and then select **LOGOUT**.



WaveLinX Area Controller Screen Layout and Navigation

The layout of the Mobile App and the WAC Lighting App¹⁷⁵ may appear slightly different between mobile phones and tablets/PCs as well as if the device is used in portrait or landscape orientation.

On larger tablets in landscape view and in the WAC Lighting App, menu items will be displayed along the app sidebar for easy navigation. In smaller devices or in portrait view, use the menu to navigate between the options.



The menu allows access to:

- **Areas:** Where the organization of devices and programming occurs.
- **Notifications:** Where any notifications will display. This feature may only be displayed in the WaveLinX Mobile App.
- **Schedule:** Where timed event programming occurs.
- **Devices:** Where detailed device information can be displayed

Using the Area Screen

The area screen is used to organize the WaveLinX Area Controller, setting up areas and zones, assigning devices, and adjusting programming.

Areas

An **Area** can be either a **standard area** or a **partitioned area**.¹⁷⁶ Devices will be assigned to areas during the initial setup for standard areas or during setup of a partitioned area.

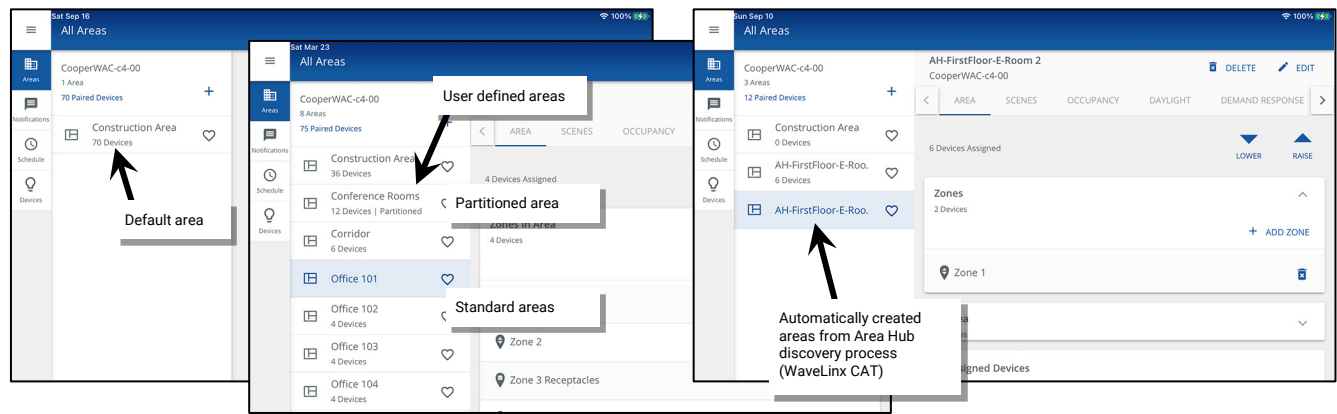
- A **standard area** is a space within a facility with devices that operate separately from other spaces (a room). The area will contain the devices that operate to control that room.
- A **partitioned area** is a space within the facility that may have moveable divider walls to allow creation of one large space or several smaller spaces (**sub areas**). Devices in the space may need to operate independently for a single sub area when divider walls are closed or may need to operate a combination of sub areas when walls are opened.

¹⁷⁵ This feature requires the use of a WAC2 (Gen 2) WaveLinX Area Controller with the minimum software version 11.x.x.x.

¹⁷⁶ The use of partitioned areas requires the use of a WAC2 (Gen 2) WaveLinX Area Controller with the minimum software version 14.1.x.x.

During the initial pairing with the WaveLinx Area Controller, all WaveLinx PRO and WaveLinx LV devices are placed in the default construction area. As part of system setup, additional areas can be created to organize devices that will work together.

With WaveLinx CAT devices, when the WaveLinx Area Hub is discovered, areas are automatically created for each Area Hub port that is connected to WaveLinx CAT devices. The devices are automatically assigned to the port areas. Additional areas can be created manually and devices moved to other areas as needed.



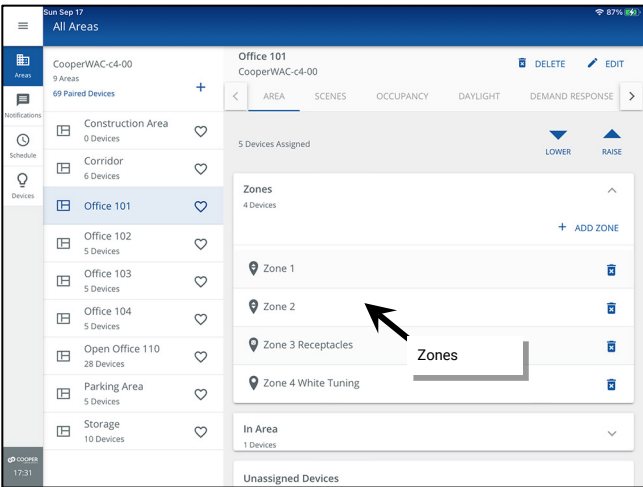
Zones

A **Zone** is a collection of load devices within an area that operate together.

Once areas are created, the controlled loads within a room (area) will be organized further, grouping loads that should operate together into zones. For instance:

- Fixtures in the same row may be grouped into a dimmable zone to allow for uniform operation
- Controlled WaveLinx PRO Receptacles or receptacles operated from WaveLinx PRO or CAT Switchpacks are placed in a receptacle zone to allow easy control capability.
- White tunable devices may be separated to allow for separate control of color tuning from the ON/OFF and dimming functionalities of the fixtures.
- In a partitioned area, a zone that is shared between multiple spaces will be split into sub zones to allow for independent operation when the partition walls are closed.

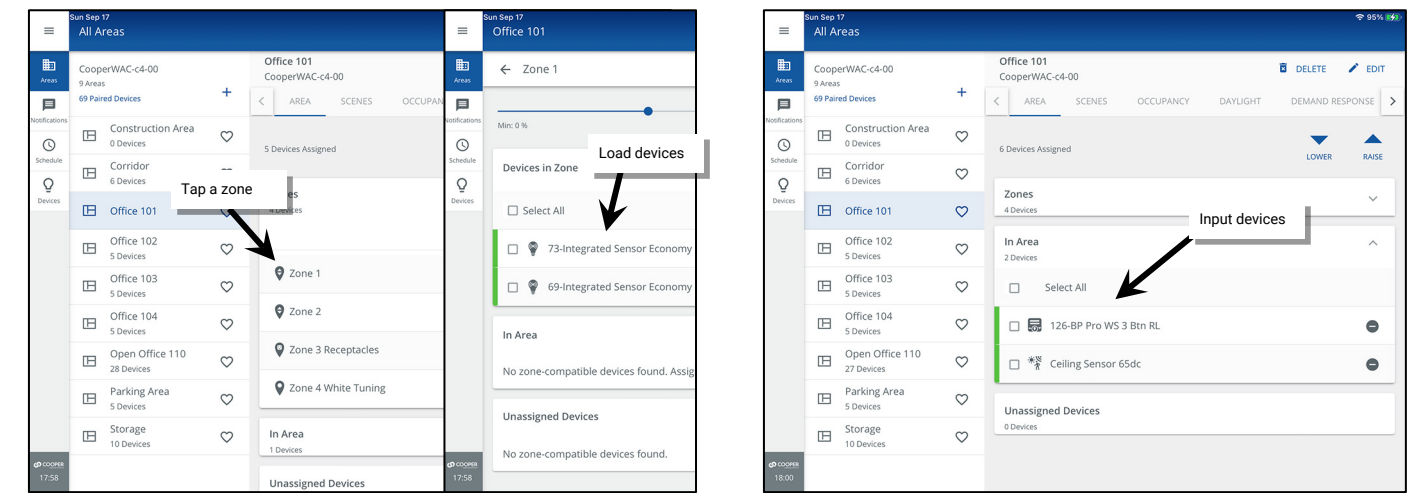
The WaveLinx App creates at least one dimmable zone by default for each area. Additional zones may be added manually as needed. The type of zone is indicated by each zone's icon.



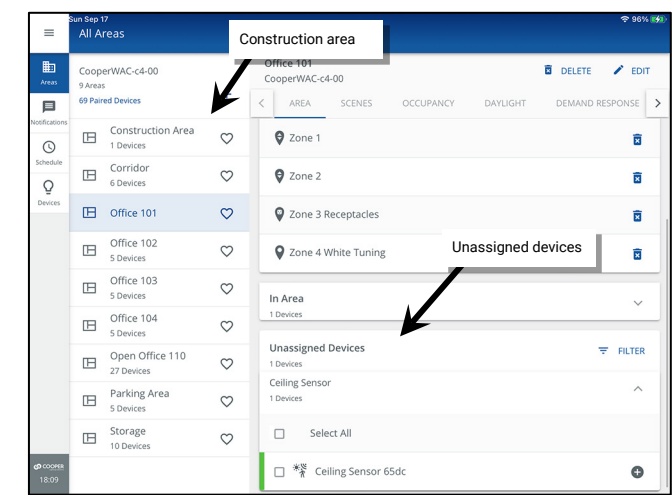
Icon	Description
	Dimmable Zone: May contain any dimmable load connected to a dimmable WaveLinx PRO, CAT, or LV devices such as Integrated or Tilemount Sensors, Dimming Switchpacks or Outdoor Lighting Control Modules.
	Receptacle Zone: May contain WaveLinx PRO Receptacles or receptacles switched through a WaveLinx PRO or CAT Switchpack (0-10V connections not being used)
	Non-dimmable Zone: May contain non-dim load (switched load) switched through a WaveLinx PRO or CAT Switchpacks (0-10V connections not being used) or to a WaveLinx PRO Control Multiplier.
	White Tuning Zone: White tuning control zone for WaveLinx PRO Universal Voltage Dimming Switchpacks connected to the 0-10V white tuning control wires of a fixture or fixture group. (RSP-P-010-347, WSP-MV-010 and WSP-UV-010 models only). Also operates with the Advanced Integrated Sensor model IS-PRO CCT.

Devices

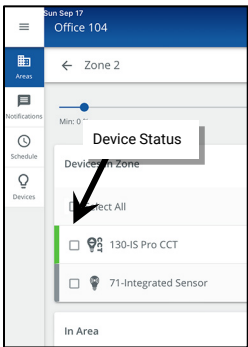
- A **Device** is a WaveLinX PRO, LV, and CAT component that can be controlled and configured for control by the WaveLinX Area Controller. Devices will be assigned to areas. It is possible to use a mixture of device families within the same area if the application calls for it.
- Devices that directly attach to or control lighting or receptacle loads are typically assigned to zones. Tap a zone to show the assigned control devices.
 - Other devices such as WaveLinX PRO/CAT Wallstations, WaveLinX PRO/CAT Ceiling Sensors, WaveLinX CAT Contact Closure Input and Sensor Interface Modules, or other input devices will be in the **In Area** section in a standard area or in **Devices** in a partitioned sub area.



If devices have not been assigned to an area, they will appear in the **Unassigned Devices** section or in the Construction Area.



Each device will have a color-coded status bar that shows online or offline status.



Icon	Description
	Device Green: The device is communicating and operational
	Device Gray/Device Red: The device is no longer communicating to the WaveLinX Area Controller. <ul style="list-style-type: none">• Upon reboot devices that do not communicate with the WaveLinX Area Controller will remain gray.• If the device drops offline without a WaveLinX Area Controller reboot, the icon will turn red after no communication for more than 15 minutes.¹⁷⁷• For WaveLinX Ceiling Sensors and WaveLinX Battery Powered Wallstations, the battery may be low, or the device is not communicating.

¹⁷⁷ Devices with older firmware may take up to 1 hour before the icon indicates an offline status.

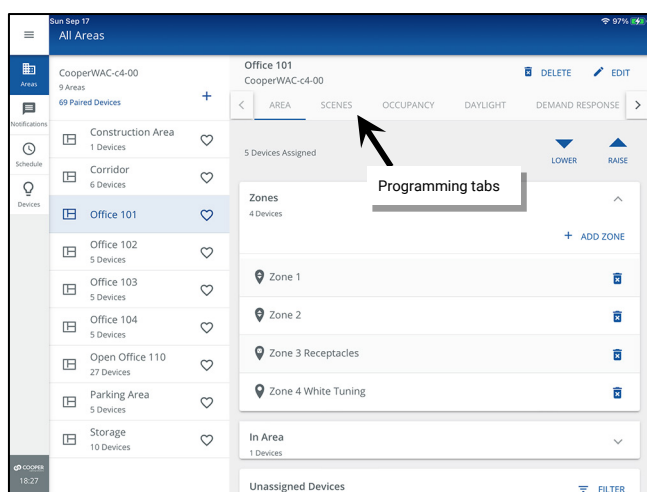
Programming

The area screen is used to program devices and control operation.

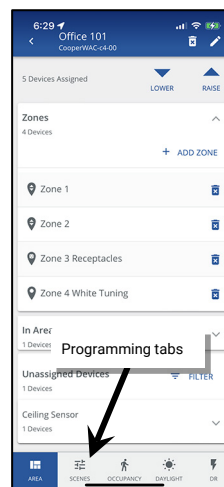
- Tap on a device to access the device.
- Access operation programming by tapping on the tabs located either at the top or bottom of the screen (position differs based on device type and landscape/portrait view).

For more information on programming devices or using the programming tabs, see “Customizing Default Programming” beginning on page 164.

Tablet or Phone Landscape View



Phone Portrait View

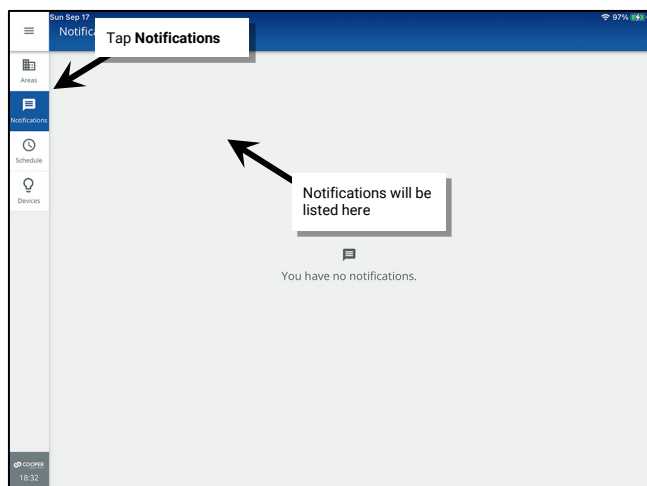


Using the Notifications Screen

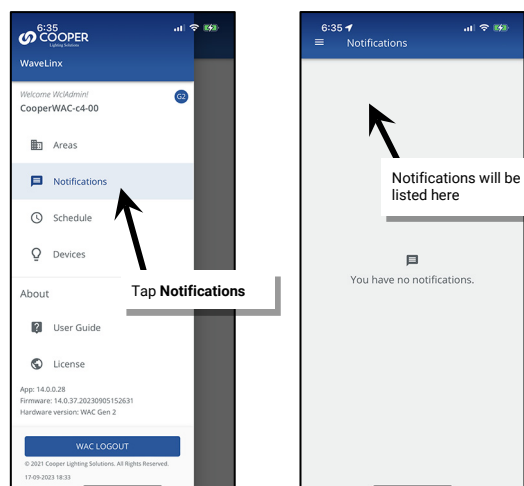
The notifications screen will be used to display notifications that have been pushed the mobile device from the user's MyApps account. Notifications will only display in the Mobile App and will not display in the WaveLinx WAC Lighting App.

Notifications may be issued with new releases or other Cooper Lighting Solutions communications. If app notifications are allowed, notifications will display on the mobile device. New notification alerts will also be indicated by a symbol over the WaveLinx App icon and the app menu. To review and acknowledge the notification alert, from the menu, select **Notifications** and then tap the new notification.

Tablet or Phone Landscape View



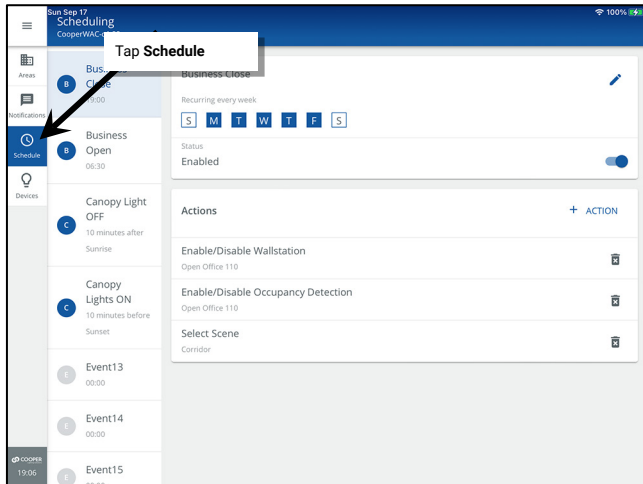
Phone Portrait View



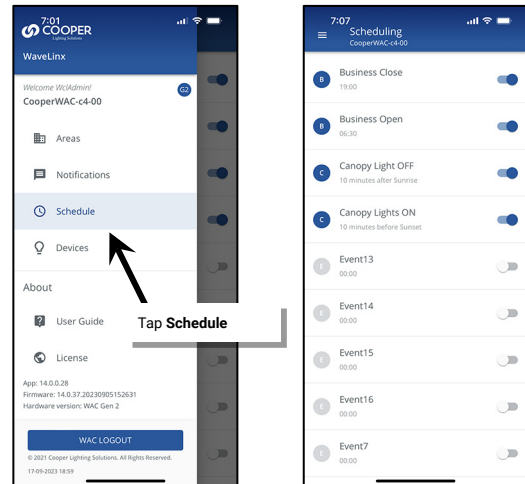
Using the Schedule Screen

The schedule screen will display the scheduled events in this WaveLinx Area Controller. An active event will display in blue while inactive events display in gray. Tap an event to review the event details. For more information on using schedule events, see “Adding Schedules to the Control Strategy” on page 250.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View




Using the Devices Screen

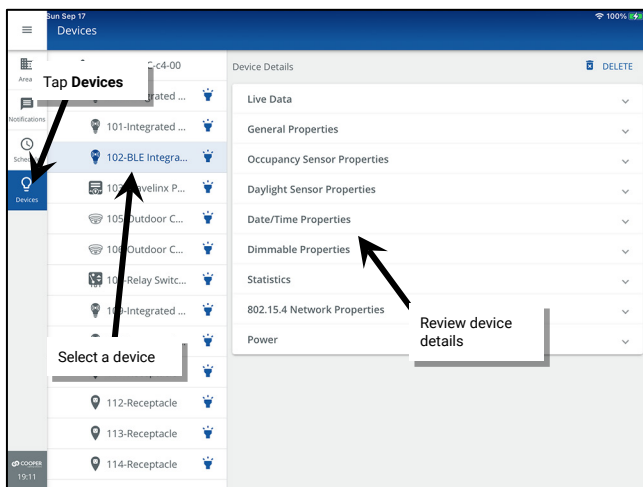
The devices screen will display all the devices paired to the WaveLinx Area Controller and will also display the WaveLinx Area Controller details. Tap any device to open the device information details. Device information details listed for the device will differ based on the type of device selected.

Expand each device detail section to view details such as:

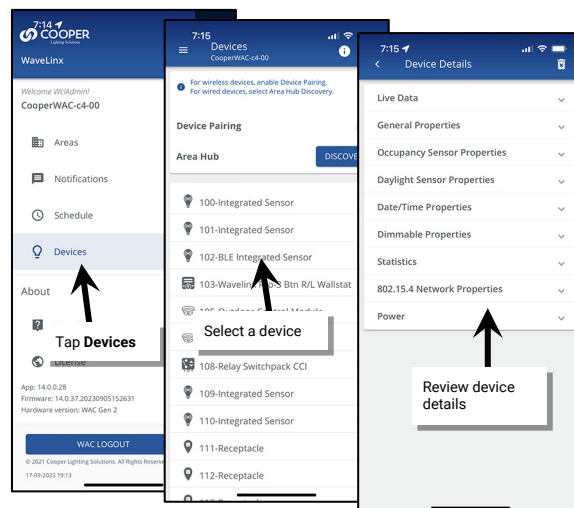
- online or offline status,
- device type and firmware details
- 802.15.4 network details,
- device properties regarding occupancy settings, daylight settings, and dimming
- current battery voltage for battery powered devices
- Ethernet and wireless network settings for devices connected to the Ethernet, and more

Devices may also be identified using the **Blink to Identify** option . **Reverse identification mode** will also operate in the **Devices** screen.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



Adding WaveLinx Devices to a WaveLinx Area Controller

The WaveLinx Area Controller can operate with WaveLinx PRO, WaveLinx CAT, and WaveLinx LV devices. Regardless of the category of WaveLinx Device being used, the device must be added to the WaveLinx Area Controller to allow for WaveLinx control. The process of adding the device to the WaveLinx Area Controller may be slightly different depending on the category of device being used. Use the steps in this section to:

- Pair WaveLinx PRO and LV Devices with a WaveLinx Area Controller (Construction Grouping)
- Discover the WaveLinx CAT Area Hub and Add CAT Devices

Pair WaveLinx PRO and LV Devices with a WaveLinx Area Controller (Construction Grouping)

The WaveLinx Area Controller pairs with WaveLinx PRO devices to allow immediate energy savings. WaveLinx LV devices also join the WaveLinx Area Controller using the pairing process. Use the steps in this section to:

- Part 1: Verify WaveLinx PRO and LV Devices are Ready for Pairing
- Part 2: Pair WaveLinx PRO and LV Devices with a WaveLinx Area Controller (Construction Grouping)
- Part 3: Establish WaveLinx App Communication with a WaveLinx Area Controller

Part 1: Verify WaveLinx PRO and LV Devices are Ready for Pairing

Steps in this section will refer to the WaveLinx Device Reference Sheets. Refer to the reference sheets for the equipment at the site when prompted.

- 1: Perform the initial configuration steps for the WaveLinx Area Controller. Refer to “Initial Configuration Steps for the WaveLinx Area Controller 2 (Gen 2)” on page 18.
- 2: If the site is using WaveLinx LV devices, perform the initial configuration steps for the WaveLinx Low-Voltage Power Module. Refer to “Initial Configuration Steps for the Low-Voltage Power Module” on page 33 for the necessary steps.
- 3: Ensure that all WaveLinx devices are installed and powered. Then verify that each device shows the proper out-of-the-box behavior as described in the device reference sheets beginning on page 14.

Quick Links for Common Questions

- One of my devices does not display the correct out-of-the-box functionality. What should I do? See the answer on page 350.

Part 2: Pair WaveLinx PRO and LV Devices with a WaveLinx Area Controller (Construction Grouping)

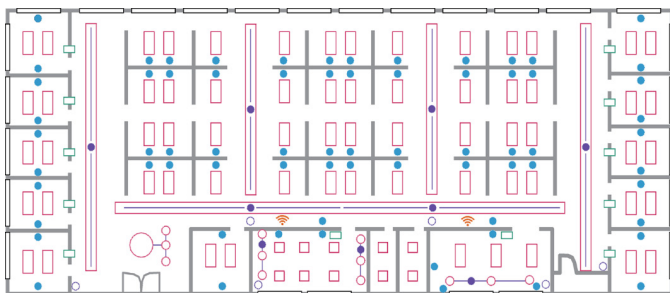
Pairing is the first step in preparing PRO and LV devices for configuration from the WaveLinx App. When paired, the devices will join the default **Construction Area**. This forms one large default control group for basic operation during the construction phase and allows the WaveLinx App to access the devices through the paired WaveLinx Area Controller. There are two methods of pairing WaveLinx PRO or LV devices with the WaveLinx Area Controller.

Option 1: Pairing WaveLinx PRO or LV Devices with the WaveLinx Area Controller using the PAIR Button

On sites with more than one WaveLinx Area Controller, only place one WaveLinx Area Controller into pairing mode at a time. When in pairing mode, WaveLinx Area Hub discovery mode will be disabled.

Steps in this section will refer to the WaveLinx Device Reference Sheets. Refer to the appropriate reference sheets when prompted to review information on how to place devices into pairing mode or review successfully paired device behavior.

- 1: On the site floorplan, locate the WaveLinx Area Controller and identify each WaveLinx PRO and LV device that should be paired with it.¹⁷⁸




¹⁷⁸ Sites designed to use multiple WaveLinx Area Controllers should identify the devices that belong to each controller so that they can be correctly paired with the appropriate WaveLinx Area Controller according to the design plan.

- 2: Place the WaveLinx Area Controller into pairing mode. Press and release (1 second press) the PAIR button. The blue 802.15.4 LED on the WaveLinx Area Controller will blink to indicate pairing mode is active.

The WaveLinx Area Controller will remain in pairing mode for 60 minutes unless pairing mode is exited manually from the mobile app or by pressing and releasing (1 second press) the PAIR button again.



- 3: Place each WaveLinx PRO device that should pair with the WaveLinx Area Controller into pairing mode. Refer to the device reference sheets beginning on page 14 for details on how to place each device into pairing mode.
It is not necessary to place WaveLinx LV devices in pairing mode. For WaveLinx LV devices, if the Low-Voltage Power Module has been configured with an IP Address in the same subnet as the WaveLinx Area Controller, it will be ready for pairing. The connected LV devices will pair when the Low-Voltage Power Module is paired.
- 4: During the 60-minute pairing period, WaveLinx PRO devices and the WaveLinx Low-Voltage Power Module should pair with the WaveLinx Area Controller. Devices should exhibit the successful paired device behavior described in the device reference sheets.
- 5: Allow the pairing mode's 60-minute automatic time-out period to expire, or manually cancel pairing mode. To manually cancel pairing mode, press and release the PAIR button (1 second press) or use the mobile app to disable pairing.¹⁷⁹ The blue 802.15.4 LED  should remain ON continuously when in normal operation.
- 6: Verify that all WaveLinx PRO and LV devices paired with the WaveLinx Area Controller successfully. The WaveLinx Area Controller can be placed back in pairing mode to check device pairing. Refer to the device reference sheets beginning on page 14 for details on each device's expected successful pairing behavior.

Repeat the procedures in this section for each WaveLinx Area Controller in the facility.

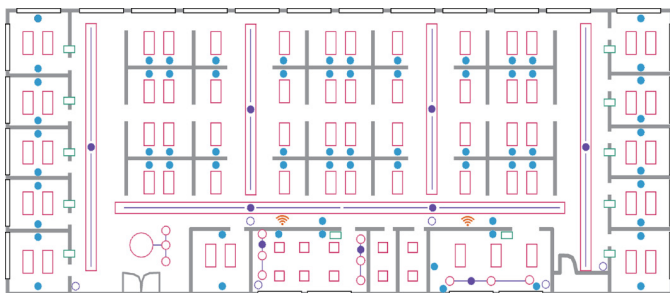
Quick Links for Common Questions

- Pairing mode timed out before I was done adding my devices or before I confirmed that my devices paired properly. What should I do? See the answer on page 360.
- One or more of my devices did not pair. What should I do? See the answer on page 360.
- I have more than one WaveLinx Area Controller in my facility. A device or multiple devices paired with the wrong WaveLinx Area Controller. How do I resolve this? See the answer on page 360.
- My device is showing paired behavior, but it is not paired with the correct WaveLinx Area Controller. I am unable to find what WaveLinx Area Controller it has paired with. How do I remove its pairing to start over? See the answer on page 361.
- I installed a new device after I completed the initial construction pairing. How do I pair the new device into the existing group? See the answer on page 361.
- A device was not powered during the pairing process and did not successfully pair with the WaveLinx Area Controller. How do I get it to join the construction group? See the answer on page 361.
- What will my devices do if they lose communication with the WaveLinx Area Controller? See the answer on page 364.

Option 2: Pairing WaveLinx PRO or LV Devices with the WaveLinx Area Controller using the WaveLinx App

The WaveLinx Mobile App or WaveLinx WAC Lighting App¹⁸⁰ can also be used to enter or exit pairing mode. This can be useful when the PAIR button is not easily accessible.

- 1: On the site floorplan, locate the WaveLinx Area Controller and identify each WaveLinx PRO and LV device that should be paired with it.¹⁸¹



¹⁷⁹ The WaveLinx App can also be used to place a WaveLinx Area Controller into pairing mode or to exit pairing mode if the WaveLinx Area Controller is not in an easily accessible location.

¹⁸⁰ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

¹⁸¹ Sites designed to use multiple WaveLinx Area Controllers should identify the devices that belong to each controller so that they can be correctly paired with the appropriate WaveLinx Area Controller according to the design plan.

2: Launch the WaveLinx Mobile App or WaveLinx WAC Lighting App

- To use the Mobile App, open the app and login to the WaveLinx Area Controller as the administrator. See “Login to the WaveLinx Mobile App” on page 102 for login details.
- To use the WaveLinx WAC Lighting App¹⁸², login to the internal WaveLinx Area Controller webpage as the administrator and launch the lighting app. See “Logging in to the WaveLinx WAC Lighting App” on page 112 for details.

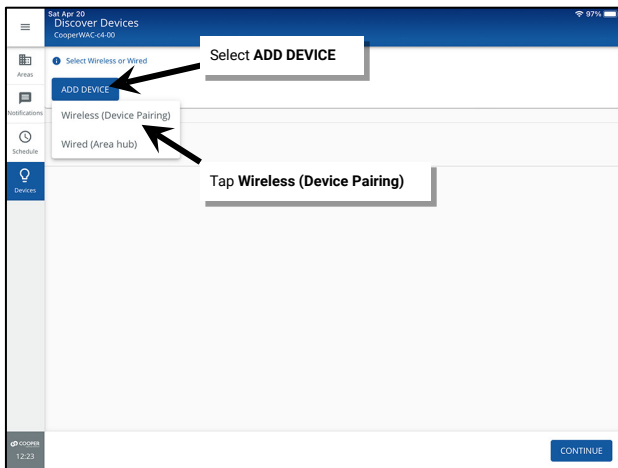
3: Place each WaveLinx PRO device that should pair with the WaveLinx Area Controller into pairing mode. Refer to the device reference sheets beginning on page 14 for details on how to place each device into pairing mode.

It is not necessary to place WaveLinx LV devices in pairing mode. For WaveLinx LV devices, if the Low-Voltage Power Module has been configured with an IP Address in the same subnet as the WaveLinx Area Controller, it will be ready for pairing. The connected LV devices will pair when the Low-Voltage Power Module is paired.

4: Use the WaveLinx App to place the WaveLinx Area Controller into **Device Pairing Mode**.

If no devices are currently paired with the WaveLinx Area Controller:

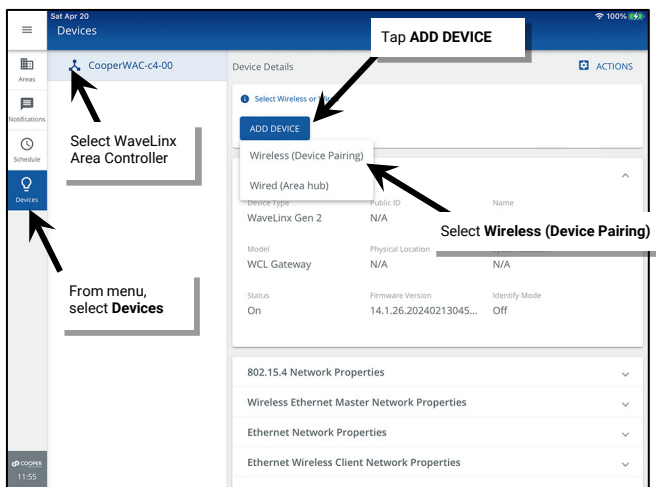
The selected app will automatically bring up the option to **ADD DEVICE** to the WaveLinx Area Controller. Tap **ADD DEVICE** and then select **Wireless (Device Pairing)** to turn on **PAIRING mode**.



If devices are already paired or to enter or exit pairing mode at any time:

- Tablet users/phone users in landscape view or WAC Lighting App users: From the menu, select **Devices**. Select the **WaveLinx Area Controller**, tap **ADD DEVICE** and select **Wireless (Device Pairing)**.
- Phone users in portrait view: From the menu, select **Devices**, tap **ADD DEVICE** and select **Wireless (Device Pairing)**.

Tablet or Phone Landscape View/WAC Lighting App View

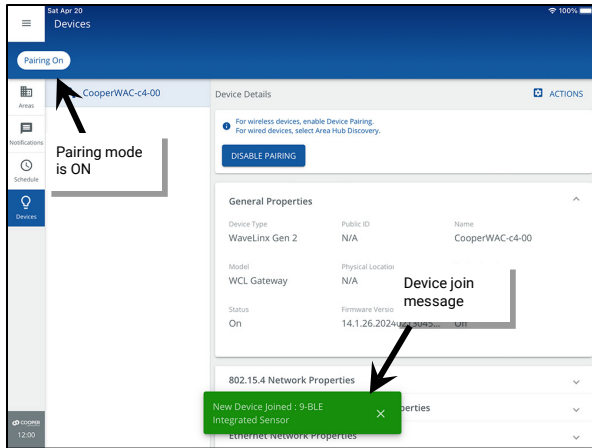


Phone Portrait View



During the 60-minute pairing period, WaveLinx PRO devices and the WaveLinx Low-Voltage Power Module should pair with the WaveLinx Area Controller. Devices should exhibit the successful paired device behavior described in the device reference sheets.

¹⁸² The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.



The screen will indicate that the WaveLinx Area Controller is in pairing mode. As devices join, messages may briefly display on the screen.

Refresh the app display by selecting a different menu option, and then navigating back to **Devices** to display the newly paired devices.

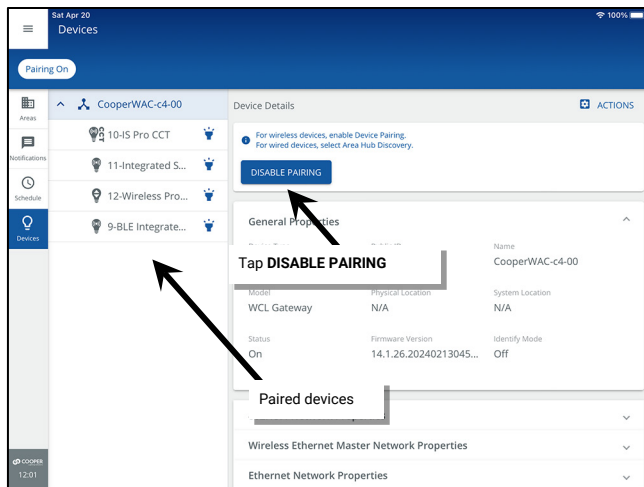
The WaveLinx Area Controller will exit pairing mode automatically after 60 minutes or can be manually exited from the app or onboard PAIR button. The devices that have been paired will display after refreshing the **Devices** screen.

5: Allow the pairing mode's 60-minute automatic time-out period to expire, or manually cancel pairing mode. To manually cancel pairing mode, press and release the PAIR button (1 second press) or use the mobile app to **DISABLE PAIRING**.¹⁸³ The blue 802.15.4 LED ⁽⁹⁾ should remain ON continuously when in normal operation.

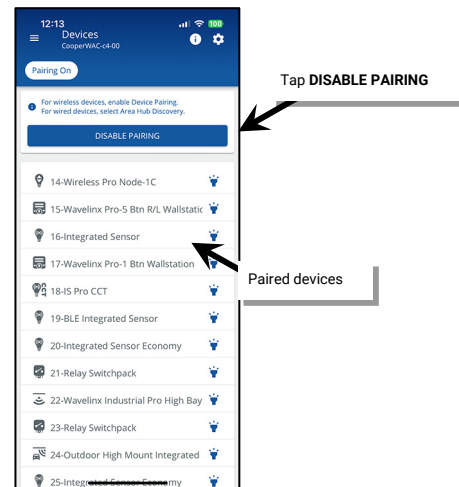
6: Verify that all WaveLinx PRO and LV devices paired with the WaveLinx Area Controller successfully. The WaveLinx Area Controller can be placed back in pairing mode to check device pairing. Refer to the device reference sheets beginning on page 14 for details on each device's expected successful pairing behavior.

Repeat the procedures in this section for each WaveLinx Area Controller in the facility.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



Operation of Devices within the Construction Area

As part of the construction area, WaveLinx PRO and LV devices operate with basic default operation. For details on a specific device's expected behavior, refer to the device reference sheet for that device.

- Once construction area pairing is complete, all paired WaveLinx PRO and LV devices will operate as one large area or room.
- Any WaveLinx PRO Wallstation in the area will operate all the paired lighting (WaveLinx PRO or LV Integrated Sensors, WaveLinx PRO Tilemount Sensors, WaveLinx PRO Nodes, WaveLinx PRO Wireless Fixtures, WaveLinx PRO Switchpacks, WaveLinx PRO Outdoor Lighting Control Modules) per the default scenes and programming.
- WaveLinx PRO Receptacles paired to a WAC2 (Gen 2) will operate by manual pushbutton and will not be controlled by other devices until programmed in the WaveLinx App.

¹⁸³ The WaveLinx App can also be used to place a WaveLinx Area Controller into pairing mode or to exit pairing mode if the WaveLinx Area Controller is not in an easily accessible location.

- All WaveLinx PRO and LV occupancy sensors work together. Any occupancy sensor sensing motion will turn the entire group ON (default level) and will keep loads ON until no occupancy is detected throughout the entire area. Once occupancy ceases, after 20 minutes, controlled loads will turn OFF.
- Daylight dimming is disabled for all WaveLinx PRO and LV devices in the construction group. This includes interior and exterior devices.
- White tuning loads connected to WaveLinx PRO Switchpacks may adjust color temperature with commands from WaveLinx PRO Wallstations or occupancy sensors until programmed. White tuning loads connected to WaveLinx PRO Nodes and advanced model Integrated Sensors (IS Pro CCT) may remain at 3500K until programming is adjusted.
- Contact closure devices connected to WaveLinx PRO Universal Voltage Dimming Switchpacks will not function until programmed.

Discover the WaveLinx CAT Area Hub and Add CAT Devices

The WaveLinx Area Controller connects with the WaveLinx CAT Area Hub easily to allow quick configuration of connected CAT devices. The WaveLinx Area Controller must be using minimum version 14 firmware/software to operate with WaveLinx CAT devices. Use the steps in this section to:

- Part 1: Perform the Initial Configuration Steps for WaveLinx with CAT Devices
- Part 2: Establish WaveLinx App Communication with a WaveLinx Area Controller
- Part 3: Discover the WaveLinx CAT Area Hub and Add CAT Devices

Part 1: Perform the Initial Configuration Steps for WaveLinx with CAT Devices

Steps in this section will refer to the WaveLinx Device Reference Sheets or other manual sections. Refer to the reference sheets for the devices being used on the site as well as the other manual sections.

- 1: Perform the initial configuration steps for the WaveLinx Area Controller being used. See "Initial Configuration Steps for the WaveLinx Area Controller 2 (Gen 2)" on page 18 for step-by-step directions. The WaveLinx WAC (Gen 1) is not compatible with WaveLinx CAT Devices.
- 2: Ensure that the WaveLinx Area Controller firmware is version 14 or above. Refer to "Viewing and Updating Firmware of the WaveLinx Area Controller and WaveLinx Devices" on page 306 for step-by-step directions on viewing the current WaveLinx Area Controller firmware and updating it if below the minimum requirement of version 14.
- 3: Perform the initial configuration steps for the WaveLinx Area Hub(s) being used. See "Initial Configuration Steps for the WaveLinx Area Hub" on page 25 for step-by-step instructions.
- 4: Ensure that all WaveLinx CAT devices are installed and powered. Verify that each device shows the proper out-of-the-box behavior as described in the device reference sheets beginning on page 14.

Part 2: Establish WaveLinx App Communication with a WaveLinx Area Controller

The WaveLinx Mobile App or the WaveLinx WAC Lighting App will be used to add WaveLinx CAT devices to the WaveLinx Area Controller and then to administer the system.

Before using the WaveLinx Mobile App, perform all the steps from "Part 1: Perform the Initial Configuration Steps for WaveLinx with CAT Devices" in the previous section. Once these steps are completed, proceed with the login.

Use the WaveLinx Mobile App or the WaveLinx WAC Lighting App to connect to the WaveLinx Area Controller, logging in as the administrative user. If using the WaveLinx Mobile App, refer to "WaveLinx Area Controller Login using the WaveLinx Mobile App" on page 106 for instructions. If using the WaveLinx WAC Lighting App, refer to "Logging in to the WaveLinx WAC Lighting App" on page 112 for instructions.

Quick Links for Common Questions

- I previously logged in on my mobile device as a personal control user and saved my credentials. Now I need to log in as the administrator user. How do I switch users? See the answer on page 362.
- How do I change the default password for the user? See the answer on page 297.
- How do I create additional users? See the answer on page 296.
- When I open the Mobile App, I get an error message. What should I do? See the answer on page 362.

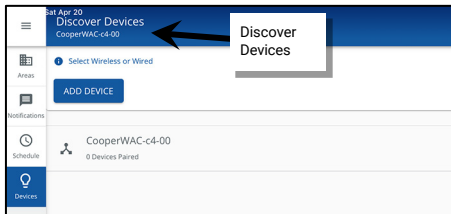
Part 3: Discover the WaveLinx CAT Area Hub and Add CAT Devices

To be able to modify settings of the WaveLinx CAT Devices in the WaveLinx Mobile App or WaveLinx WAC Lighting App, the Area Hub must first be discovered and then the devices added. This process is done using Ethernet communications. Ensure that the Area Hub and WaveLinx Area Controller can be accessed in the same IP Subnet.

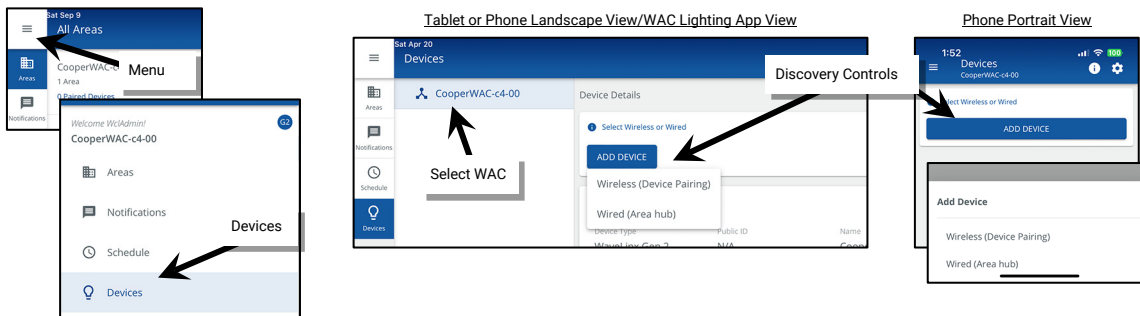
Pairing Mode is not used with WaveLinx CAT devices. Unlike WaveLinx PRO and WaveLinx LV devices, WaveLinx CAT devices are not placed in the default Construction Area. Instead, an area is automatically created for each used Area Hub port when the Area Hub is added. Any CAT device connected to the same Area Hub port will be assigned to that port's area. Any settings defined for the WaveLinx CAT devices prior to being connected to the Area Hub and WAC will also import with the devices and be assigned in the port area.

To discover the Area Hub and add devices:

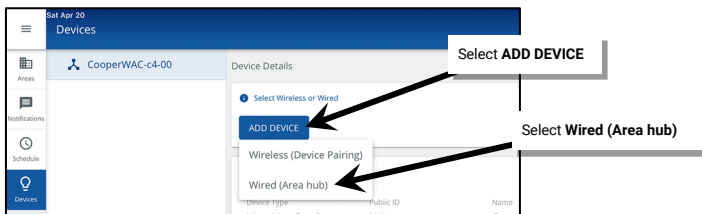
- 1: Open the **WaveLinx Mobile App** and **Login** to the WaveLinx Area Controller that will be controlling the WaveLinx CAT devices.
- 2: Confirm that the **Discover Devices** view is displayed.



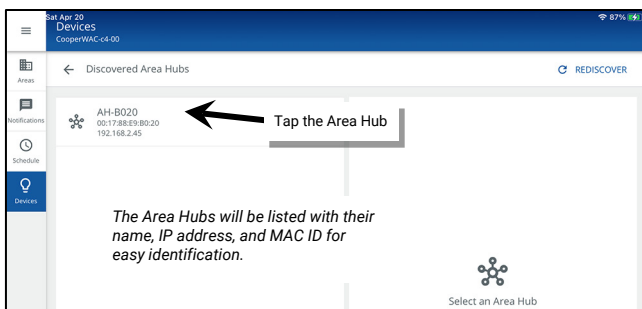
If **Discover Devices** is not automatically displayed, select **menu** ≡, and tap **Devices**. For tablet devices or devices being used in landscape view, tap on the WaveLinx Area Controller. For smaller devices using portrait view, the **Discovery** controls for the Area Controller will already be at the top of the screen.



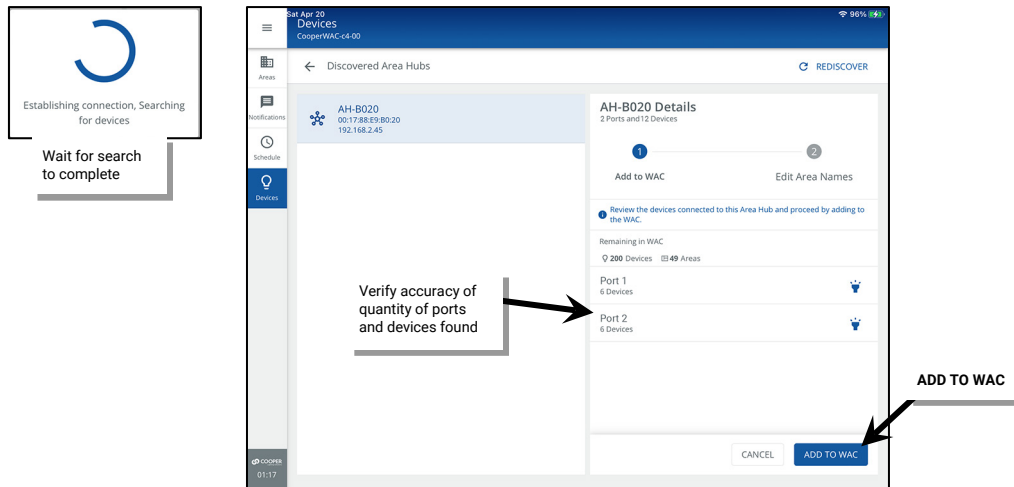
- 3: Tap **ADD DEVICE** and select **Wired (Area Hub)** to perform the Area Hub search.



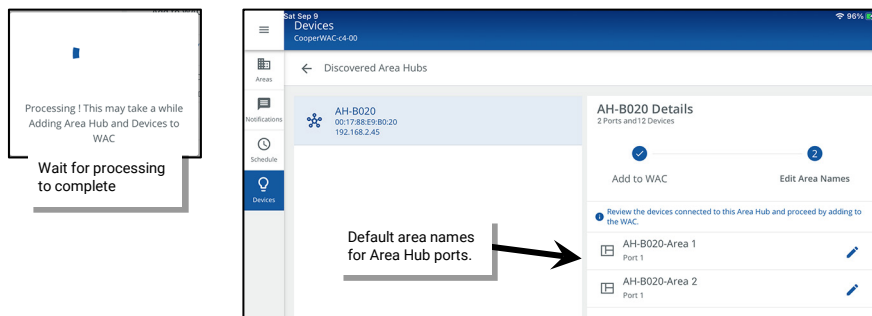
- 4: Wait for the search to complete and then review the Area Hub list; ensure that the desired area hub(s) is displayed by reviewing the area hub name, IP address, and/or MAC address. Tap the row for the desired **Area Hub**.



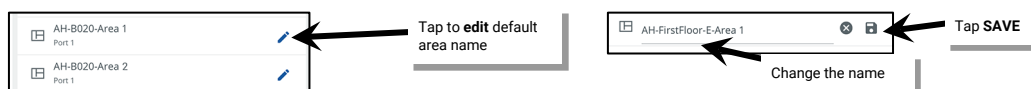
5: Wait for the search to be completed (may take several minutes) and then review that the active ports and device quantities are accurate. Tap **ADD TO WAC**.



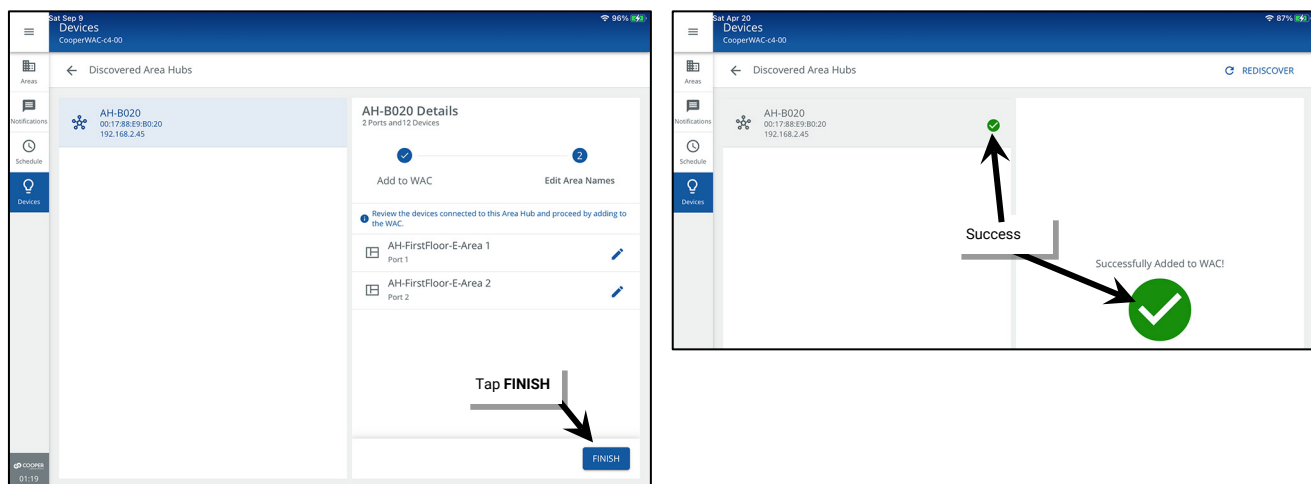
6: Once processed (may take several minutes), the default area names given to each of the Area Hub's ports will be displayed.



7: (Optional). Tap **edit** beside the area name to rename it for the port's controlled area (typically the room name/description) and then. Tap **save** at the end of the name row. Repeat for each area name.



8: Tap **FINISH** to complete reading the devices and verify that a green checkmark or success message is displayed next to the Area Hub name.



Repeat these steps to add additional Area Hub devices to the WaveLinX Area Controller

Note: The Area Hub import keeps track of quantity of imported Area Hubs (maximum 6), the available areas in the WaveLinx Area Controller (maximum 49 created areas) as well as the available quantity of devices (maximum 200).

- If there are already 6 Areas Hubs imported on one WAC and another one is discovered, the message “Area hub exceeds WAC limit” will be displayed and the Add button will be disabled.
- If the Area Hub import will cause the Areas or devices to exceed the maximum amount, the message “Area Hub exceeds WAC limit” will be displayed and the button to add the Area Hub to the WaveLinx Area Controller will be disabled.

Recommended: Visually check each CAT device for the correct LED behavior for an added or networked device. The LEDs of the Area Hub and CAT Devices will reflect the new networked behavior. Refer to the device reference sheets beginning on page 14 for details on each device’s expected behavior.

Part 4: (Optional) Move WaveLinx CAT Devices to the Construction Area for Reassignment

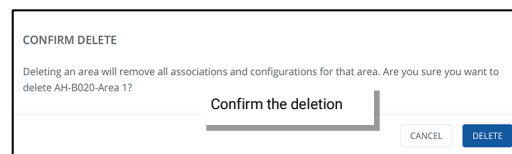
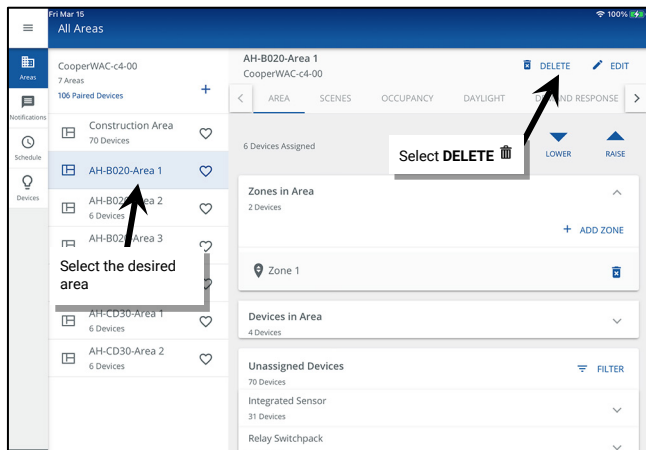
Unlike WaveLinx PRO and WaveLinx LV devices, WaveLinx CAT devices are not placed in the default Construction Area. Instead, an area is automatically created for each used Area Hub port when the Area Hub is added. Any CAT device connected to the same Area Hub port will be assigned to that port’s area. **If the devices that operate one room in the facility are all connected to the same Area Hub port, the devices do not need to be reassigned. Skip this section.**

If WaveLinx CAT devices need to be reassigned to an area other than the port area they are assigned to, they can be moved from the port area to the Construction Area where they can be assigned like any other WaveLinx device.

Option 1: Move All CAT Devices and Delete the Area

If all the CAT devices in the created area will be reassigned follow these steps:

- 1: In the **All Areas** list, select the area that contains the devices.
- 2: Select **DELETE** and then confirm the deletion. The area will be deleted and all devices in that area will be moved to the Construction Area.

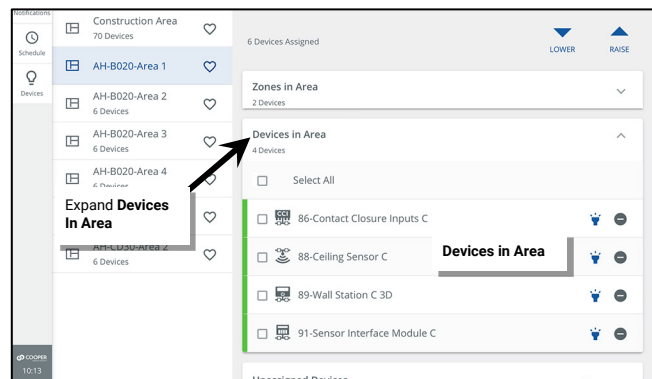
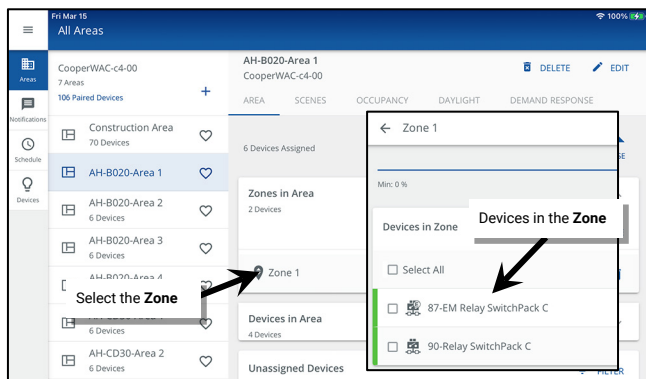


Repeat this process for other WaveLinx CAT areas and devices as needed.

Option 2: Move Specific CAT Devices and Keep the Area

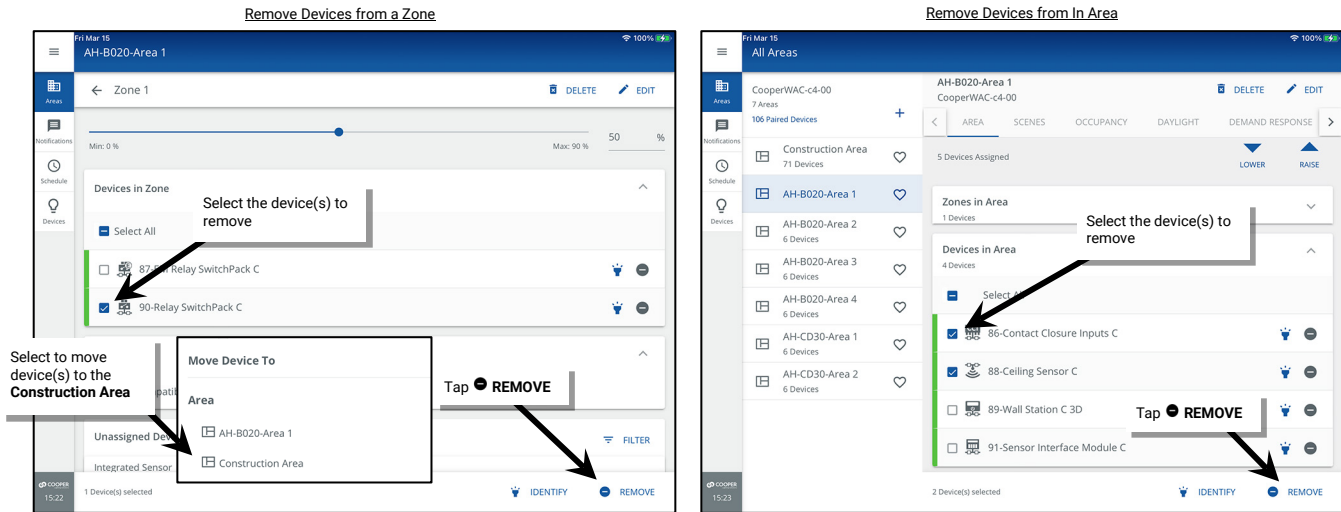
If specific CAT devices will be reassigned but others will remain in the area:

- 1: In the **All Areas** list, select the area that the WaveLinx CAT device is assigned to. For a lighting control device such as an integrated or tilemount sensor, switchpack device, node device, control module or receptacle, tap on the **zone** and locate the device(s). For an input device such as a wallstation, contact closure input device, ceiling sensor, or sensor input module, locate the device(s) in the **In Area** section.



2: Select the desired device(s), and then tap **REMOVE**.


- If removed from a **zone**, when prompted, select **Construction Area**.
- If removed from the **In Area** section, the devices will automatically be moved to the Construction Area.

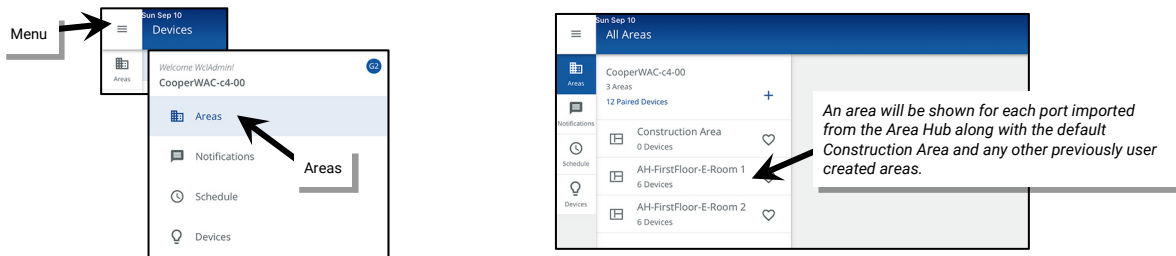


Repeat this process for other WaveLinx CAT areas and devices as needed.

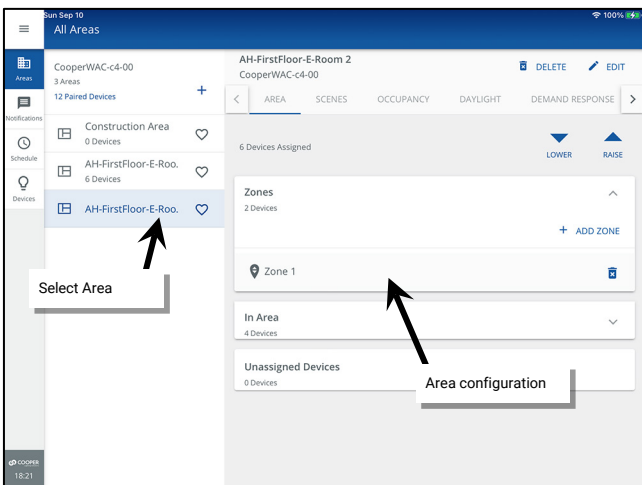
View the WaveLinx CAT Areas and Devices

To view the automatically created Area Hub port areas and WaveLinx CAT devices:

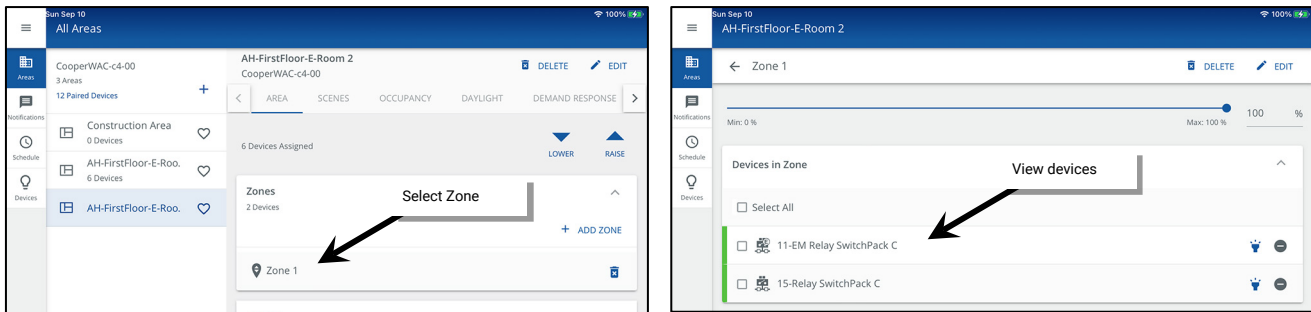
- 1: Open the **WaveLinx Mobile App** and **Login** to the WaveLinx Area Controller.
- 2: If the area list is not already displayed, from the menu , select **Areas** to display the **All Areas** list.



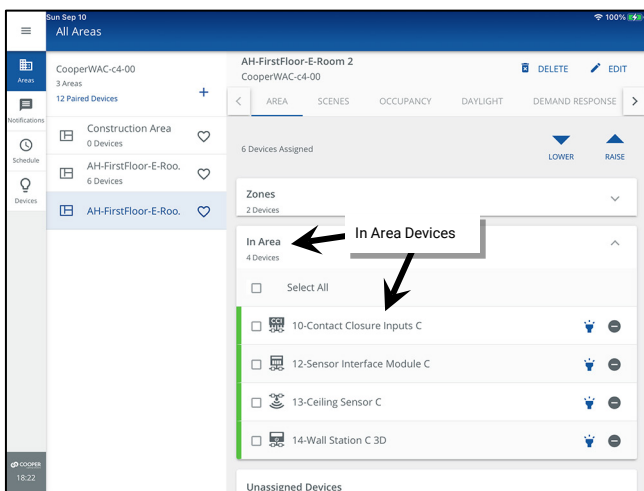
3: Tap any area to display the area's configuration.



4: Tap any **Zone** to display any load controlling devices that are assigned to that zone. Tap a device to view it. Tap **back** < at the top of the screen to return to the area.



5: Tap **In Area** to show additional devices such as wallstations, ceiling sensors, and interface modules. Tap a **device** to view it.



Operation of CAT Devices in the Imported Area Hub Port Area

Unlike WaveLinx PRO and WaveLinx LV devices, WaveLinx CAT devices are not placed in the default Construction Area unless specifically moved there. Instead, an area is automatically created for each used Area Hub port when the Area Hub is added. Any CAT device connected to the same Area Hub port will be assigned to that port's area.

- If WaveLinx CAT devices have not been programmed and are still in their factory default state when the Area Hub is connected the WAC, the expected operation is:
 - All imported lighting load control devices (Relay Switchpack or Emergency Relay Switchpack) will be assigned to Zone 1, the default dimmable zone.
 - Any CAT Wallstation in the imported port area will operate the lighting in the area according to the default button configuration. See the WaveLinx CAT Wallstation reference sheet on page 80 for details on the default button commands.
 - All imported CAT Occupancy Ceiling Sensors or Occupancy Sensors tied to a CAT Interface Module are automatically assigned to the area's Occupancy Set to work together. Any occupancy sensor sensing motion will turn the entire area ON (default level) and will keep it ON until no occupancy is detected throughout the entire area. Once occupancy ceases, after 20 minutes, controlled loads will turn OFF.
 - Daylight dimming is disabled and will not function until programmed.
 - Contact closure inputs connected to a CAT Contact Closure Module will not function until programmed.

- All scene commands will default to the following light levels:

Scene	Dimmable Zone Response
Scene 0	0%
Scene 1	100%
Scene 2	70%
Scene 3	50%
Scene 4	30%
Scene 5	10%
Scene 6	1%
Scene 7 through 15	Not programmed ¹⁸⁴

- Demand Response behavior is assigned to the default dimmable lighting Zone 1. By default, if a demand response signal or test is received, all dimmable loads will reduce by 20% light output.
- If WaveLinx CAT devices have been programmed previously using the standalone WaveLinx CAT Mobile App, any settings defined for the WaveLinx CAT devices prior to being connected to the Area Hub and WAC will import with the devices to the port's area. This includes created zones, scene levels, occupancy set, and daylight set settings.

WaveLinx CAT devices can be moved to other zones and areas and can be configured with different settings like any WaveLinx device. Refer to "Customizing Default Programming" on page 164 for additional information.

¹⁸⁴ Scenes 7 through 15 are not programmed and hidden from general users by default. The administrator must activate, and then enable the zones and programming for each zone if they are required for an application.

Creating WaveLinx Areas and Zones

Once WaveLinx devices have been added to the WaveLinx Area Controller, the WaveLinx Mobile App or the WaveLinx WAC Lighting App¹⁸⁵ will be used to administer the system.

Any WaveLinx PRO, CAT or LV device can be assigned to any area created in the WaveLinx Area Controller. Use the steps in this section to:

- Part 1: Establish WaveLinx App Communication with a WaveLinx Area Controller
- Part 2: (Optional) Move WaveLinx CAT Devices to the Construction Area for Reassignment
- Part 3: Create the Areas and Zones Needed for the Project
- Part 4: Organize the WaveLinx Devices into Areas and Zones
- Part 5: Finalize WaveLinx Area Controller Setup

Part 1: Establish WaveLinx App Communication with a WaveLinx Area Controller

To open the WaveLinx Mobile App or the WaveLinx WAC Lighting App:

- 1: If the WaveLinx Mobile App was not used to add the WaveLinx devices, make sure to perform the initial setup of the WaveLinx Area Controller recommended in “Initial Configuration Steps for the WaveLinx Area Controller 2 (Gen 2)” on page 18.
- 2: Use the WaveLinx Mobile App or the WaveLinx WAC Lighting App to connect to the WaveLinx Area Controller, logging in as the administrative user.
 - If using the WaveLinx Mobile App, refer to “WaveLinx Area Controller Login using the WaveLinx Mobile App” on page 106 for login instructions.
 - If using the WaveLinx WAC Lighting App, refer to “Logging in to the WaveLinx WAC Lighting App” on page 112 for login instructions.

Quick Links for Common Questions

- I previously logged in on my mobile device as a personal control user and saved my credentials. Now I need to log in as the administrator user. How do I switch users? See the answer on page 362.
- How do I change the default password for the user? See the answer on page 297.
- How do I create additional users? See the answer on page 296.
- When I open the Mobile App, I get an error message. What should I do? See the answer on page 362.

Part 2: Create Standard Areas and Zones for the Project

For WaveLinx devices to control lighting in the correct rooms, the devices must be organized. This section shows how to use the WaveLinx App to create standard areas and zones that the WaveLinx devices will be assigned to.

- A **standard area** is a space within a facility with devices that operate separately from other spaces (a room). The **standard area** will contain the devices that operate to control that room.
- A **zone** is a group of devices that will be controlled together in the exact same way within the **standard area**. For instance, fixtures that are installed in the same row are often grouped together to allow for uniform operation. Controlled receptacles in the same room might be placed in a receptacle zone so they switch ON and OFF with the same commands. Zones are also used to separate the color temperature control of tunable white devices from the ON/OFF and dimming control functionalities.

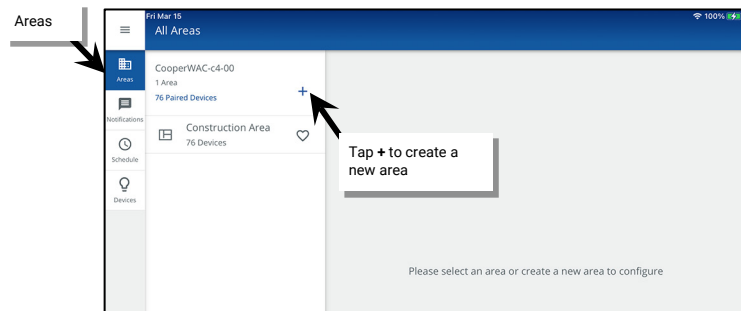
¹⁸⁵ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Step 1: Create a Standard Area

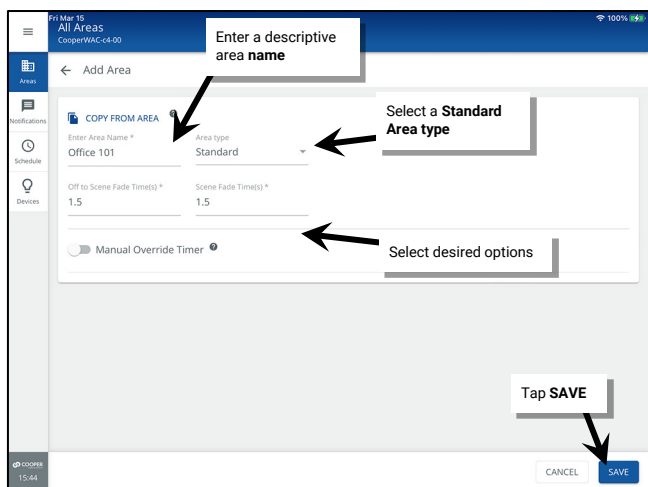
A **standard area** is a space within a facility with devices that operate separately from other spaces (a room). The **standard area** will contain the devices that operate to control that room.

This step will walk through the process of creating the standard areas.

1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **Areas** option, tap **+** to create a new area.

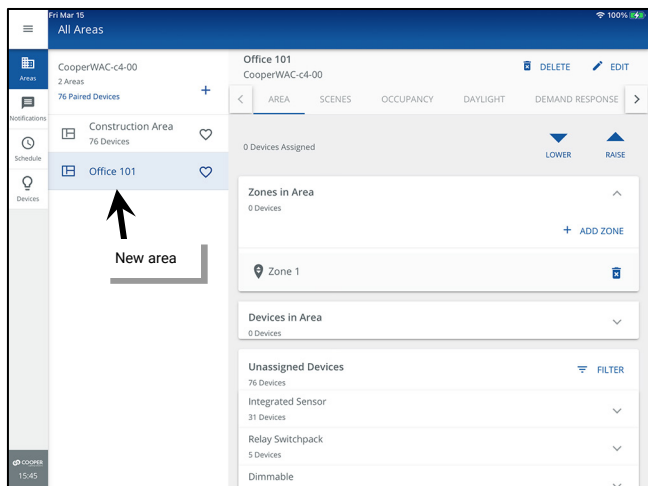


2: Enter a descriptive name for the area, select the **Standard Area** type and select any necessary options (see "Understanding and Modifying Area Settings" on page 186 for option details). Tap **SAVE** to create the new area.

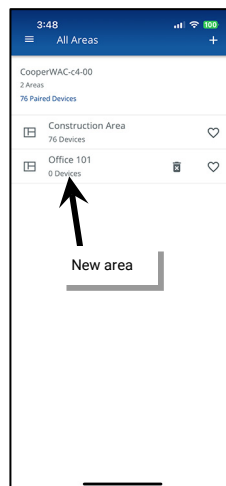


The new area will appear in the **All Areas** list.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



Step 2: Create a Zone in a Standard Area

A **zone** is a group of devices that will be controlled together in the exact same way within the **standard area**. For instance, fixtures that are installed in the same row are often grouped together to allow for uniform operation. Controlled receptacles in the same room might be placed in a receptacle zone so they switch ON and OFF with the same commands. Zones are also used to separate the color temperature control of tunable white devices from the ON/OFF and dimming control functionalities.

There are four different types of zones that can be created in an area:

- Dimmable Zone: May contain any dimmable load connected to a dimmable WaveLinX device.
- Receptacle Zone: May contain switched controlled receptacle devices.
- Non-dimmable Zone: May contain non-dim load (switched load) devices.
- White Tuning Zone: May contain white tuning control devices.

This step will walk through the process of adding additional zones that are needed for a standard area, editing the existing zones, and deleting any unneeded zones. Refer to the Item Reference sheets beginning on page 15 for details regarding the default zones created per area and the supported quantity of zones for the WaveLinX Area Controller model being used at this site.

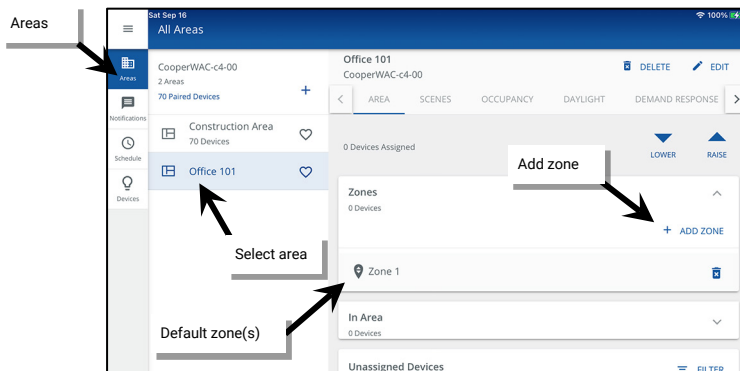
To create, modify or remove zones in a standard area:

1: Determine how many control zones need to be in the area.

- Each separately controlled lighting group will need a lighting zone.
- Controlled receptacles should be placed in a receptacle zone.
- VividTune fixture white tuning controls connected to advanced model Integrated Sensors (IS Pro CCT), a WaveLinX PRO Node channel, or to a Universal Voltage Dimming Switchpack should be placed in a white tuning control zone.

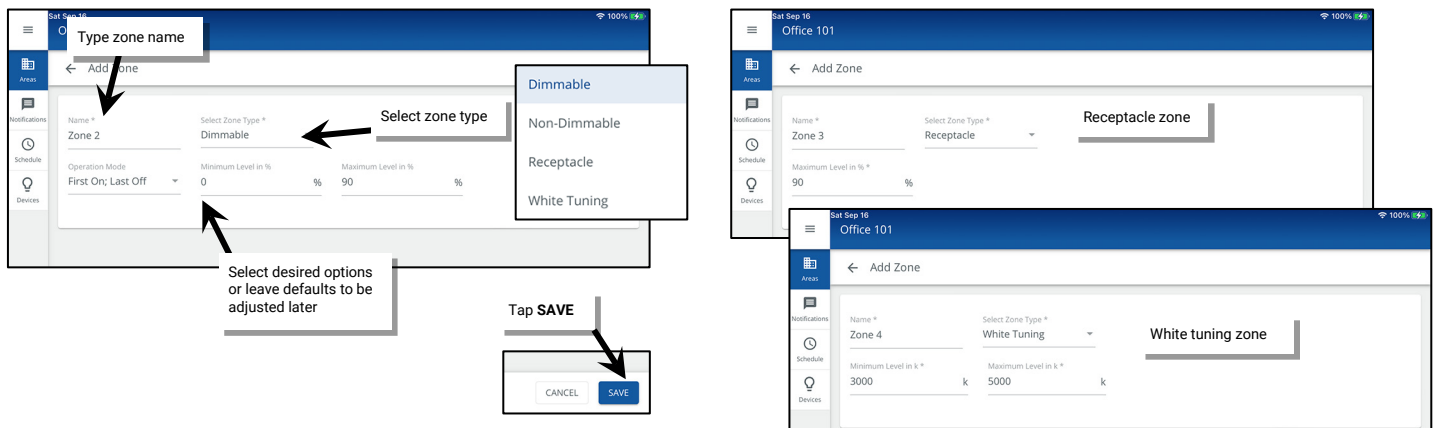
2: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator. In the **All Areas** list, tap the area name.

3: In the zone section, review the current zones/zone types. Tap **+** to create a new zone if necessary.

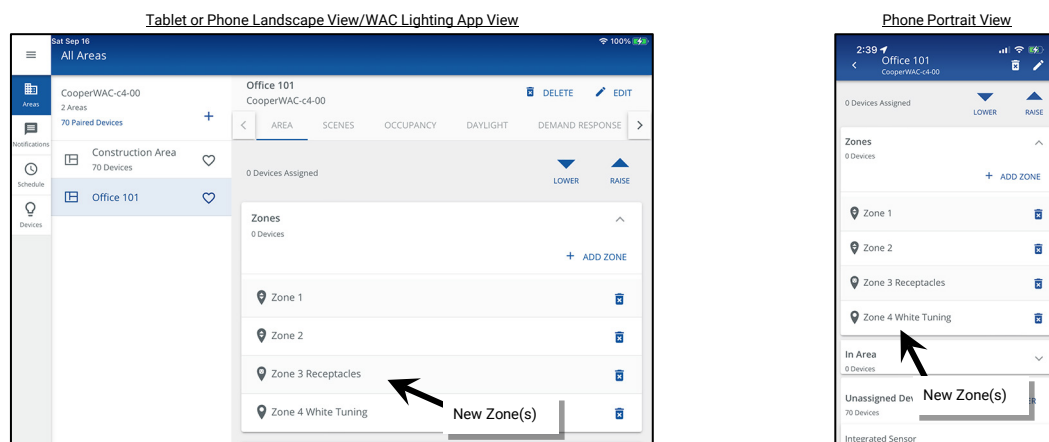


4: Type a descriptive name for the zone, and then select the zone type (dimmable, non-dimmable [switched], receptacle, or white tuning). **Zone type cannot be changed after initial setup.**

Make parameter selections or leave defaults in place to be adjusted later (see “Understanding and Modifying Zone Settings” on page 189 for explanation). For White Tuning zones, the max and min level fields, should match a Kelvin temperature range that all the white tuning fixtures support (refer to the fixture information for the supported ranges). Tap **SAVE**.

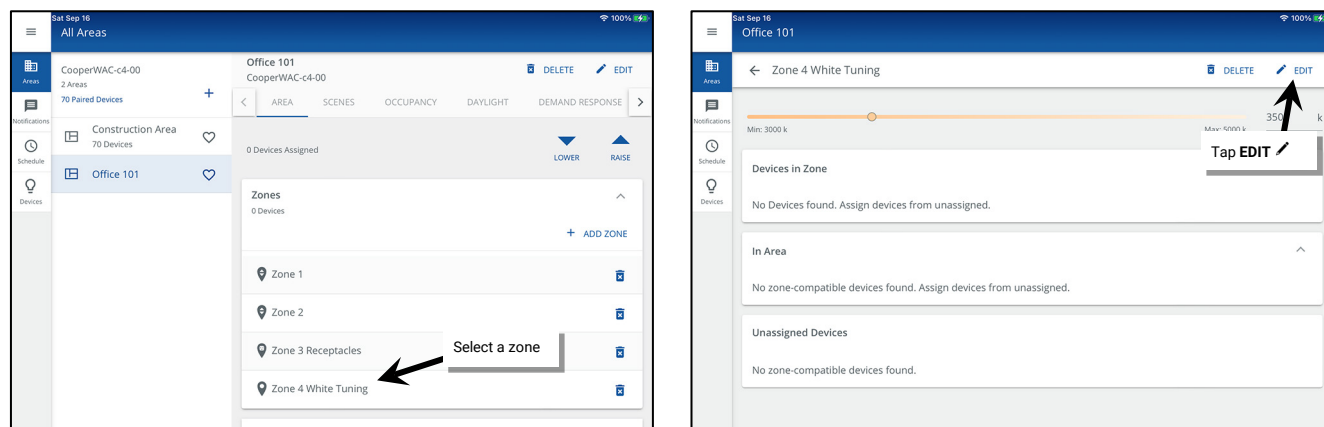


Once the zone is created, the new zone should appear in the area's zone list.

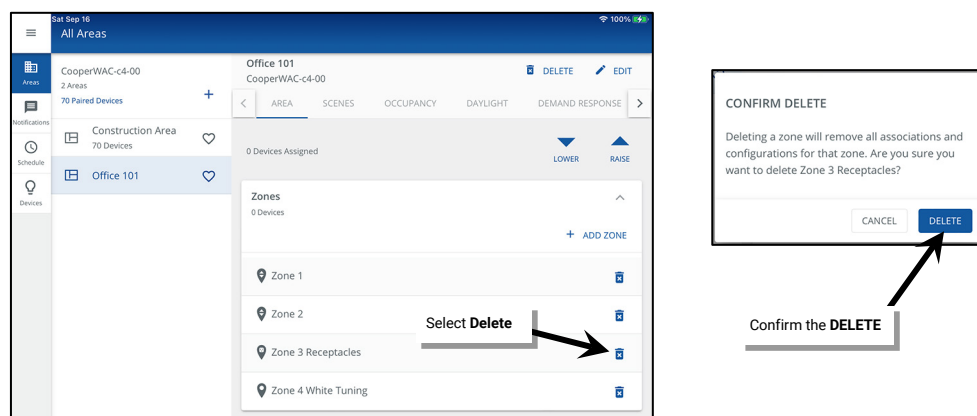


5: Repeat to add additional zones as needed.

6: (Optional) Modify default zones to adjust the zone name and behaviors by selecting the zone and tapping **EDIT** ✎.



7: (Optional) Delete any unused zones by tapping **DELETE** 🗑 in the zone's row.



IMPORTANT: Newly created dimmable, non dimmable and receptacle zones are automatically assigned to the default occupancy set. To change this automatic assignment, see "Adjusting Occupancy Set Controlled Zones" on page 215.

Step 3: Create Additional Standard Areas/Use the Copy Area Function

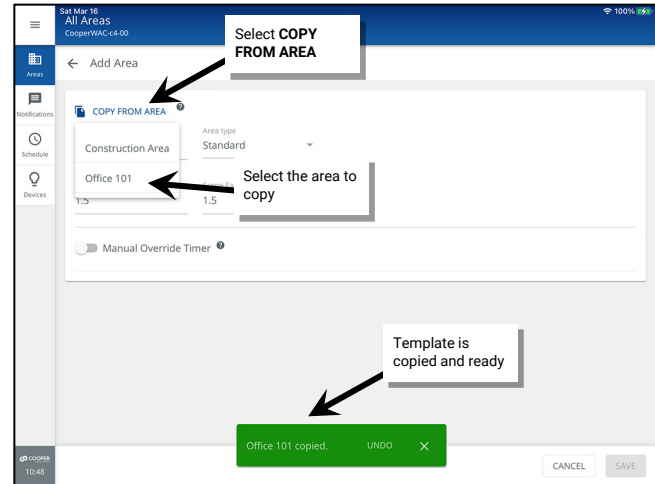
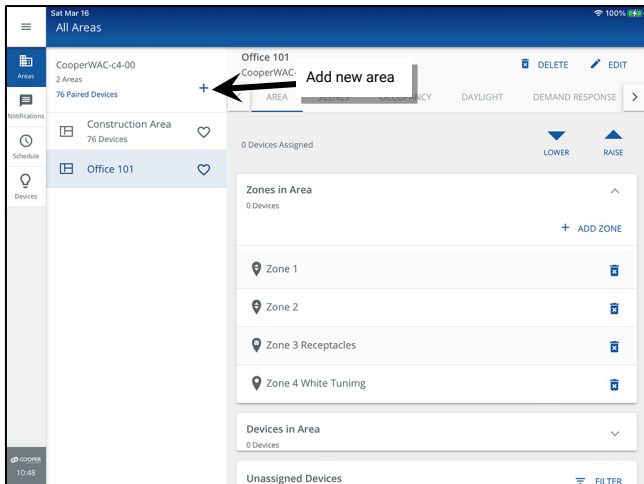
Repeat steps 1 and 2 in this section to create additional standard areas **OR** use the **Copy Area** function.

For sites that have multiple rooms with the same lighting layout and zones, one area can be copied to act as a template for other areas being created. After the area is copied, devices will need to be identified and assigned.

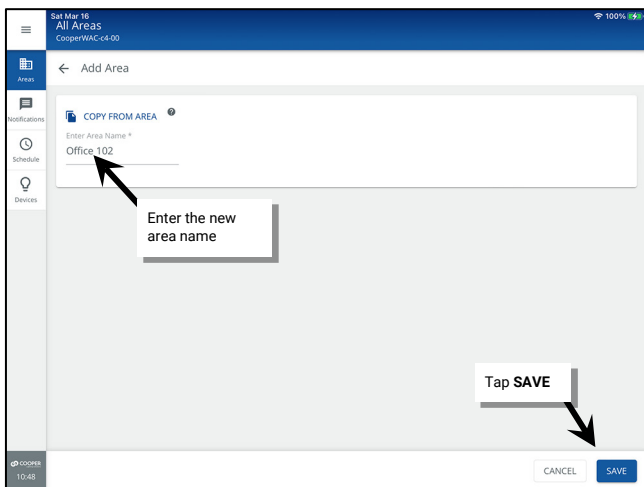
Before using this feature, customize the area that will be used for the template, assigning any specialized programming (refer to the section on “Customizing Default Programming” found on page 164 of this manual). Once the area is programmed use the following steps to use a copy of the area as a template for the new area.

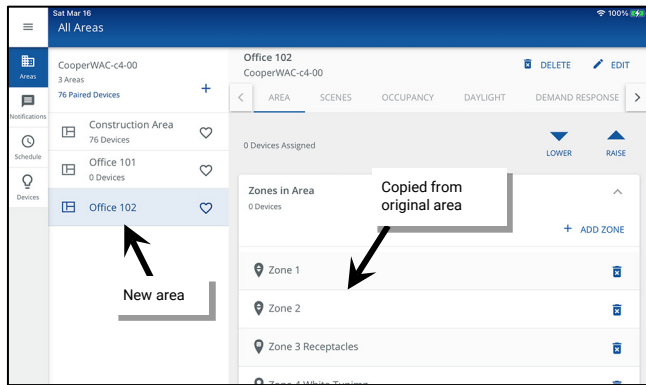
To copy an area’s settings to a new area:

1: In the area screen, tap the plus sign to add a new area. Then tap **COPY FROM AREA** and select the configured area. The screen should display that the area is copied, indicating that the template has been loaded and is ready for use.



2: Enter the new area’s name, and then tap **SAVE**.





The standard area will have the same configuration as the original standard area including:

- Zone quantities/parameters
- Scene levels
- Occupancy set quantities/parameters
- Open loop daylight set quantities/parameters¹⁸⁶
- Demand response parameters

3: Repeat these steps until all standard areas are created in the WaveLinx Area Controller.

Once the new area is created, assign the devices to the new area see “Organizing WaveLinx Devices into Areas and Zones” on page 145.

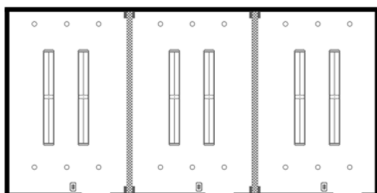
Part 3: Create Partitioned Areas and Assign Zones

An **Area** can be either a **standard area** or a **partitioned area**.¹⁸⁷ This section discusses the setup of a partitioned area and its zones. The steps in this section are only needed if the space has partitioned areas. **Skip to the next section if the site does not have any partitioned areas.**

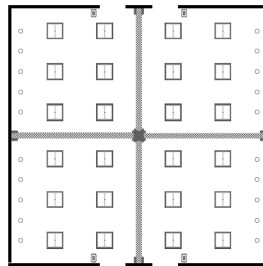
Important Partition Area Details

The WaveLinx Area Controller version 14.1.x.x and higher allows creation of **two** partitioned areas per WaveLinx Area Controller. A **partitioned area** is a space within the facility that may have moveable divider walls to allow creation of one large space or several smaller spaces called **sub areas**. Devices in the space may need to operate independently for a single sub area when divider walls are closed or may need to operate a combination of sub areas when walls are opened.

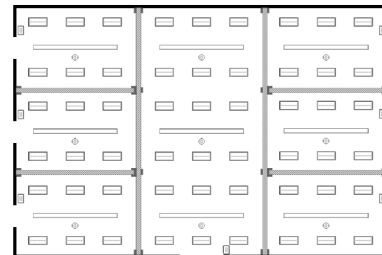
A partitioned area can have a maximum of **10 sub areas** and/or **10 divider walls**. This allows for accommodation of many different partitioning layouts such as those pictured below:



Example 1: 3 Sub Areas, 2 Partitions



Example 2: 4 Sub Areas, 4 Partitions



Example 3: 7 Sub Areas, 10 Partitions

¹⁸⁶ Closed loop daylight sets are not copied as they are device dependent.

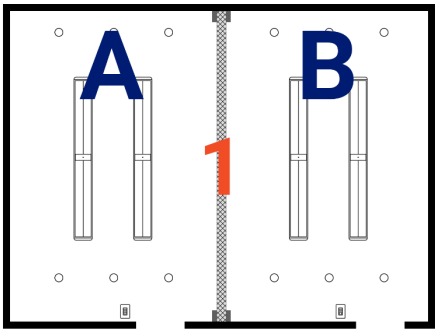
¹⁸⁷ The use of partitioned areas requires the use of a WAC2 (Gen 2) WaveLinx Area Controller with the minimum software version 14.1.x.x.

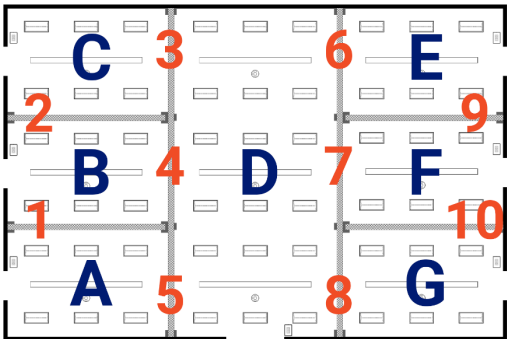
Additional Details

- An input should be assigned to each partition wall to issue the wall open and closed command. This input can be:
 - A wallstation button from any WaveLinx PRO or WaveLinx CAT wallstation
 - A contact closure into a compatible WaveLinx device such as the WaveLinx PRO Universal Voltage Dimming Switchpack with Dry Contact Input (WSP-CA-010) or the WaveLinx CAT Contact Closure Input Module (CCI-C-V)
- For proper operation, devices in each sub area that should operate together when walls are open should report to the same sub zone number to allow for uniform operation.
- When sub areas are joined by the opening of the wall, the wallstations in the joined sub areas will issue the programmed command to the original area and any joined sub areas.
- Occupancy set commands will also operate independent sub areas when the walls are closed. When the walls are open, if assigned occupancy set number is the same in the joined sub areas, the occupancy set will act as one occupancy set over the entire joined area.
- Daylight sets are set up at the main partitioned area. Daylighting will operate as defined independent of wall position.
- Demand response commands will issue as defined independent of wall position.
- Time schedule commands, touchscreen commands, and commands from devices that are not assigned to the sub areas will issue commands to the whole partitioned area (no sub area control) independent of wall position.

Step 1: Sketch a Preliminary Layout

For a simple rooms with a single wall between the partitioned sub areas, this step is probably not needed. For more complex spaces, identifying each area and wall and then documenting the areas for each wall join can be helpful prior to creating the partitioned area. See the examples below:

Example 1 Sketch: 2 Sub Areas, 1 Partition Wall		Wall Number	Sub Areas Joined
		Wall 1	A and B
		Wall 2	none
		Wall 3	none
		Wall 4	none
		Wall 5	none
		Wall 6	none
		Wall 7	none
		Wall 8	none
		Wall 9	none
		Wall 10	none

Example 2 Sketch: 7 Sub Areas, 10 Partition Walls		Wall Number	Sub Areas Joined
		Wall 1	A and B
		Wall 2	B and C
		Wall 3	C and D
		Wall 4	B and D
		Wall 5	A and D
		Wall 6	D and E
		Wall 7	D and F
		Wall 8	D and G
		Wall 9	E and F
		Wall 10	F and G

Example 3 Sketch: 8 Sub Areas, 7 Partition Walls	Wall Number	Sub Areas Joined
	Wall 1	A and B
	Wall 2	B and C
	Wall 3	D, A, B and C
	Wall 4	D and E
	Wall 5	E, F, G and H
	Wall 6	F and G
	Wall 7	G and H
	Wall 8	none
	Wall 9	none
	Wall 10	none

Once the preliminary layout is done, proceed to the next step.

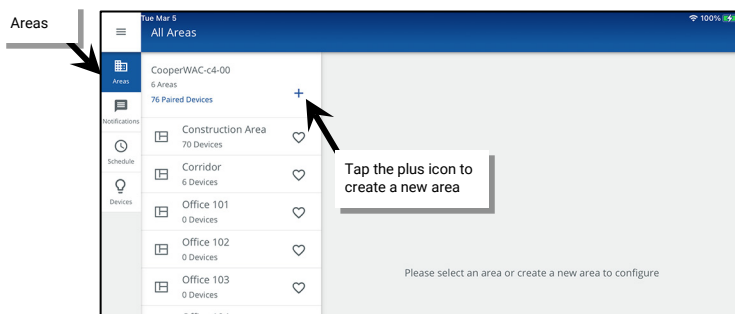
Step 2: Create a Partitioned Area

Use this section to create a partitioned area, assign the number of sub areas, assign the number of walls, define the joined sub areas for each wall and select the input that will be used to indicate an open or closed command.

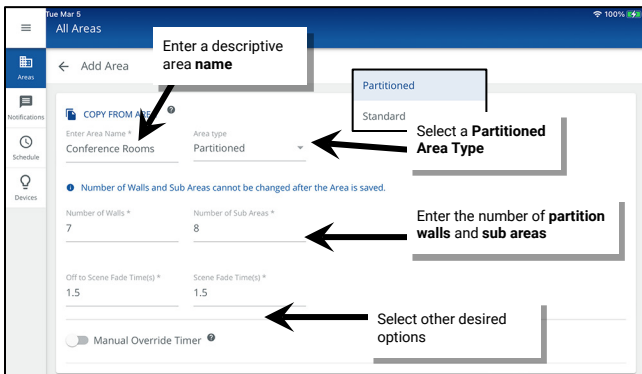
Before starting these steps make sure to have the sketch created in “Step 1: Sketch a Preliminary Layout” on page 138 available for reference. For the following steps, the following floorplan sketch will be used:

Example Sketch: 8 Sub Areas, 7 Partition Walls	Wall Number	Sub Areas Joined
	Wall 1	A and B
	Wall 2	B and C
	Wall 3	D, A, B and C
	Wall 4	D and E
	Wall 5	E, F, G and H
	Wall 6	F and G
	Wall 7	G and H
	Wall 8	none
	Wall 9	none
	Wall 10	none

1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **Areas** option, tap + to create a new area.



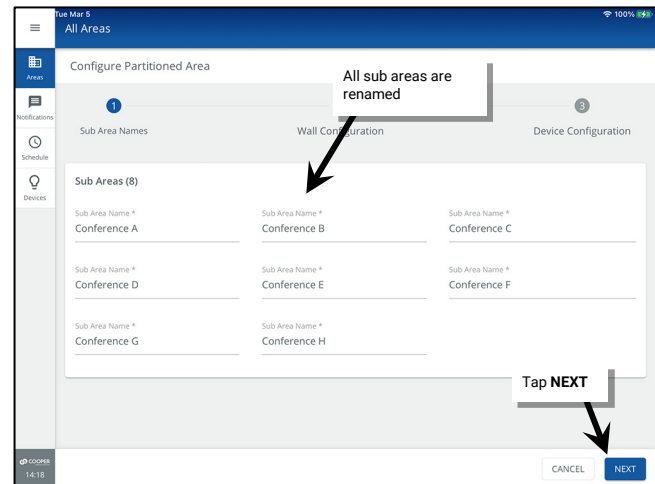
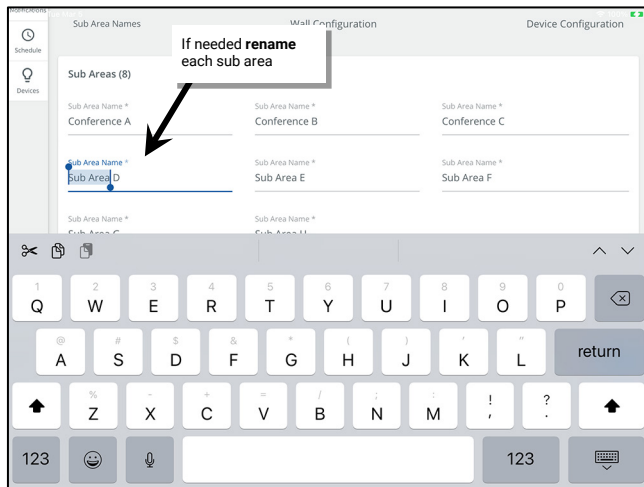
- 2: Enter a descriptive **name** for the partitioned area and then select the **Partitioned** Area Type.
- 3: Enter the **number of partition walls** and **number of sub areas** in the partitioned area and then select any additional necessary options “Understanding and Modifying Area Settings” on page 186 for option details). Tap **NEXT** to create the new area and advance to the next screen.



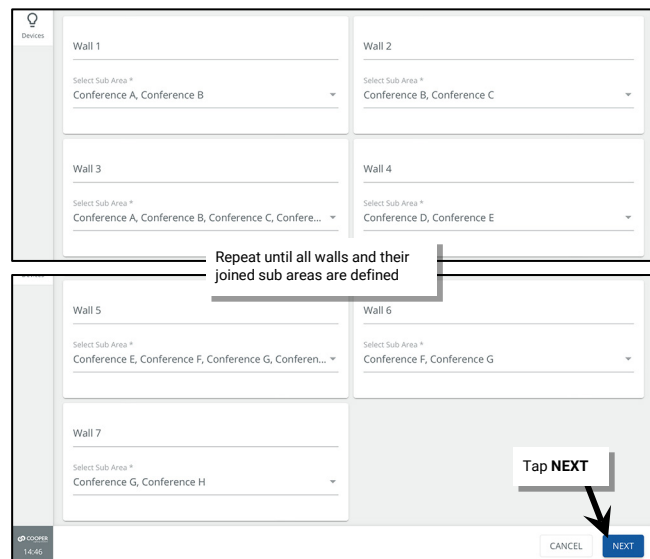
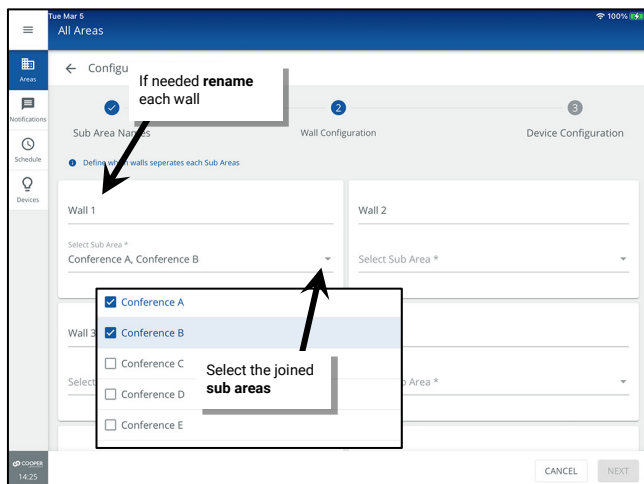
The number of walls and sub areas cannot be changed after the area is created. If the walls or sub areas are incorrect, delete the partitioned area and recreate it with the correct quantities of walls and sub areas.




- 4: If needed, adjust the default **Sub Area Names**. Tap a name and change to the desired name, repeating for each sub area. Tap **NEXT** once all sub area names are correct.

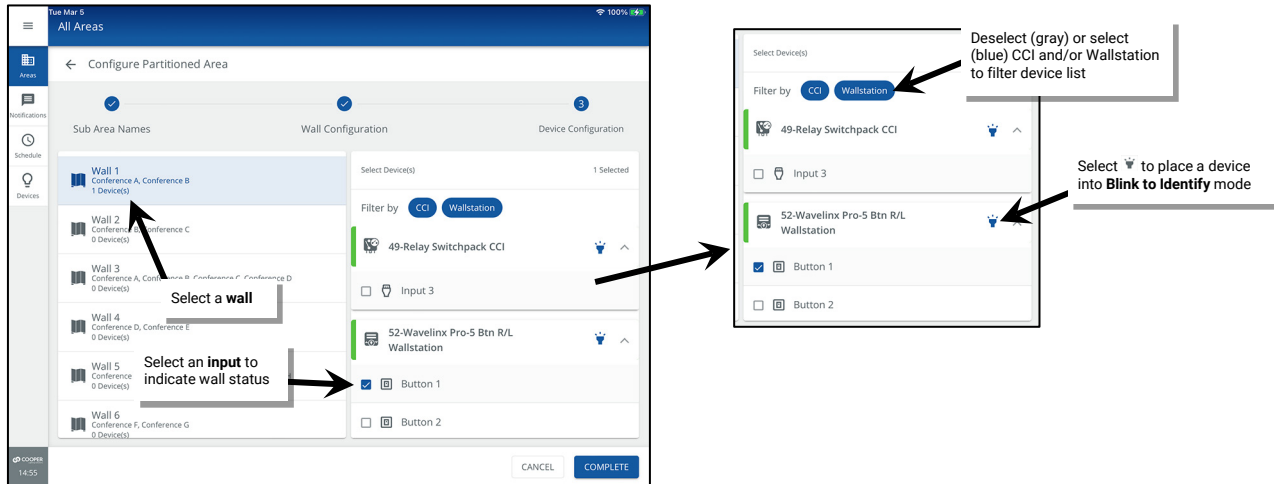


- 5: Perform the **Wall Configuration**. Tap any **Wall Name** to change the default name and then use the drop down to **select the sub areas** that the wall joins (must select at min. two sub areas, max. ten sub areas). Repeat until all wall names and sub areas are defined. Tap **NEXT** to move on to the next step.



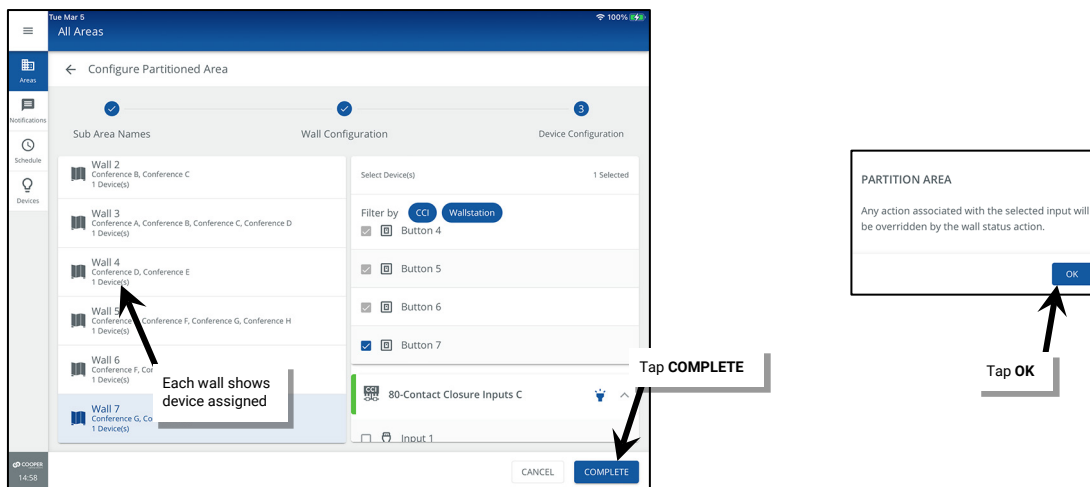
6: Perform the **Device Configuration** to select the input that will indicate that each wall is open or closed. Tap a **wall**. Compatible input devices will be displayed in the **Select Device(s)** list. Once the correct device is located, **check the input** that will be associated with this wall.

- The compatible device list will include CCI (contact closure input) and wallstation devices regardless of the area they are assigned to.
- Use the filter to streamline the view to **CCI** (contact closure input) devices or **wallstations**.
- For devices that support identification, select  to place a device into **Blink to Identify** mode to aid in identifying the device.



7. Repeat step 6 for each wall until an input is selected for each wall. Note that inputs that report to other walls will be selected and grayed out. Tap **COMPLETE**.

8: When prompted, tap **OK** to acknowledge that the defined input action will be replaced with the wall status action.



IMPORTANT: The device(s) that contain the inputs being assigned to the wall action **WILL NOT** be moved from their previously assigned area. If the devices are left in the construction area, there is risk of them being removed when devices are cleared from the construction area. To avoid this, make certain to assign the wall input device(s) to one of the partitioned sub areas. See page 149 for instructions.

Step 3: Create and Assign Zones in a Partitioned Area

Once the partitioned area is created, create the necessary zones for the application. The partitioned area contains one **Zone** (Zone 1) by default. Additional zones can be created as needed. In a partitioned area, **zones** are created at the main **Partitioned Area** screen. To maximize the number of zones available for other areas, the zones are then assigned as **sub zones** if they are needed in the **sub areas**.

A **zone** is a group of devices that will be controlled together in the exact same way. In a partitioned area, devices in each sub area that should operate together when partition walls are open should be assigned to the same zone number (sub zone) in each sub area allowing for a uniform response.

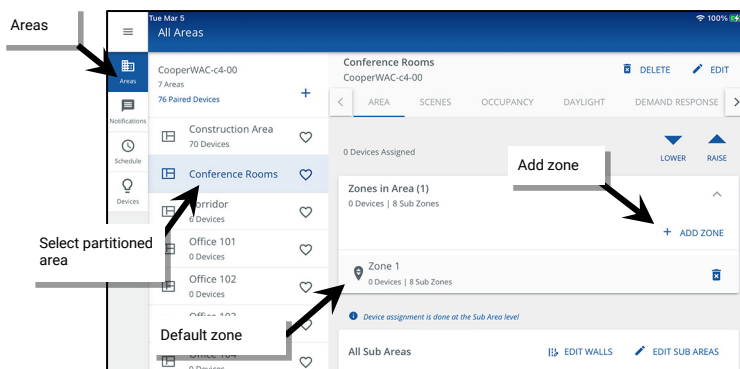
- If each sub area contains fixtures that should operate together when all walls are opened/all sub areas joined, then the fixtures will need to be assigned to the same zone number in each sub area.
- Controlled receptacles in the sub areas might be placed in the same receptacle zone in each sub area so they switch ON and OFF together when the room is joined.
- A zone might also be used to separate the color temperature control of tunable white devices from the ON/OFF and dimming control functionalities, again with the same zone being assigned to each sub area to allow for uniform control in a joined room.

There are four different types of zones that can be created in an area:

- Dimmable Zone: May contain any dimmable load connected to a dimmable WaveLinx device.
- Receptacle Zone: May contain switched controlled receptacle devices.
- Non-dimmable Zone: May contain non-dim load (switched load) devices.
- White Tuning Zone: May contain white tuning control devices.

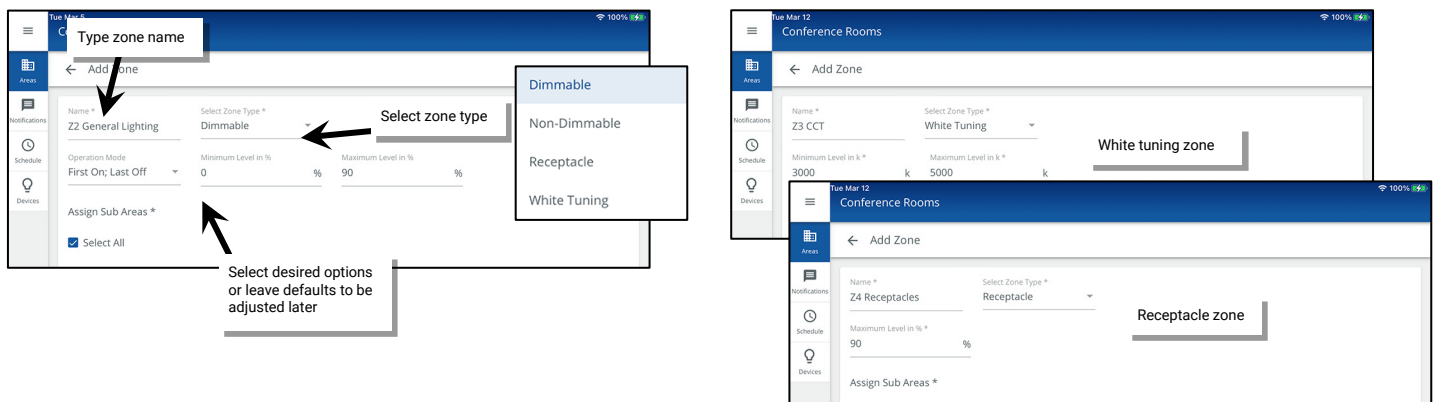
To add zones to a partitioned area and assign the zone to sub areas (sub zone):

- 1: Determine how many control zones need to be defined for proper operation when all the walls are OPEN and the sub areas are JOINED, i.e., one large open room. Each separately controlled group in the joined area will need its own zone. If WaveLinx controlled receptacles or white tuning capable devices/lighting is being used, make sure to account for the necessary receptacle and white tuning zones.
- 2: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **All Areas** list, tap the partitioned area name.
- 3: In the zone section, review the current zones/zone types. Tap **+** to add a new zone if necessary.

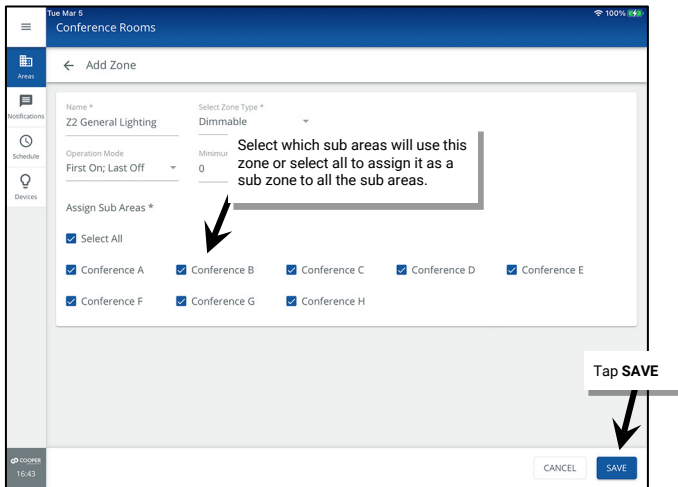


- 4: Type a descriptive name for the zone, and then select the zone type (dimmable, non-dimmable [switched], receptacle, or white tuning). **Zone type cannot be changed after initial setup.**

Make parameter selections or leave defaults in place to be adjusted later (see “Understanding and Modifying Zone Settings” on page 189 for explanation). For White Tuning zones, the max and min level fields, should match a Kelvin temperature range that all the white tuning fixtures support (refer to the fixture information for the supported ranges).

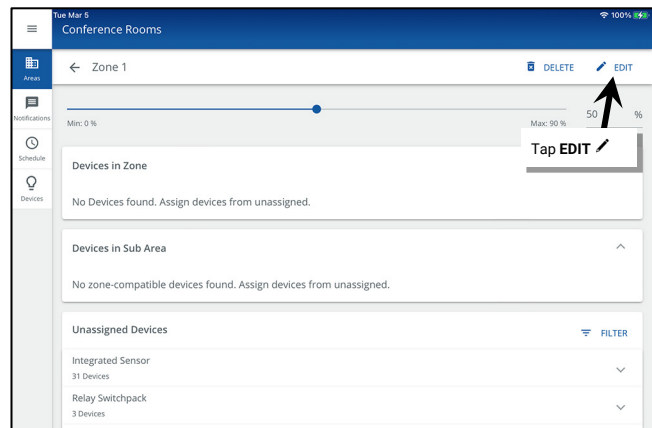
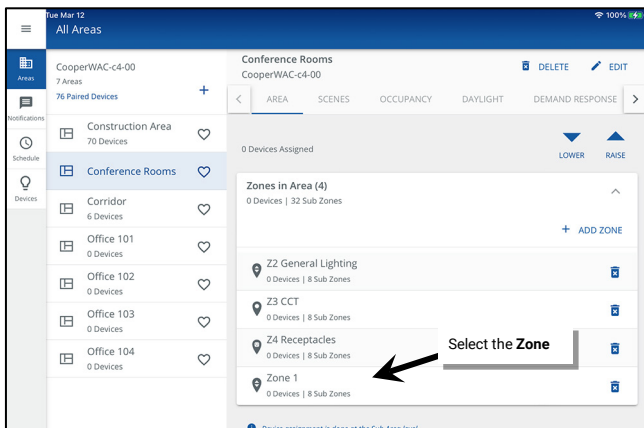


- 5: **Assign the Zone to the Sub Areas (sub zone)** that will have devices operating in it. Tap **Select All** or individually select the sub areas if the zone will not be used in some sub areas. For instance, if each sub area contains general lighting fixtures that will need to operate together when the room is joined, use **Select All** to assign the sub zone. If only some sub areas have general fixtures and other sub areas do not have them, select only the sub areas that need this zone to maximize the number of zones available for other areas. Tap **SAVE**.

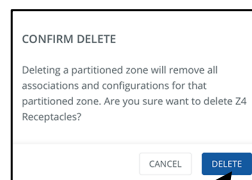
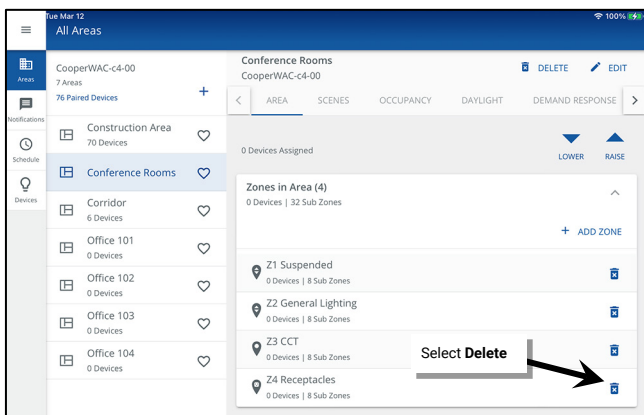


- 6: Repeat steps 3 through 5 until all needed zones are created.

- 7: If necessary, modify the default zone (Zone 1) to adjust the zone name and behaviors by selecting the zone and tapping **EDIT** . Note: The default zone is automatically assigned to all sub areas. To change this assignment, see “Moving a Device from on Sub Zone or Sub Area to Another” on page 180.



- 7: (Optional) Delete any unused zones by tapping **delete** in the zone's row.



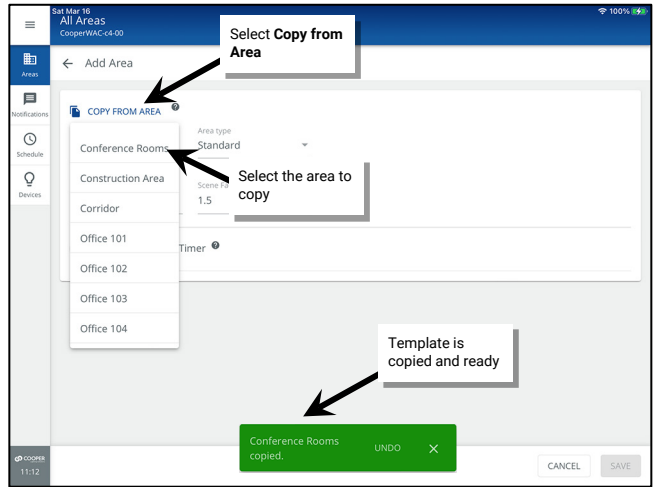
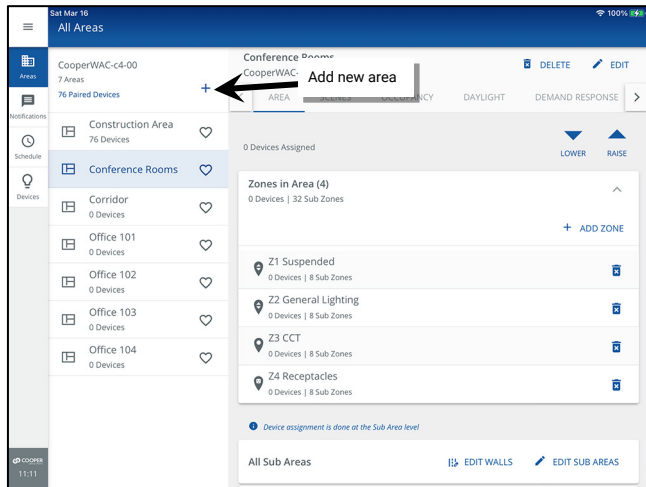
Step 4: Create an Additional Partitioned Area/Use the Copy Area Function

The WaveLinx Area Controller allows up to two (2) partitioned areas. Repeat steps 1 through 3 in this section to create one additional partitioned area **OR** use the **Copy Area** function if the other partitioned area will match the same layout as the original partitioned area.

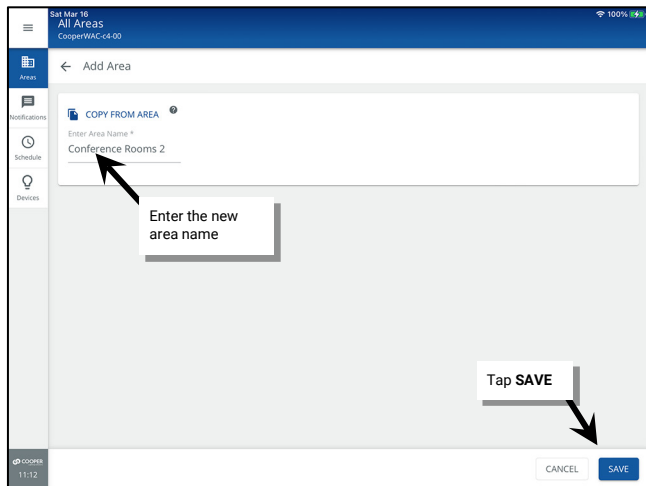
Before using this feature, customize the area that will be used for the template, assigning any specialized programming (refer to the section on “Customizing Default Programming” found on page 164 of this manual). Once the area is programmed use the following steps to use a copy of the area as a template for the new area.

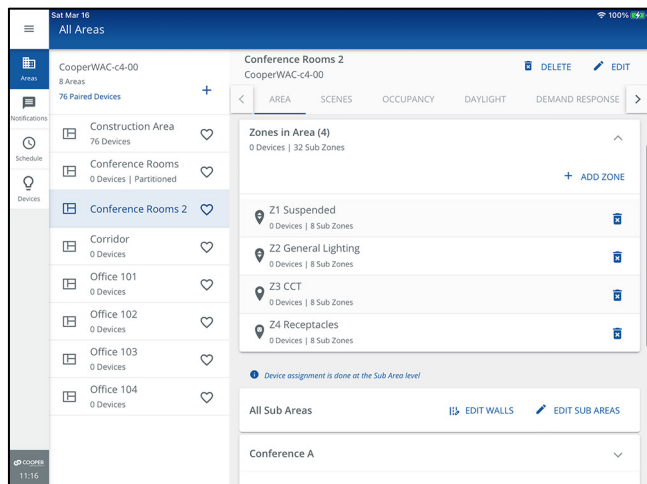
To copy a partitioned area’s settings to a new area:

- 1: In the area screen, tap the plus sign to add a new area. Then, tap **Copy from Area** and select the configured area. The screen should display that the area is copied, indicating that the template has been loaded and is ready for use.



- 2: Enter the new area’s name, and then tap **SAVE**.





The partitioned area will have the same configuration as the original partitioned area including:

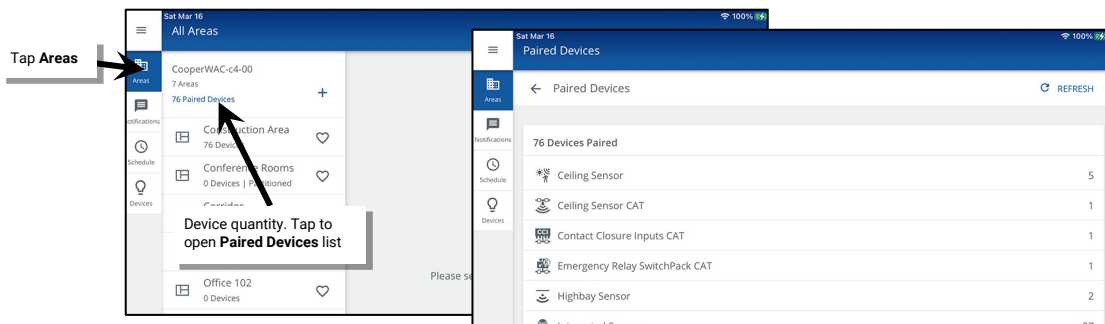
- The same number of sub areas
- The same number of walls
- The same Zone quantities/parameters and sub area assignments
- Scene levels
- Occupancy set quantities/parameters
- Open loop daylight set quantities/parameters¹⁸⁸
- Demand response parameters

Once the new area is created, assign the devices to the new area by organizing the devices into areas and zones.

Organizing WaveLinx Devices into Areas and Zones

Once devices are added to the WaveLinx Area Controller, they will automatically show in the WaveLinx App. For a quick overview the devices and to view a total device count, open the WaveLinx App and login to the WaveLinx Area Controller.

From the menu tap **Areas**. The display will show the total number of added devices at the top of the Areas list. Tap on this number to display a device list organized by device type.



For the devices to operate properly, they must be assigned to areas and control devices to zones. Some devices also require specific configuration to operate as intended. This section discusses how to identify devices and then add devices to both standard and partitioned areas, add control devices to zones in the areas, and configure special settings for specific device types.

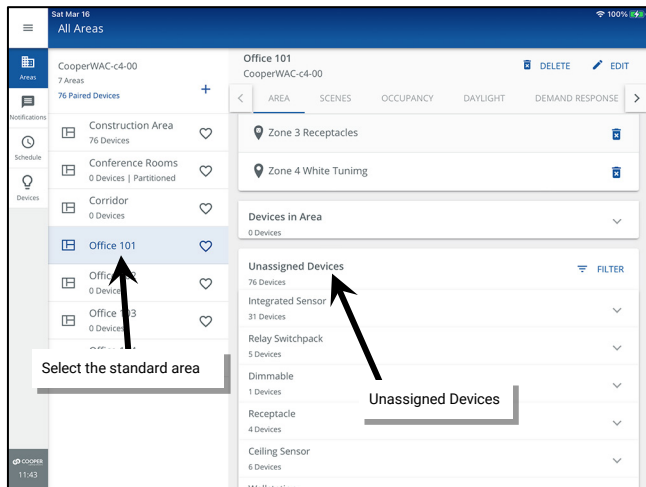
¹⁸⁸ Closed loop daylight sets are not copied as they are device dependent.

Step 1: Access the Unassigned Devices

In most cases, devices will be assigned to areas and zones using the **Unassigned Devices** list. The steps to access the Unassigned Devices list in a standard area are different from a partitioned area. These methods of accessing the Unassigned Device list will be used throughout the steps that follow.

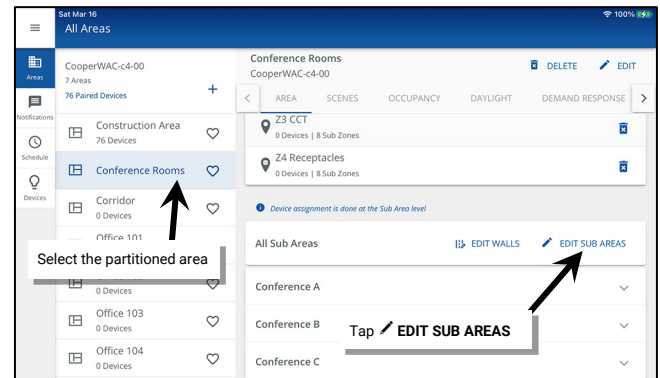
Accessing Unassigned Devices in a Standard Area

- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 2: In the **All Areas** list, select the area created for this space. Scroll down to view the **Unassigned Devices** section.

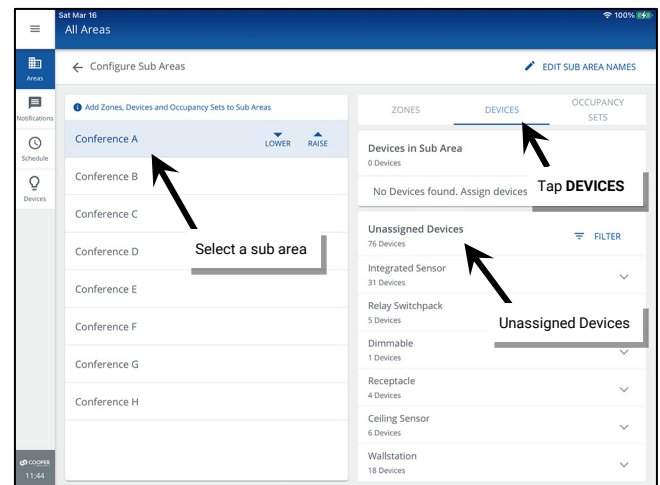


Accessing Unassigned Devices in a Partitioned Area

- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT SUB AREAS**.



- 3: Select the **sub area** and tap on **DEVICES** to view the **Unassigned Devices** section.



Step 2: Identify and Assign Devices to the Areas and Zones

This section will discuss the process of identifying and assigning most WaveLinX devices to the areas and zones.

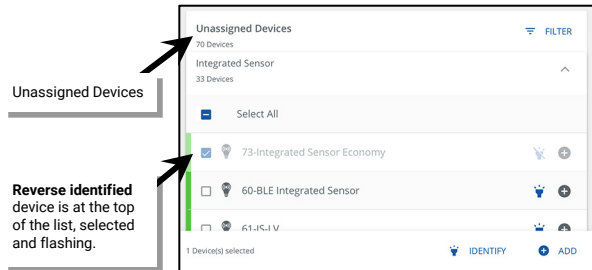
Exception: If the devices are dual channel WaveLinX PRO Nodes and Advanced Integrated Sensors (IS Pro CCT) see 150.

- 1: Stand in the space (area or sub area) where the area's devices are accessible or visible.
- 2: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator. Access the area's **Unassigned Device** list per the instructions on page 146.

- 3: Identify the first device and locate it in the Unassigned Device list in the WaveLinx App by using one of the identification methods described in the device's reference sheets. See the "WaveLinx Device Reference Sheets" beginning on 14 for device specific methods.

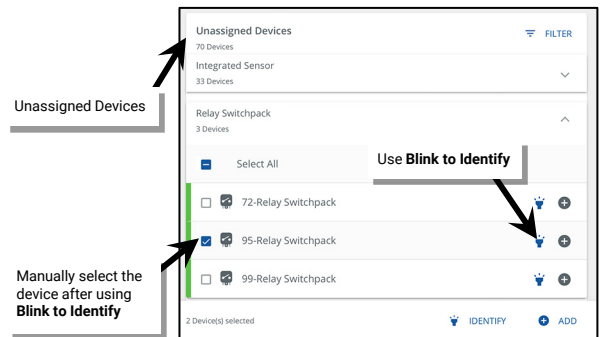
Devices Identified by Reverse Identification

For devices identified by using **Reverse Identification Mode** (ISHH-01 or WaveLinx PRO IR remote, flashlight method, or button press method) the identified load will move to the top of the **Unassigned Devices** section. The load will automatically be selected and will appear to flash or pulse on the screen for about 15 seconds.

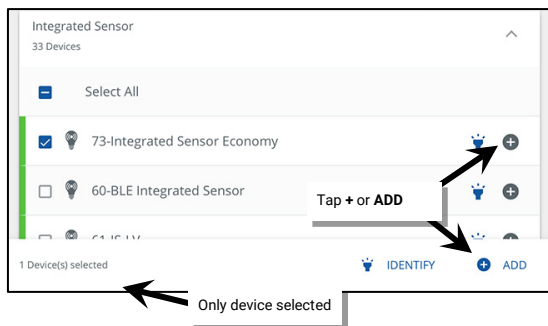


Devices Identified by Blink to Identify

For devices identified by using the **Blink to Identify** mode, once located, manually select the device in the WaveLinx App.

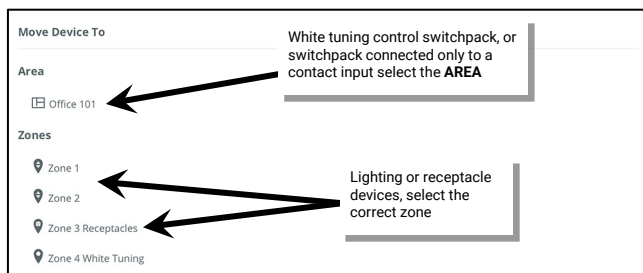


- 4: Verify that the device is the only device selected and then tap + or **ADD**.



- 5: If the device is a control device that is directly connected to lighting or receptacle loads, select the zone that the device should operate in.

EXCEPTION: For a switchpack that is connected for white tuning control, or a switchpack that is connected only to a contact input, when prompted for the zone, select the area.



The WaveLinx App will confirm that the device has been moved.

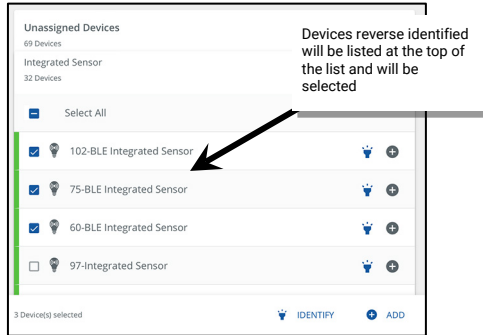
- 6: Repeat the steps in this section until all devices in the area are assigned.

(It is possible to add multiple devices at the same time using the multi-select feature. Please see "Using Multi-Select During Device Assignment" on page 148 for more information on using this feature).

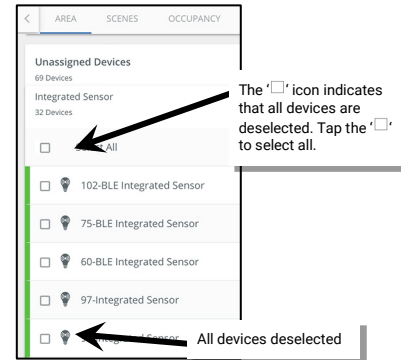
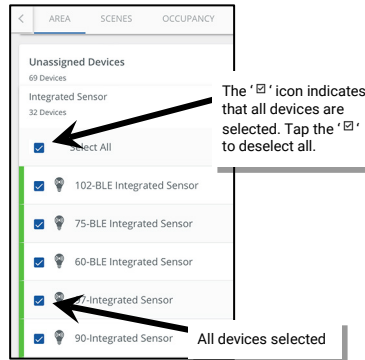
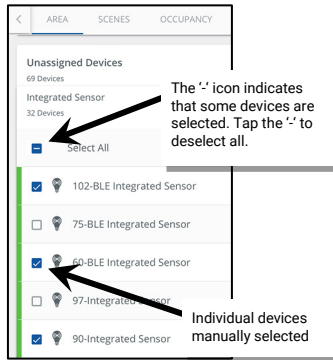
Using Multi-Select During Device Assignment

The WaveLinx App allows for multiple devices to be selected and added to the area at the same time. **Use multi-select with caution to avoid adding devices to the area that should not belong.**

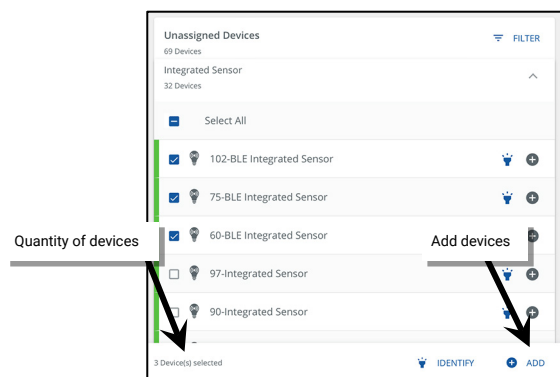
If using **Reverse Identification Mode** (ISHH-01 or WaveLinx PRO IR remote, flashlight method, button press method), each load identified will be selected and added to the already selected devices shown in the **Unassigned Devices** list.



It is also possible to manually select or remove devices from the multi-select by selecting devices individually or using the select/deselect all function.



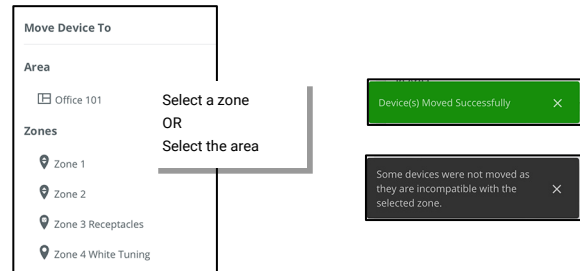
If multiple devices are selected, an additional bar will display at the bottom of the screen that shows the quantity of selected devices along with an option to identify or add the devices to the area.¹⁸⁹ **IMPORTANT! Verify that the quantity of devices selected is correct for the expected devices.** Tap **+ ADD** to add the selected devices.



¹⁸⁹ The identify option will not be displayed if any of the selected devices does not support the **Blink to Identify** feature.

If the selected devices contain load controlling devices, the next screen allows selection of a zone or the option to move the devices into the area.

- If all devices should be part of the same zone, select the zone.
- If devices belong should belong to different zones, select to move the devices to the area where they can then be assigned to specific zones from the zone screen.
- If WaveLinx Ceiling Sensors and Wallstations are selected along with load control devices and a zone is selected, the WaveLinx App will automatically assign the WaveLinx Ceiling Sensors and Wallstations to the selected area or sub area while moving the load control devices into the selected zone. A message may display stating that some devices are **incompatible with the selected zone**.



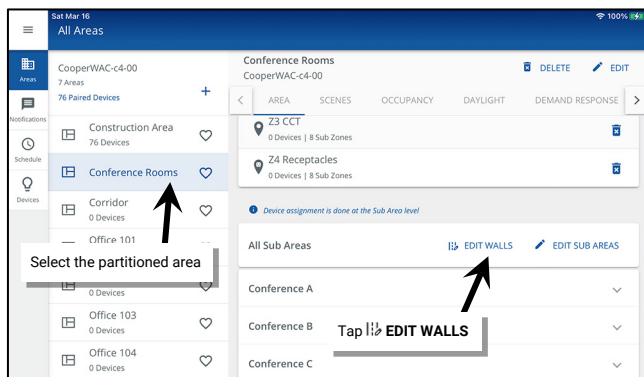
Step 3: (Partitioned Areas Only) Assign the Partition Wall Device(s) to a Sub Area

Skip this step if the site does not have any partitioned areas.

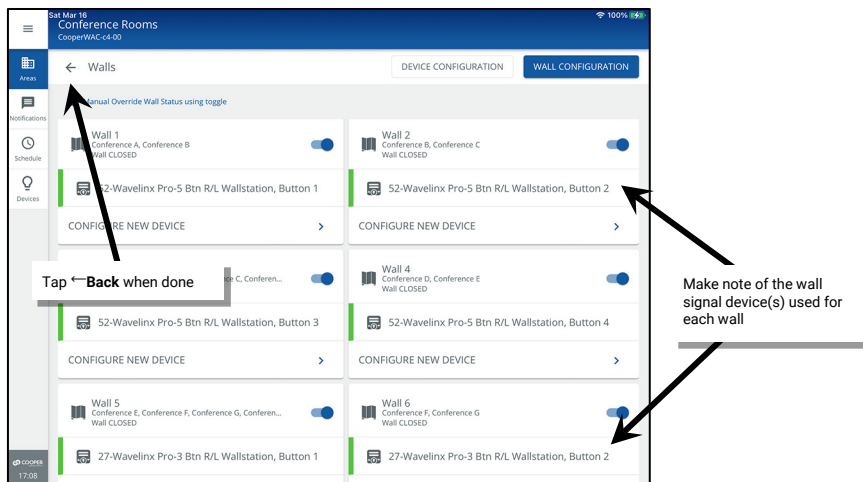
During the partition area setup, devices were configured to provide the signal to the WaveLinx system that the partition wall(s) are open or closed. This step will move the configured devices into one or more of the subareas so that they are removed from the Construction Area and easily found in the WaveLinx App.

To assign the partition wall signal device(s) to a sub area:

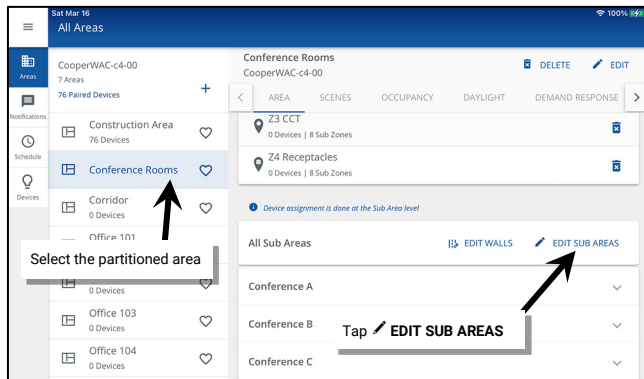
- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT WALLS**.




- 3: In the **Walls** screen, make note of which devices are assigned to each wall and then tap **Back**.

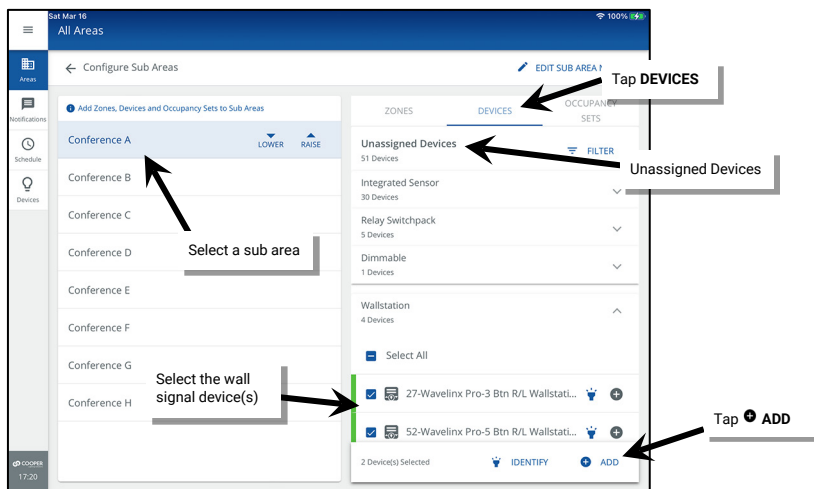


4: Next, select  **EDIT SUB AREAS**.



5: Select the **sub area** that the wall signal device should be added to and then tap on **DEVICES** to view the **Unassigned Devices** section.

6: Locate and select the noted wall signal devices in the unassigned devices list. Tap  **ADD** to add the selected devices. The devices will be moved into the sub area.



Step 4: Identify, Assign and Configure Dual Channel WaveLinx PRO Nodes or Advanced Integrated Sensors (IS Pro CCT)


Skip this step if the site does not have Dual Channel WaveLinx PRO Nodes or advanced Integrated Sensors (IS Pro CCT).

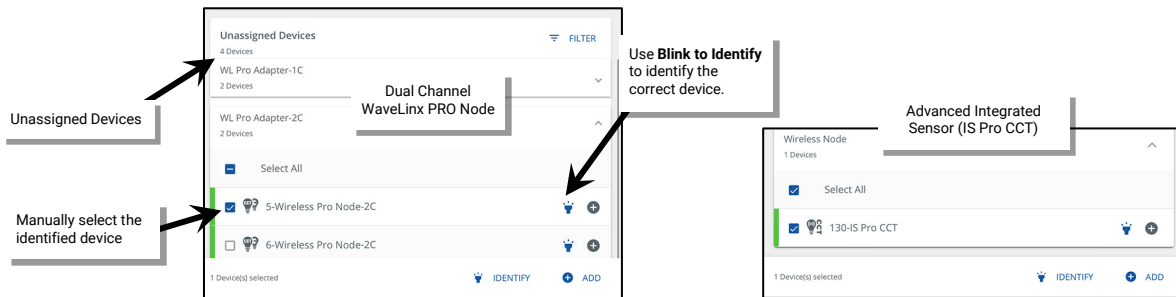
This section will discuss identification, assignment, and configuration of the dual channel WaveLinx PRO Node and the assignment of the advanced Integrated Sensor.

- **Dual Channel WaveLinx PRO Node:** The dual channel WaveLinx PRO Node can be used either for independent dimming control of downlights/uplights within the same fixture, or for intensity control and white tuning control when used with VividTune fixtures. While considered a single device, each channel can be configured separately and assigned to a unique zone. The default out-of-the box configuration for the dual channel WaveLinx PRO Node is for channel 1 to perform dimming, and channel 2 to perform white tuning. This configuration can be adjusted if needed.
- **Advanced Integrated Sensor (IS Pro CCT):** Like the WaveLinx PRO Node, the Advanced Integrated Sensor (IS Pro CCT) is a dual control device that for independent control of intensity and white tuning within the same fixture. When assigned, the device will appear with the dimming zone assignment as well as the white tuning zone assignment.

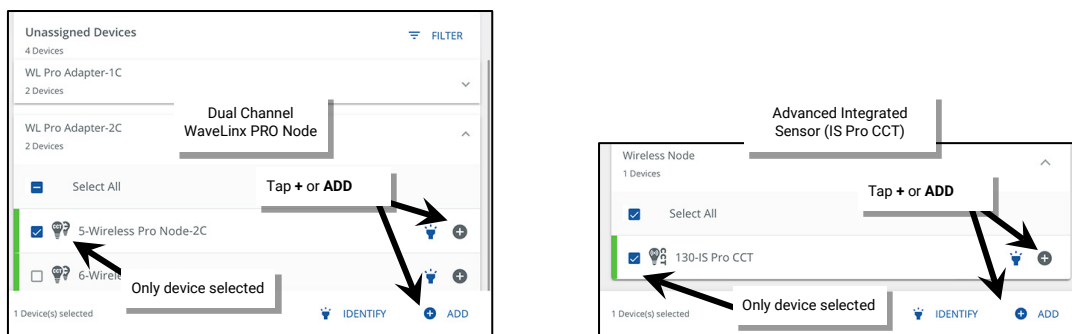
To assign a Dual Channel WaveLinx PRO Node or an Advanced Integrated Sensor (IS PRO CCT) to an area:

- 1: Stand in the space (area or sub area) where the area's devices are accessible or visible.
- 2: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. Access the area's Unassigned Device list per the instructions on page 146.

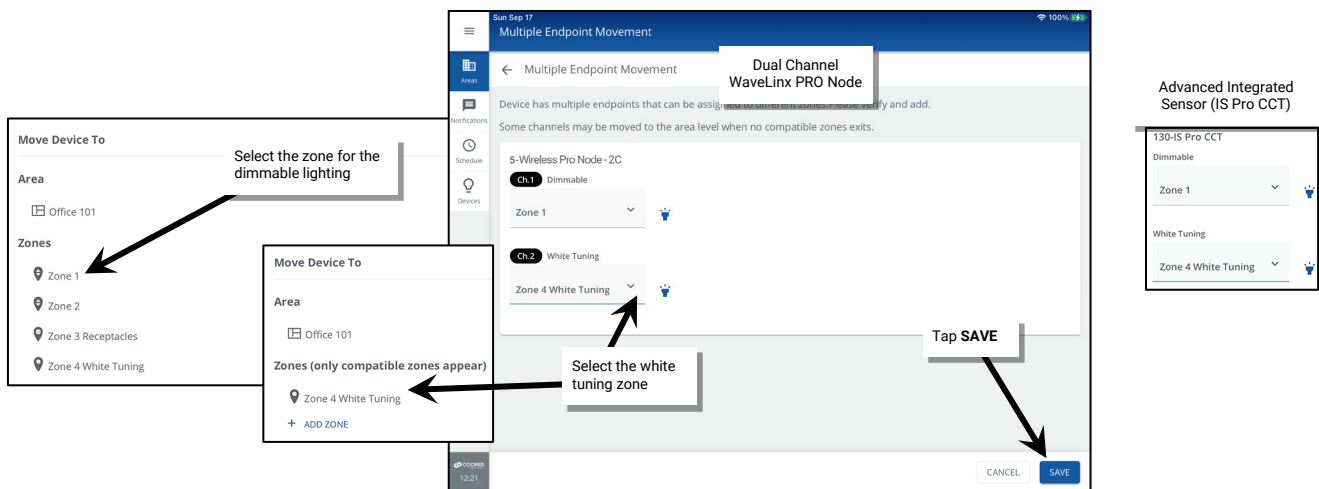
- 3: Expand the **WL Pro Adapter-2C** category (dual channel WaveLinx PRO Node) or **WaveLinx Node** (IS Pro CCT) devices and tap  to place a device into **Blink to Identify** mode. The connected fixture should flash lighting ON/OFF (or Cool/Warm if controlling White Tuning). Once the device is verified, manually select the device in the WaveLinx App.



- 4: Verify that the device is the only device selected and then tap **+** or **Add**. (It is possible to add multiple devices at the same time using the multi-select feature. Please see "Using Multi-Select During Device Assignment" on page 148 for more information on using this feature).



- 5: When prompted to select where to **Move Device To**, select the dimmable **Zone**. When the **Multiple Endpoint Movement** screen displays, use the drop down to assign the device to the correct white tuning zone (If the white tuning zone was not created initially, use the **+ ADD ZONE** at the bottom of the zone list to create and then assign the zone). Tap **SAVE**.

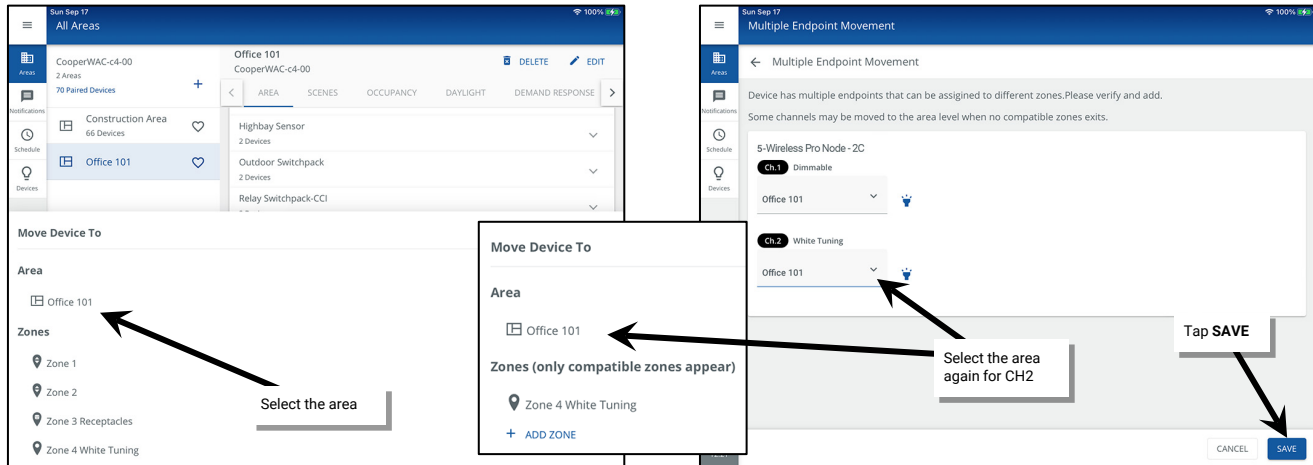


The WaveLinx PRO Node defaults to Channel 1 Dimmable, Channel 2 White Tuning (CCT range 3000-5000K). If the channel type OR default white tuning range (3000-5000K) is NOT correct see the next section "Changing Dual Channel WaveLinx PRO Node Configuration" on page 152.

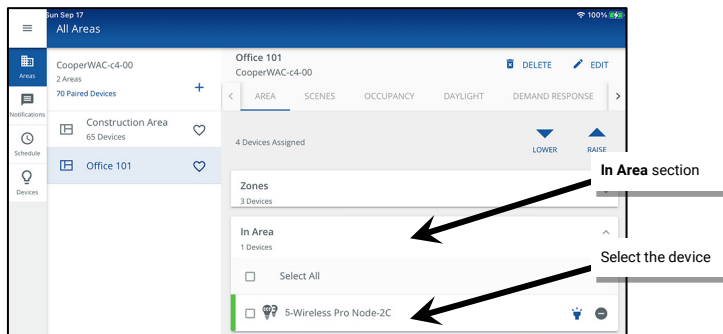
Changing Dual Channel WaveLinx PRO Node Configuration

The dual channel WaveLinx PRO Node defaults to Channel 1 Dimmable, Channel 2 White Tuning (CCT range 3000-5000K). **If the channel type OR default white tuning range (3000-5000K) is NOT correct:**

- 1: When assigning the device to the area, use the drop down for both channel 1 and channel 2 and select the **AREA** for both channels. Tap **SAVE**.



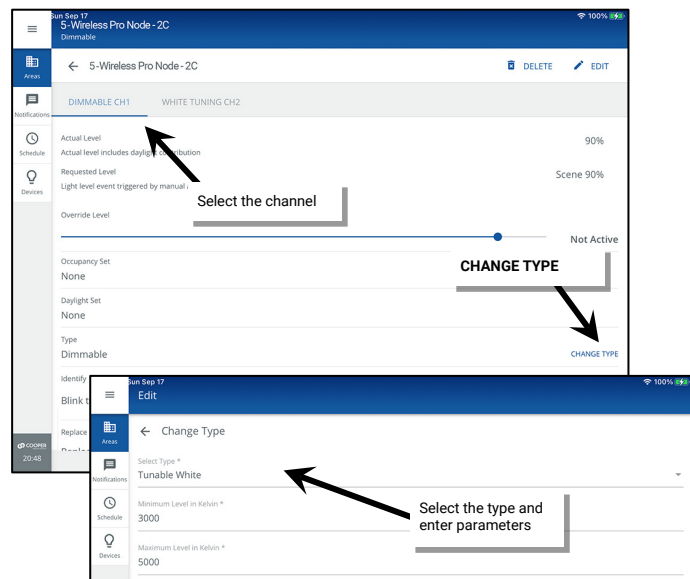
2. Locate and then select the device in the **In Area** section of a standard area or the **Devices in Sub Area** of a partitioned area.



- 3: Select the tab for the desired channel (CH1 or CH2), and then:

To change from Dimmable type to White Tuning type

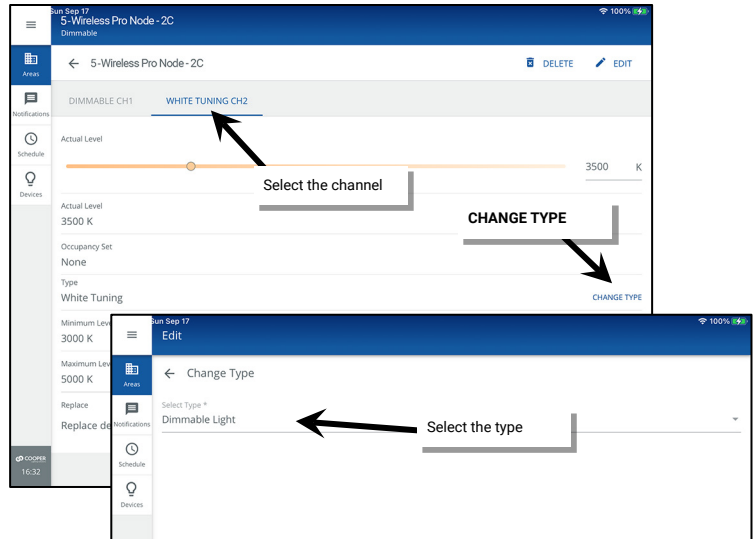
- Select **CHANGE TYPE** and select **Tunable White**. Enter the fixture's correct supported color temperature range in the minimum and maximum physical Kelvin level fields.¹⁹⁰ Tap **SAVE**.



¹⁹⁰ Kelvin temperature range can typically be found in the fixture documentation. Failure to set the proper range may result in an unexpected color temperature response.

To change from White Tuning to Dimmable type

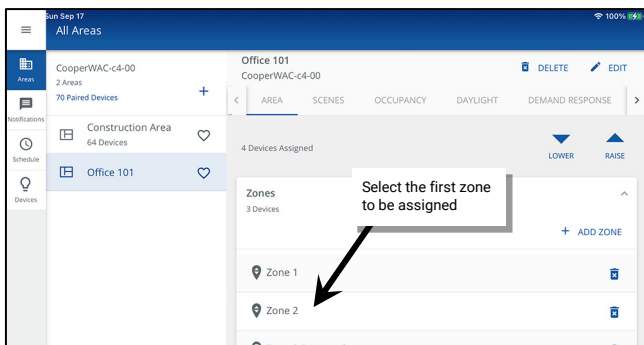
- Select **CHANGE TYPE** and then **Dimmable Light**. Tap **SAVE**.

**To change the default white tuning range:**

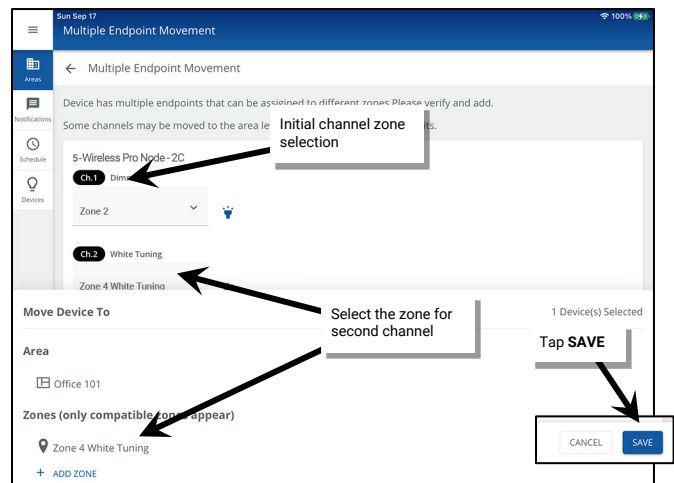
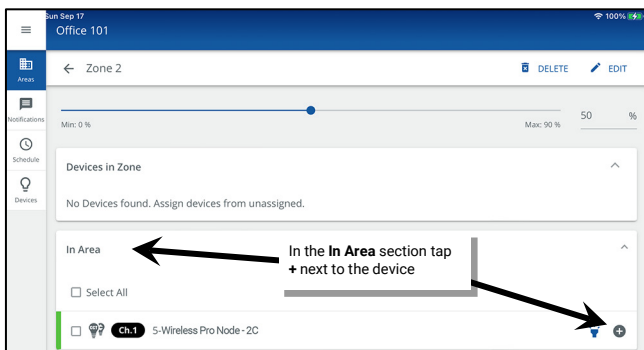
- To change the default white tuning range of a channel that is already set to the white tuning type, change the type to **Dimmable Light** and then change back to **Tunable White** entering the correct range.

The channels of the WaveLinx PRO Node are now ready to be assigned to the correct zone(s). If a channel is defined as **White Tuning**, make certain that there is a white tuning zone set up before proceeding.

4: Navigate back to the area's main screen and then in **Zones**, select a zone that one of the channels will be assigned to.

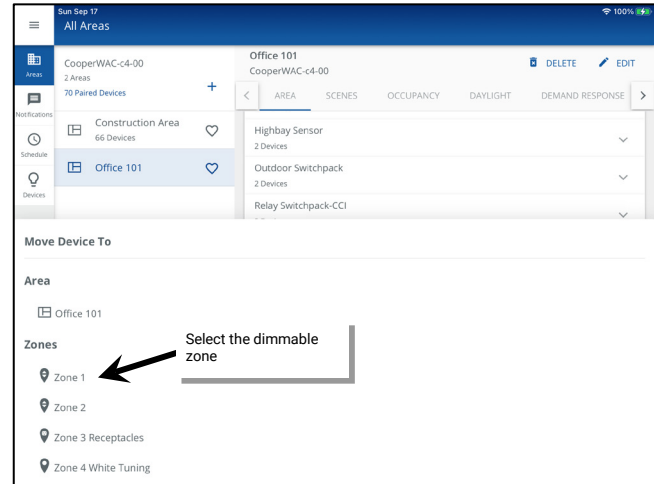
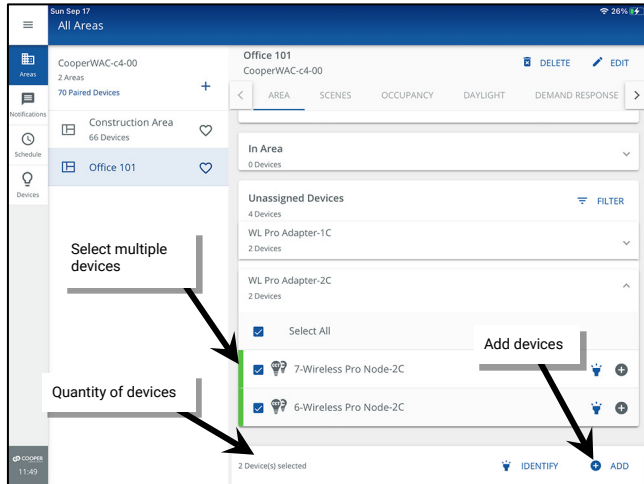


5: In the Zone screen, locate the device in the **In Area** section. Tap **+** to add the device channel to the zone. The **Multiple Endpoint Movement** screen should display with the chosen zone displayed for the selected channel. Use the drop down for the second channel to select the desired zone for that channel and then tap **SAVE**.

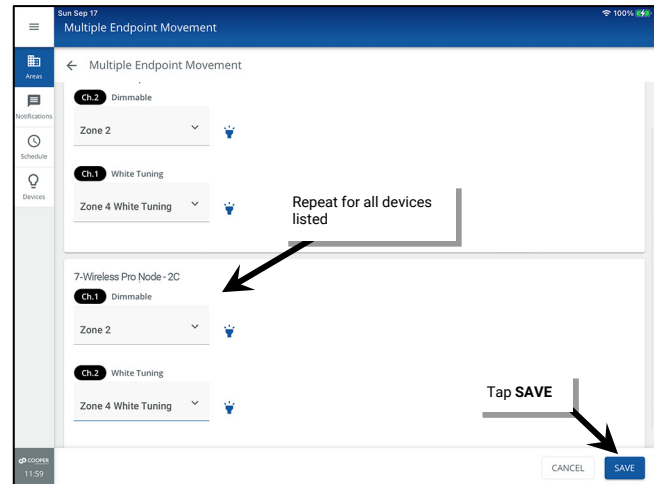
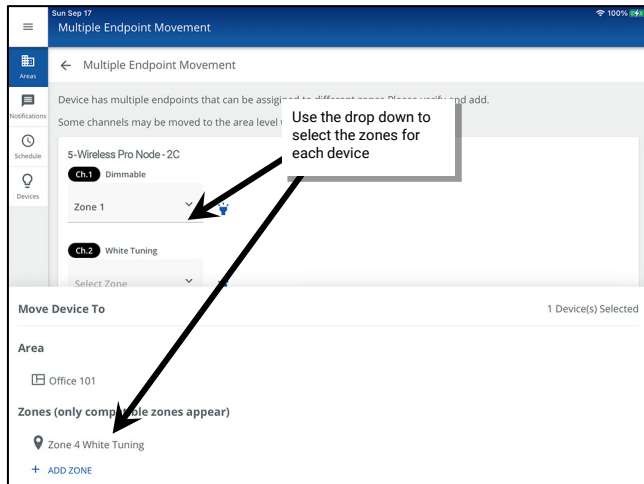


Using Multi-Select During Dual Channel Device Assignment

Like other WaveLinx devices, the dual channel WaveLinx PRO Node and the advanced Integrated Sensor (IS Pro CCT) allow for multi-select during the initial setup. If more than one dual channel WaveLinx PRO Node should belong to the same area, select both devices. **IMPORTANT! Verify that the quantity of devices selected is correct for the expected devices.** Tap **+** Add to add the selected devices and then select the dimmable zone.



Use the drop down to select the appropriate zone for white tuning control (or for 2nd dimming zone for dual channel WaveLinx PRO Node). Verify that the zones are correct, and then repeat for additional devices listed. Once all device channels are assigned, tap **SAVE**.



WaveLinx PRO Node devices only: If device configuration does not match default channel configuration (CH1 Dimmable, CH2 White Tuning) assign both channels to the area. Review steps in the previous section to reassign the channel type and then assign channels to the appropriate zones.

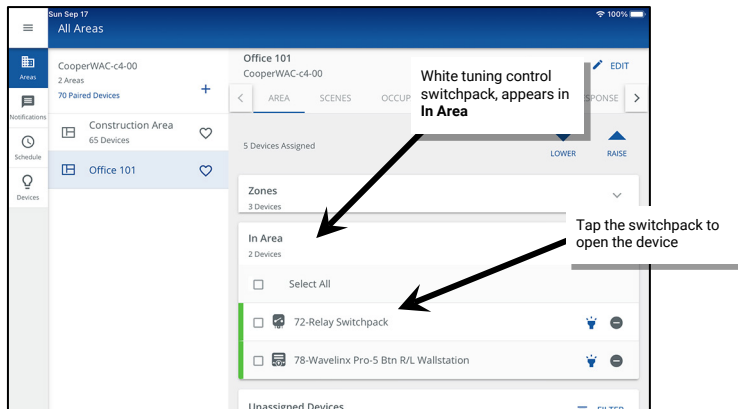
Step 5: Configure WaveLinx Switchpacks Controlling Tunable White Lighting Control Devices

Skip this step if the site does not have WaveLinx Switchpacks controlling to Tunable White Lighting control devices.

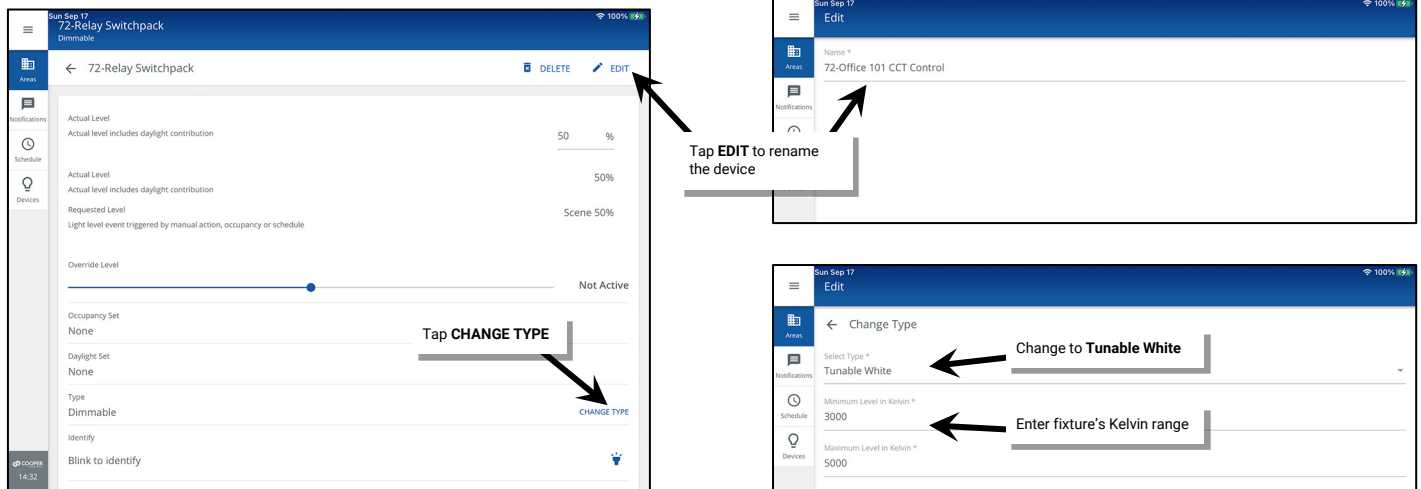
WaveLinx PRO Universal Voltage Dimming Switchpacks (RSP-P-010-347, WSP-MV-010 and WSP-UV-010) and the WaveLinx CAT Dimming Switchpack (RSP-C-010-Z1) can connect to 0-10V white tuning control wiring in a VividTune or other 0-10V controlled white tunable fixture. Ensuring proper white tuning response requires some additional configuration steps.

Before performing this configuration, make sure that the Switchpack has been identified and assigned to the area or partitioned area's sub area (see "Step 2: Identify and Assign Devices to the Areas and Zones" on page 146). Do not assign the device to a zone before configuring it for white tuning

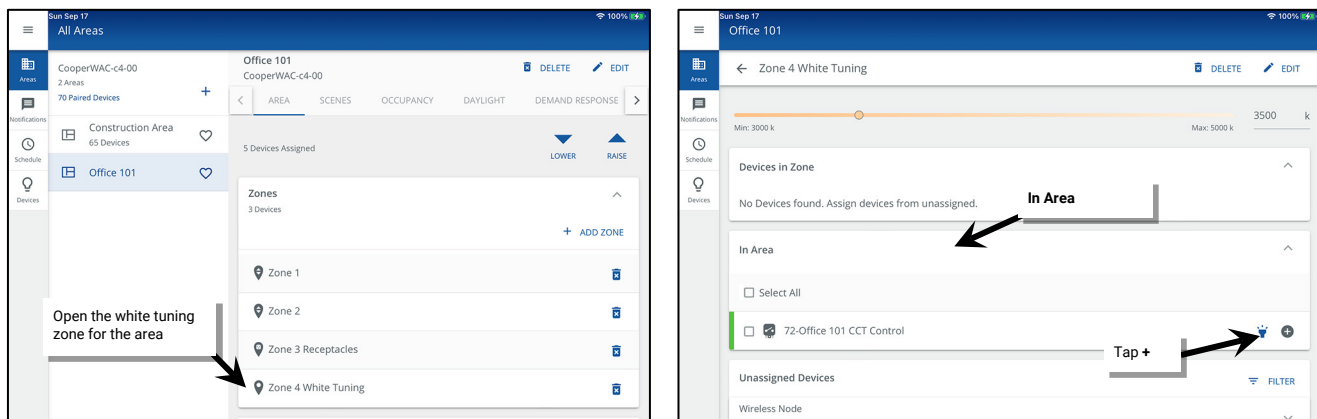
- 1: In a standard area or partitioned sub area, locate the device in the **In Area** or **Devices in Sub Area** section and then tap the Switchpack to open it.



- 2: (Optional) Tap **EDIT** and enter a unique descriptive name for the device and then save the change.
- 3: Next, tap **CHANGE TYPE** and set the type to **Tunable White**. Enter the fixture's correct supported color temperature range in the minimum and maximum physical Kelvin level fields. ^{191,192} Tap **SAVE** and then tap the back button to go back to the main area screen.



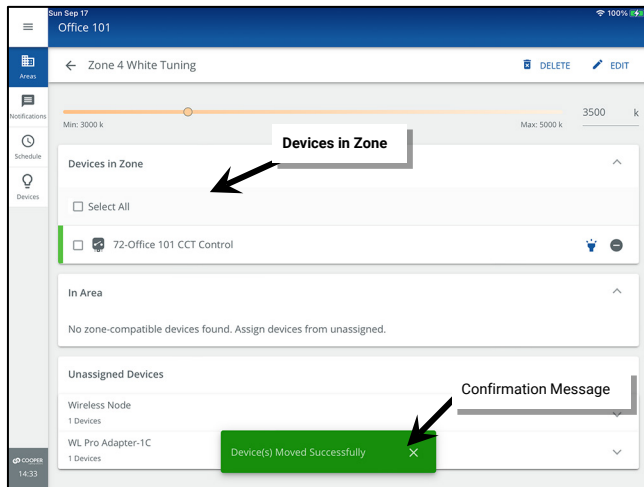
- 4: For both standard and partitioned areas, in the main area screen, tap on the previously configured white tuning zone. The white tuning Switchpack should now appear under **In Area** or **Devices in Sub Area**. Tap on **+** to add the device to the white tuning zone.



¹⁹¹ Fixtures with different supported color temperatures should be connected to different switchpacks for white tuning control to avoid variances in color temperature.

¹⁹² Kelvin temperature range can typically be found in the fixture documentation. Failure to set the proper range may result in an unexpected color temperature response.

The WaveLinX App may display a brief confirmation message and the device should show under the **Devices in Zone**.

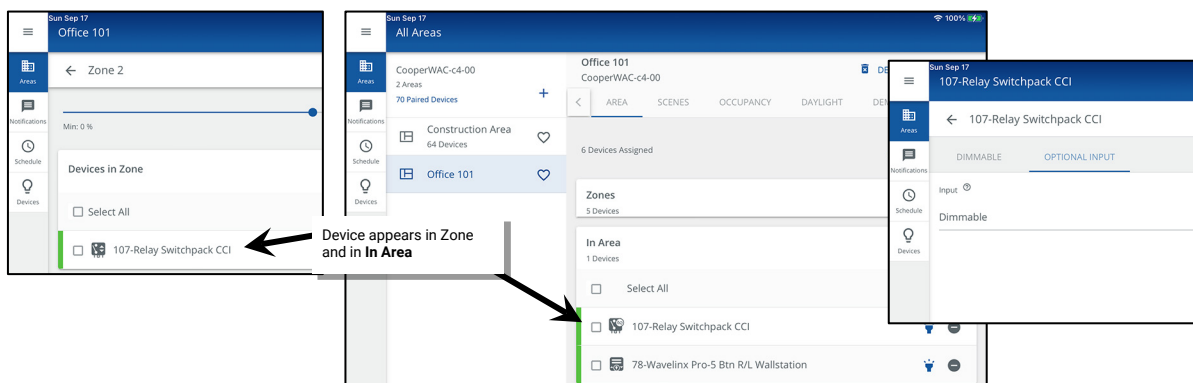


Step 6: Configure Contact Closure Devices Connected to WaveLinX Universal Voltage Dimming Switchpacks

Skip this step if the site does not have contact closure devices connected to WaveLinX Universal Voltage Dimming Switchpacks.

This section walks through the process of assigning contact closure devices that are connected to a WaveLinX Universal Voltage Dimming Switchpacks (WSP-CA-010 model only) to the created area.

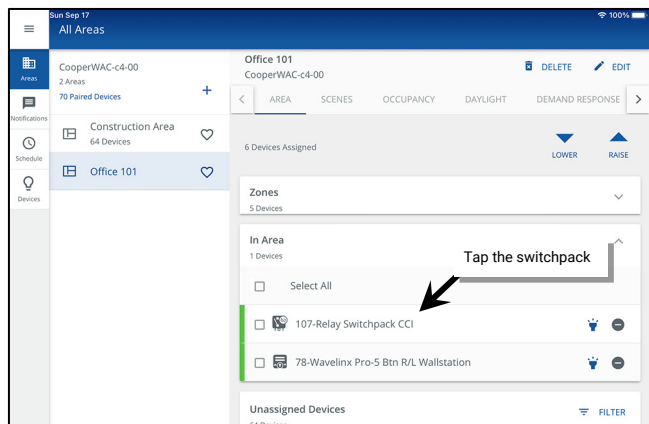
WaveLinX Universal Voltage Dimming Switchpacks that are not connected to a contact closure device are configured as a controllable lighting device. When the switchpack is assigned to an area and lighting zone, a second icon for the device will also appear in the **In Area** or **Devices in Sub Area** section of the screen. By default, the input type is set as **Dimmable**, i.e., contact closure is not being used.¹⁹³



¹⁹³ Although the device icon may appear in two different locations, the device is still counted as one device in the area device count.

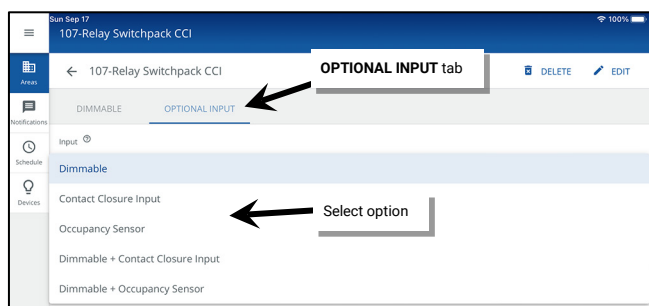
To configure a switchpack that is using the contact closure:

1: In a standard area or partitioned sub area, locate the device in the **In Area** or **Devices in Sub Area** section and then tap the Switchpack to open it (the default name will appear as Relay Switchpack CCI).



2: Select the second tab (may read OPTIONAL INPUT, OCCUPANCY, or MAINTAINED CCI) and then use the **Input** dropdown to select the appropriate choice.¹⁹⁴

- **Dimmable:** The switchpack is not connected to a contact closure input but is connected to lighting only.
- **Contact Closure Input:** The switchpack is connected to a dry contact closure input but is not connected to lighting.
- **Occupancy Sensor:** The switchpack is connected to a Greengate Occupancy Sensor but is not connected to lighting.
- **Dimmable + Contact Closure Input:** The switchpack is connected to a dry contact closure input and is also connected to lighting.
- **Dimmable + Occupancy Sensor:** The switchpack is connected to a Greengate Occupancy Sensor and is also connected to lighting.



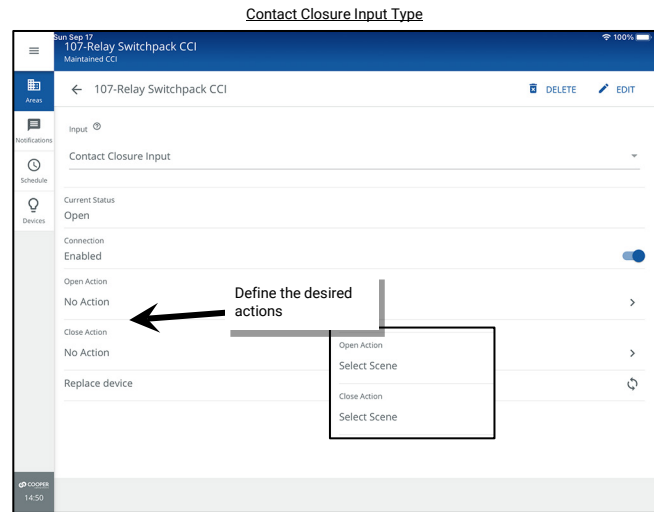
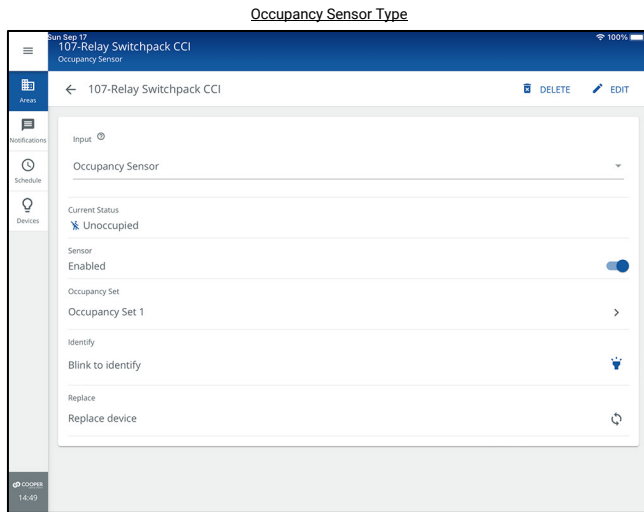
3: If the type is being changed, select **PROCEED** when prompted. The input display will show the options for the selected input type.



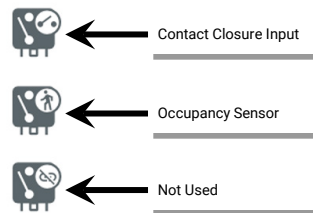
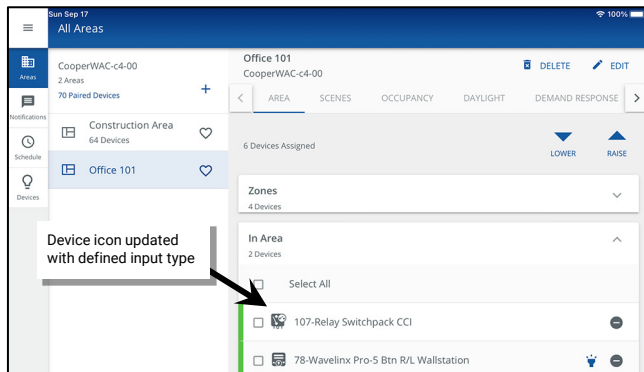
¹⁹⁴ If the input has already been set to the option of **Occupancy** or **Contact Closure Input** without the **Dimmable** option, the input tab is automatically displayed.

4: If the type of input is set for:

- **Occupancy sensor:** the occupancy sensor will automatically be added to the area's occupancy set. No further configuration is necessary for default occupancy operation. Tap the back button to exit the switchpack screen.
- **Contact closure input:** the input will not operate until an open action and/or close action is configured. Select the desired action and then tap the back button to exit the switchpack screen. See "Modifying Contact Closure Input Response" on page 201 for further information on modifying the contact input behavior.



If the input type has changed, the device icon in the **In Area** or **Devices in Sub Area** section may update to reflect the new input type.



Step 7: Program Power Sensing Devices for Emergency Device Operation

Some WaveLinx hardware is UL924 approved for control of emergency fixtures. This allows the emergency fixtures to operate like any other fixture in the space unless there is an interruption of normal power. Upon detection of loss of normal power, the device enters Emergency Mode, forcing the emergency fixture to full brightness until normal power returns. The emergency device and fixture are wired to an emergency power circuit.

Out-of-the-box, WaveLinx UL924 Emergency control devices will remain in the emergency state until a Power Sensing device is assigned. A power sensing device wired to a normal power circuit will send out a periodic signal that the UL924 Emergency control device listens for. When the normal power device signal stops transmitting, the Emergency control device will go into Emergency Mode, only returning to normal operation when the Power Sensing device signal is detected again.

Follow the instructions in this section to enable the Power Sensing signal for the normal power device that will be used to signal a loss of power.

WaveLinx CAT Emergency Device Setup

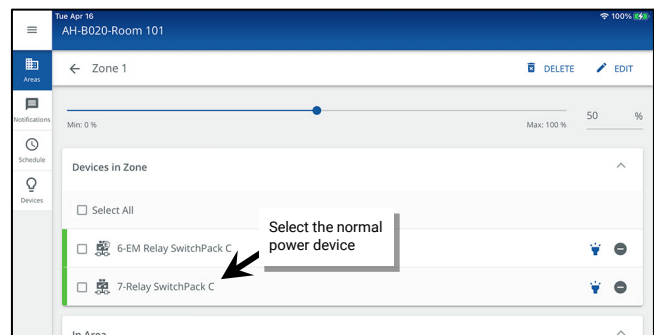
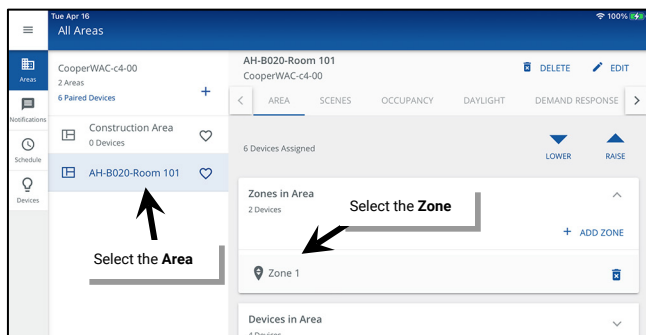
WaveLinx version 14.1.x.x and above allows setup of the normal device Power Sensing signal from the WaveLinx Mobile App.

In the WaveLinx CAT architecture, one WaveLinx CAT Dimming Switchpack (RSP-C) is used to send the Power Sensing signal to the WaveLinx CAT Emergency Dimming Switchpack(s) (ESP-C) on the same CAT bus.

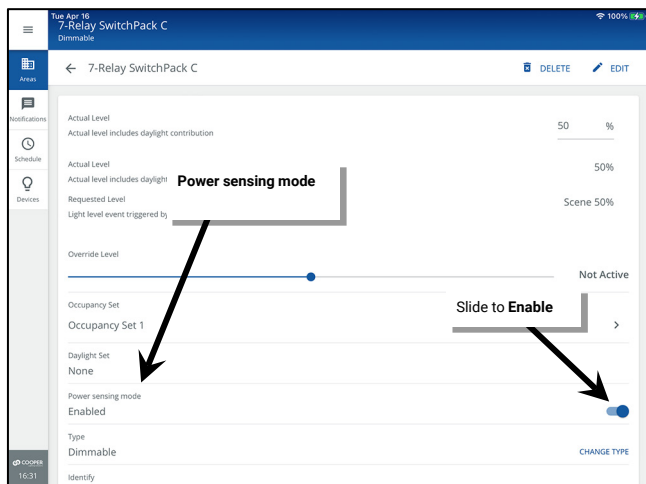
The RSP-C switchpack must be physically connected to the same CAT bus as the ESP-C switchpack(s) on the same Area Hub port. It cannot be connected through another port or a different Area Hub. The RSP-C switchpack does not need to be assigned to the same WaveLinx area as the ESP-C switchpack.

To enable the WaveLinx CAT Dimming Switchpack (RSP-C) Power Sensing signal:

- 1: Determine which normal power WaveLinx CAT Dimming Switchpack will be the device to send the Power Sensing signal.
- 2: In the **All Areas** list, select the standard or partitioned area that the normal power WaveLinx CAT Dimming Switchpack is assigned to. Tap on the device's **zone** and locate and then tap the device to open it.



- 3: Scroll down to **Power sensing mode** and then slide the switch to **Enabled**.



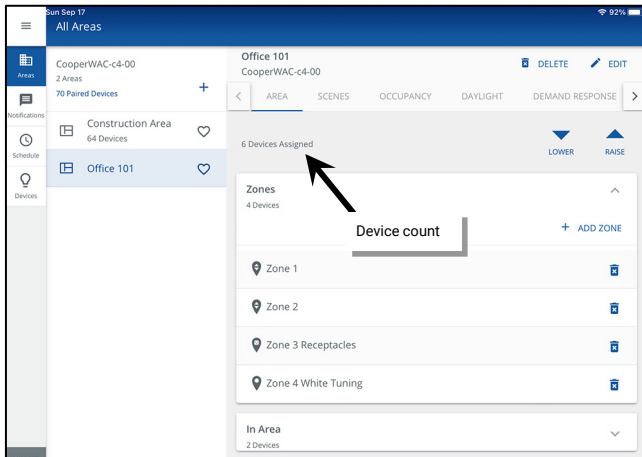
Repeat this process as needed for additional WaveLinx CAT bus devices.

Step 8: Verify Area Assigned Device Types and Count

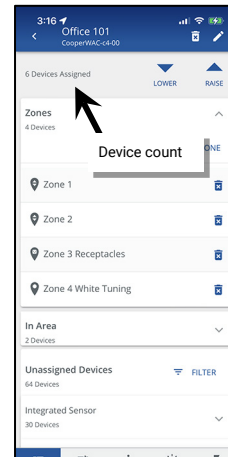
At this point, all the area's devices should be assigned. This step will walk through the process of verifying the total device count assigned to the area.

- 1: First, review the lighting plans and obtain an accurate count of the expected devices.
- 2: Verify that the area devices assigned count matches the lighting plan count.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



- 3: Repeat steps 1 through 7 in this chapter for all areas until all devices are assigned.

Quick Links for Common Questions

- I am done assigning my devices to areas, but I still have devices showing in my unassigned device list. What should I do? See the answer on page 361.
- During configuration, I found a device that was not powered. How do I get the device to appear in the WaveLinx App so that I can assign it? See the answer on page 361.
- There is a device in the space that is not showing in the WaveLinx App. How do I get the device to appear so that I can assign it? See the answer on page 360.
- I am using a WaveLinx Universal Voltage Dimming Switchpack's contact closure input. My dimming switchpack does not have the additional icon showing in the **In Area** section of the WaveLinx App or I do not see the option to set the input type. Why is this icon/input type not showing? See the answer on page 364.

Understanding WaveLinX Area Controller Default Operation

Once devices are assigned to their appropriate areas and zones, the area will operate per the default area programming. For WaveLinX Version 14.1 (previous versions may have different operation), the default programming for a user created area is as described in the following section.

Default Operation in Standard Areas

- All occupancy sensors, including WaveLinX PRO integrated fixture mounted sensors, WaveLinX PRO Tilemount sensors, WaveLinX CAT Occupancy Sensors, battery powered WaveLinX PRO Ceiling Sensors, and Greengate occupancy sensors connected to the contact input of a WaveLinX PRO Universal Voltage Dimming Switchpack or to a WaveLinX CAT Sensor Input Module are grouped into an occupancy set to control all loads assigned to the dimmable, non dimmable and receptacle zones in the area.
 - Upon receiving an occupied signal from any sensor in the group, lighting will turn ON automatically to a 50% light level and controlled receptacles will turn ON.
 - Lighting and receptacles¹⁹⁵ will turn OFF automatically after 20 minutes of vacancy (all sensors in the group must sense vacancy for 20 minutes).¹⁹⁶
- Tunable white loads will assume a warm white color temperature (approximately 3500K).¹⁹⁷
- Closed loop daylighting will not operate until configured within the WaveLinX App. This includes all fixtures with Integrated or Tilemount Sensors.
- Open loop daylighting will not operate until configured within the WaveLinX App. This includes battery powered WaveLinX Ceiling Sensors, WaveLinX Outdoor Lighting Control Modules, as well as Integrated and Tilemount Sensors designated for open loop control.
- WaveLinX Wallstations will operate the controlled lighting and receptacle zones in their assigned area according to their default button configuration.¹⁹⁵ See the wallstation reference sheets for details on the default button commands.
- Contact closure inputs connected to a WaveLinX Universal Voltage Dimming Switchpacks (WSP-CA-010 model only) and programmed for a contact input type will not operate until programmed in the WaveLinX App.
- Contact closure inputs connected to a WaveLinX CAT Contact Closure Module will not operate until programmed in the WaveLinX App.
- All scene commands will default to the following light levels:

Scene	Dimmable Zone Response	On/Off Zone Response	Receptacle Response	White Tuning Response
Scene 0	0%	OFF (0%)	OFF	3500K ¹⁹⁷
Scene 1	100%	ON (100%)	ON	3500K ¹⁹⁷
Scene 2	70%	ON (100%)	ON	3500K ¹⁹⁷
Scene 3	50%	ON (100%)	ON	3500K ¹⁹⁷
Scene 4	30%	ON (100%)	ON	3500K ¹⁹⁷
Scene 5	10%	ON (100%)	ON	3500K ¹⁹⁷
Scene 6	1%	ON (100%)	ON	3500K ¹⁹⁷
Scene 7 through 15	Not programmed ¹⁹⁸	Not programmed ¹⁹⁸	Not programmed ¹⁹⁸	Not programmed ¹⁹⁸

- Demand Response behavior is assigned to all dimmable lighting zones. By default, if a demand response signal or test is received, all dimmable loads will reduce by 20% light output. Non dimmable, receptacle and white tuning zones are automatically exempted from demand response and will not be affected with demand response signals.

¹⁹⁵ Receptacles must be assigned to a receptacle zone to respond to default operation.

¹⁹⁶ If the contact closure input of a switchpack is connected to a Greengate sensor, set the Greengate sensor onboard configuration switches to a 5-minute hold time to prevent interference with WaveLinX hold-time settings.

¹⁹⁷ The actual Kelvin temperature assumed by fixture will depend on the fixture's supported Kelvin range. Number provided is for approximate reference.

¹⁹⁸ Scenes 7 through 15 are not programmed and hidden from general users by default. The administrator must activate, and then enable the zones and programming for each zone if they are required for an application.

Default Operation in Partitioned Areas

- Demand response commands will issue as defined regardless of wall position.
- All occupancy sensors assigned in each sub area, including WaveLinX PRO integrated fixture mounted sensors, WaveLinX PRO Tilemount sensors, WaveLinX CAT Occupancy Sensors, battery powered WaveLinX PRO Ceiling Sensors, and Greengate occupancy sensors connected to the contact input of a WaveLinX PRO Universal Voltage Dimming Switchpack or to a WaveLinX CAT Sensor Input Module are grouped into an occupancy set to control all loads assigned to the dimmable, non dimmable and receptacle zones in the sub area.

When Partition Walls are CLOSED

- Upon receiving an occupied signal from any sensor in the sub area's group, the sub area lighting will turn ON automatically to a 50% light level and controlled receptacles will turn ON.
- The sub area lighting and receptacles¹⁹⁹ will turn OFF automatically after 20 minutes of vacancy (all sensors in the sub area group must sense vacancy for 20 minutes).²⁰⁰

When Partition Walls are OPENED

- Upon receiving an occupied signal from any sensor in any of the joined sub area groups, the joined sub areas' lighting will turn ON automatically to a 50% light level and controlled receptacles will turn ON.
- The joined sub areas' lighting and receptacles¹⁹⁹ will turn OFF automatically after 20 minutes of vacancy (all sensors in the joined sub areas must sense vacancy for 20 minutes).²⁰⁰
- WaveLinX Wallstations will operate the controlled lighting and receptacle zones according to their default button configuration.¹⁹⁹ See the wallstation reference sheets for details on the default button commands.

When Partition Walls are CLOSED

- The wallstation button command will only affect its own sub area.

When Partition Walls are OPENED

- The wallstation button command will affect the joined sub areas.
- Tunable white loads will assume a warm white color temperature (approximately 3500K).²⁰¹
- Closed loop daylighting will not operate until configured within the WaveLinX App. This includes all fixtures with Integrated or Tilemount Sensors.
- Open loop daylighting will not operate until configured within the WaveLinX App. This includes battery powered WaveLinX Ceiling Sensors, WaveLinX Outdoor Lighting Control Modules, as well as Integrated and Tilemount Sensors designated for open loop control.
- Contact closure inputs connected to a WaveLinX Universal Voltage Dimming Switchpacks (WSP-CA-010 model only) and programmed for a contact input type will not operate until programmed in the WaveLinX App.
- Contact closure inputs connected to a WaveLinX CAT Contact Closure Module will not operate until programmed in the WaveLinX App.
- All scene commands will default to the following light levels:

Scene	Dimmable Zone Response	On/Off Zone Response	Receptacle Response	White Tuning Response
Scene 0	0%	OFF (0%)	OFF	3500K ²⁰¹
Scene 1	100%	ON (100%)	ON	3500K ²⁰¹
Scene 2	70%	ON (100%)	ON	3500K ²⁰¹
Scene 3	50%	ON (100%)	ON	3500K ²⁰¹
Scene 4	30%	ON (100%)	ON	3500K ²⁰¹
Scene 5	10%	ON (100%)	ON	3500K ²⁰¹
Scene 6	1%	ON (100%)	ON	3500K ²⁰¹
Scene 7 through 32	Not programmed ²⁰²	Not programmed ²⁰²	Not programmed ²⁰²	Not programmed ²⁰²

- Demand Response behavior is assigned to all dimmable lighting zones. By default, if a demand response signal or test is received, all dimmable loads will reduce by 20% light output. Non dimmable, receptacle and white tuning zones are automatically exempted from demand response and will not be affected with demand response signals.

¹⁹⁹ Receptacles must be assigned to a receptacle zone to respond to default operation.

²⁰⁰ If the contact closure input of a switchpack is connected to a Greengate sensor, set the Greengate sensor onboard configuration switches to a 5-minute hold time to prevent interference with WaveLinX hold-time settings.

²⁰¹ The actual Kelvin temperature assumed by fixture will depend on the fixture's supported Kelvin range. Number provided is for approximate reference.

²⁰² Scenes 7 through 32 are not programmed and hidden from general users by default. The administrator must activate, and then enable the zones and programming for each zone if they are required for an application.

Finalizing WaveLinx Area Controller Setup

Once all devices are added, areas created and devices assigned, finalize the WaveLinx Area Controller setup. This section walks through removing unassigned devices from the Construction Area and the final recommended procedures that should be performed on site.

Step 1: Remove Unassigned Devices from the Construction Area

Once all devices are assigned to areas, if there are unassigned devices still in the Construction Area:

- If this is the only WaveLinx Area Controller in the facility, a device has been missed or has been added that was not shown on the plans. Place the device into **Blink to Identify** mode to assist with locating the device.²⁰³ Once found, assign the device to the proper area.
- If there are other WaveLinx Area Controllers in the facility, the device(s) may have paired with the incorrect WaveLinx Area Controller. For the device(s) to be able to pair with the correct WaveLinx Area Controller, they must be removed from the Construction Area.

To quickly remove all unassigned devices in the Construction Area, press and hold the PAIR button on the WaveLinx Area Controller for 4 seconds, and then release. The devices still in the Construction Area will be unpaired from the WaveLinx Area Controller. It may take several minutes for the command to fully process if there are multiple devices being disconnected. This command will not affect devices that have been assigned to areas other than the Construction Area.

- WAC2 (Gen 2), the blue 802.15.4 LED will flash rapidly until unassigned devices have been commanded to leave the network.

For WAC2 version 11.0.5.x and higher, if a device does not confirm that it successfully left the WaveLinx Area Controller's network, the device will remain in the WaveLinx App's construction area with a red indicator next to the device to show it is not communicating. These devices may need a manual factory reset to restore them to the out-of-the-box state. Once this is done, delete the device from the WaveLinx App.

If the WaveLinx Area Controller is not in an accessible location, devices can be manually deleted using the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁰⁴ (see page 170) or the devices can be removed from the construction area using a feature on the WaveLinx Area Controller's internal debug webpage. For instructions, see page 314.



Step 2: Final Recommended Procedures

The following steps are recommended to ensure the best system operation. Please refer to the specified section for further information.

- 1: Update the WaveLinx Area Controller software and firmware. Follow the steps in "Updating the Firmware/Software of the WaveLinx Area Controller" on page 306.
- 2: Update WaveLinx Device Firmware. See "Updating the Firmware of WaveLinx Devices" on page 308 for this procedure.
- 3: Once all programming is complete, perform a system backup. See "Performing a System Backup" on page 302 for this procedure.

²⁰³ Battery powered WaveLinx Ceiling Sensors, WaveLinx WB and WWB Series Battery Powered Wallstations do not have the option to blink to identify.

²⁰⁴ The WaveLinx WAC Lighting App can be used with WAC2 WAC (Gen 2) minimum software version 11.x.x.x and higher.

Customizing Default Programming

While many applications will operate as desired with the built-in programming, some applications may require some customization. This section of the user manual will discuss how to make changes to the default programming. This includes:

- Modifying area, zones, and their devices
- Modifying scene settings and response
- Modifying wallstation button response
- Modifying contact closure input response
- Modifying occupancy sensor response, controlled zones, assigned sensors, using associated occupancy sets and deleting occupancy sets
- Modifying daylight sensor operation including setup and calibration of open and closed loop daylight control
- Adding schedule events
- Changing and testing demand response behavior
- Understanding white tuning application programming
- Modifying Power Sensing Devices for Emergency Device Operation

Modifying Areas, Zones, and Devices

This section discusses how to modify standard areas, zones and devices and how to modify partitioned areas, zones, and devices.

Modifying Standard Areas and their Zones and Devices

Standard areas and their zones and devices can all be modified after initial setup. This includes:

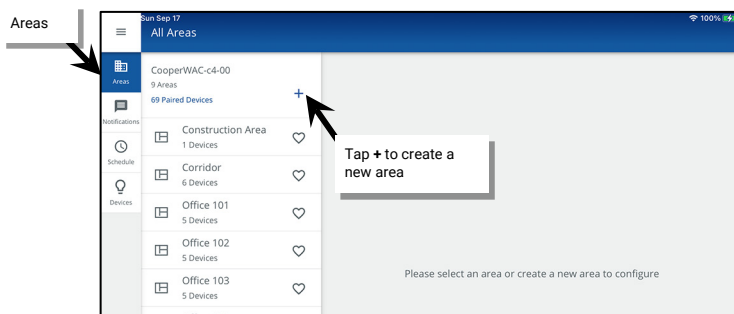
- Adding standard areas and zones
- Removing, adding, and moving devices
- Renaming areas, zones, and devices
- Deleting areas, zones, and devices

Adding a Standard Area

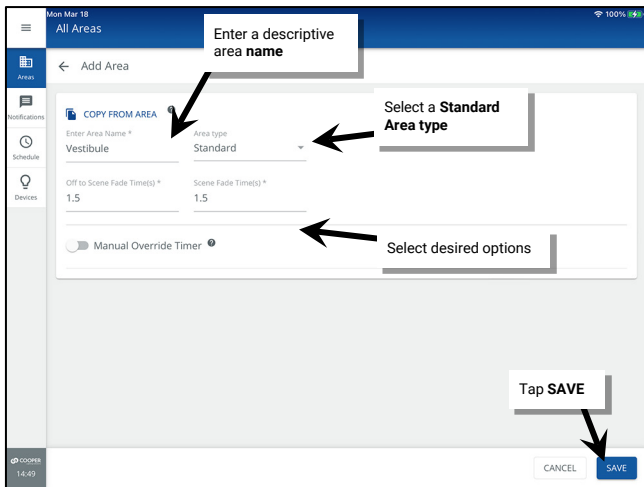
Standard Area: A **Standard Area** is a space within the facility with devices that operate separately from other spaces. Think of an area as a room within the facility. Devices will be assigned to areas as part of bringing the system online. Each WaveLinx Area Controller allows the creation of multiple areas.

To add a standard area:

1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **Areas** option, tap **+** to create a new area.

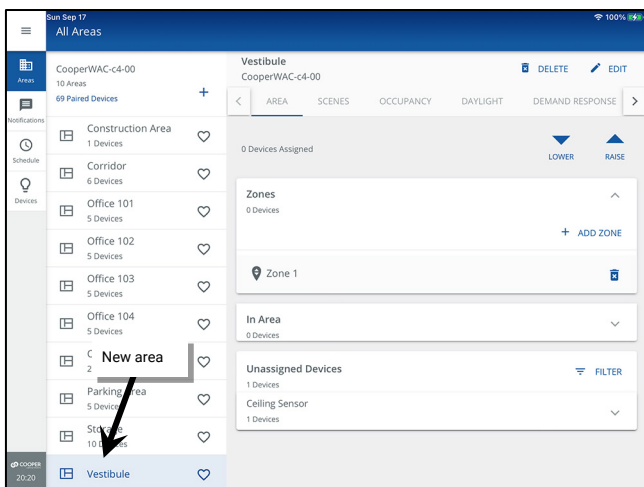


- 2: Enter a descriptive name for the area, select the **Standard Area** type and select any necessary options (see “Understanding and Modifying Area Settings” on page 186 for option details). Tap **SAVE** to create the new area.

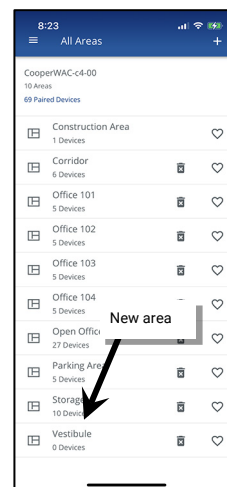


The new area will appear in the **All Areas** list.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



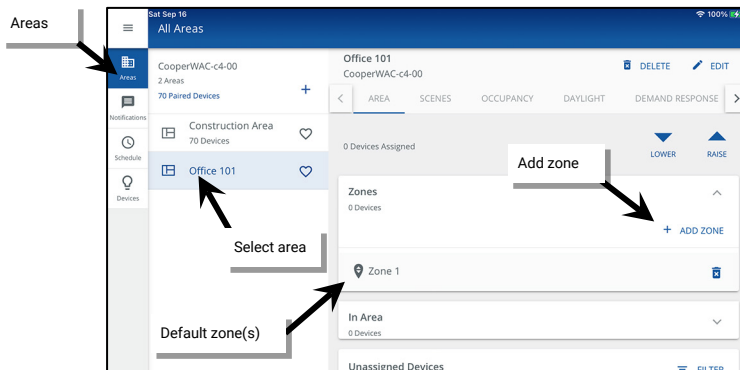
Adding a Zone in a Standard Area

- **Zone:** A **Zone** is a collection of load devices within an area that operate together. For instance:
 - Fixtures in the same row may be grouped into a dimmable zone to allow for uniform operation
 - Controlled WaveLinX PRO Receptacles or receptacles operated from WaveLinX PRO or CAT Switchpacks are placed in a receptacle zone to allow easy control capability.
 - White tunable devices may be separated to allow for separate control of color tuning from the ON/OFF and dimming functionalities of the fixtures.

There are four different types of zones that can be created in an area:

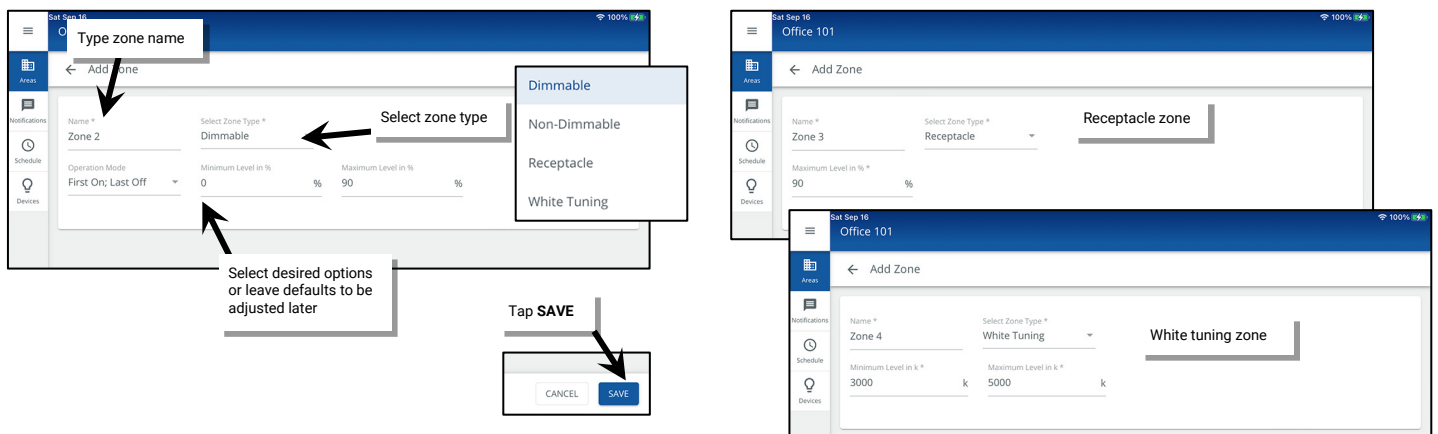
- **Dimmable Zone:** May contain any dimmable load connected to a dimmable WaveLinX device.
- **Receptacle Zone:** May contain switched controlled receptacle devices.
- **Non-dimmable Zone:** May contain non-dim load (switched load) devices.
- **White Tuning Zone:** May contain white tuning control devices.

- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **All Areas** list, tap the area name.
- 2: In the zone section, review the current zones/zone types. Tap **+** to create a new zone if necessary.

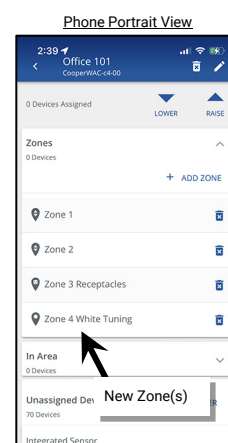
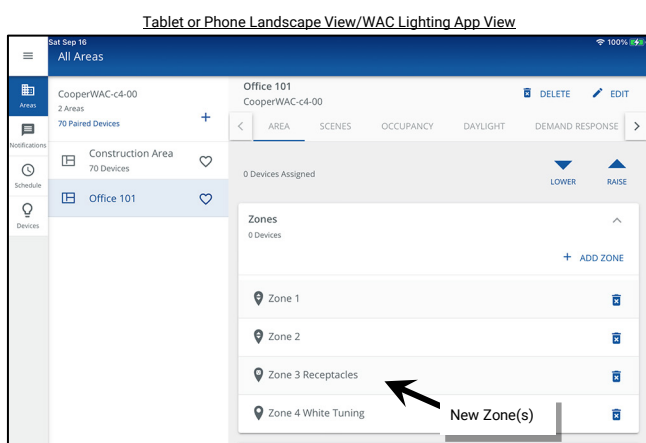


- 3: Type a descriptive name for the zone, and then select the zone type (dimmable, non-dimmable [switched], receptacle, or white tuning). **Zone type cannot be changed after initial setup.**

Make parameter selections or leave defaults in place to be adjusted later (see “Understanding and Modifying Zone Settings” on page 189 for explanation). For White Tuning zones, the max and min level fields, should match a Kelvin temperature range that all the white tuning fixtures support (refer to the fixture information for the supported ranges). Tap **SAVE**.



Once the zone is created, the new zone should appear in the area's zone list.

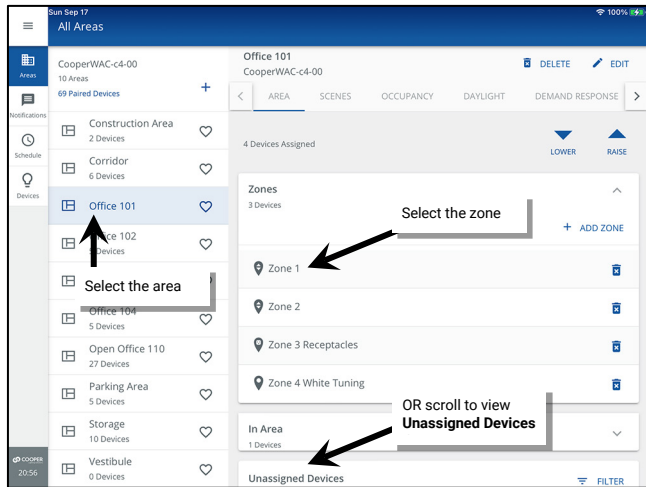


IMPORTANT: Newly created dimmable, non dimmable and receptacle zones are automatically assigned to the default occupancy set. To change this automatic assignment, see “Adjusting Occupancy Set Controlled Zones” on page 215.

Adding Devices to a Zone or Standard Area

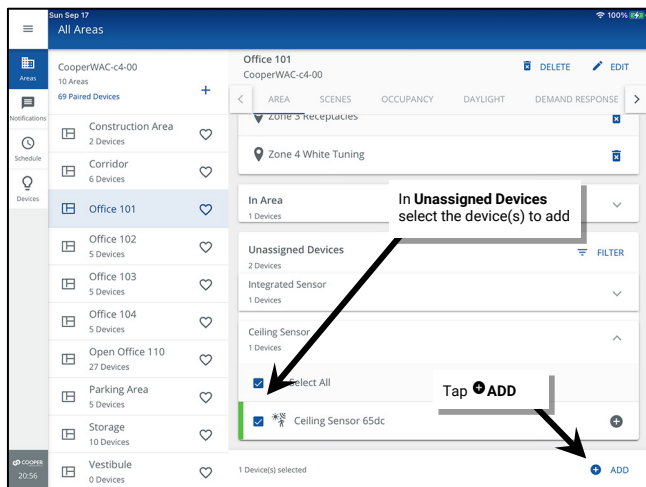
To add devices to a zone or standard area after the initial setup, follow the steps below.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁰⁵ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified. If the device should be in the **area**, scroll down to the **Unassigned Devices**. If the device should be in a **zone**, then tap a zone to open it.

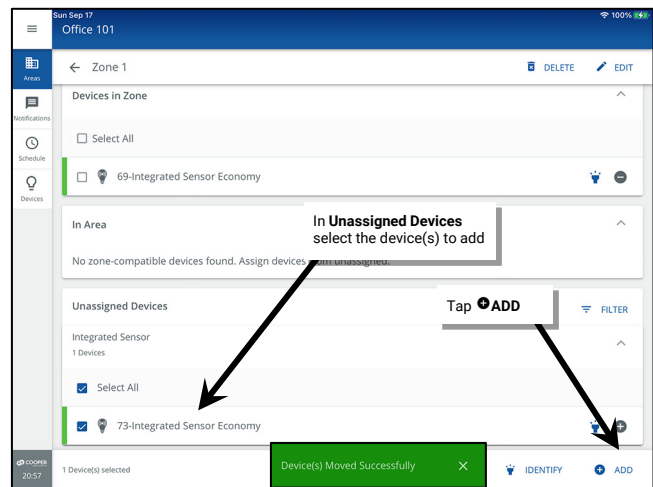


- 3: In the **Unassigned Devices** section, identify and then select the desired device(s). Tap **+** ADD to move the device(s) into the zone or area.

Add Devices to an Area



Add Devices to a Zone

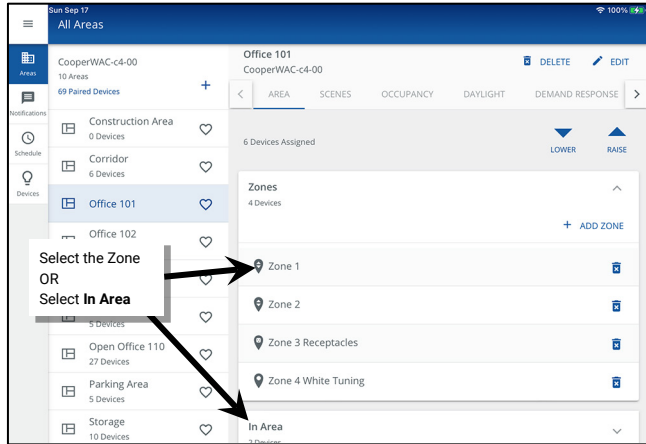


²⁰⁵ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

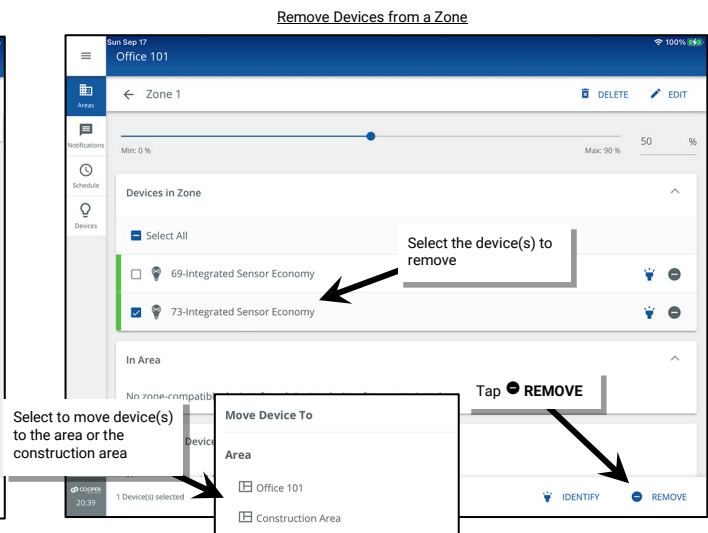
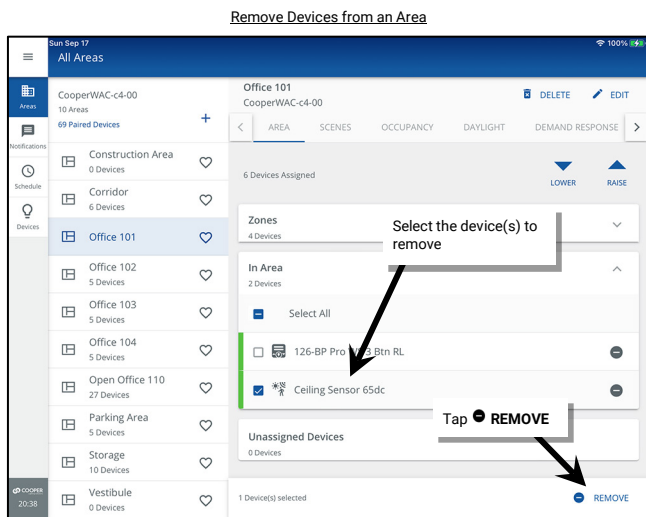
Removing Devices from a Zone or Standard Area

To remove devices from a zone after the initial setup, follow the steps below.

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁰⁶ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified, and then tap on the desired zone or locate the device in the **In Area** section.



- 3: Select the desired device(s), and then tap **REMOVE**. If removed from the **In Area** section, the devices will automatically be moved to the Construction Area removing it from the user defined area. If removed from a zone, choose between moving the device into the **In Area** section (ready to assign to another zone in the same area) or to the Construction Area removing it from the user defined area. Notifications will be displayed regarding the move.




²⁰⁶ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Moving a Device from One Zone/Standard Area to Another Area

To move a device from one zone or area to another, simply remove the device from where it is currently assigned and then add it to the desired location. For step-by-step instructions:

- First remove the device. See “Removing Devices from a Zone or Standard Area” on page 168.
- Then add the device. See “Adding Devices to a Zone or Standard Area” on page 167.

Renaming Standard Areas, Zones, and Devices

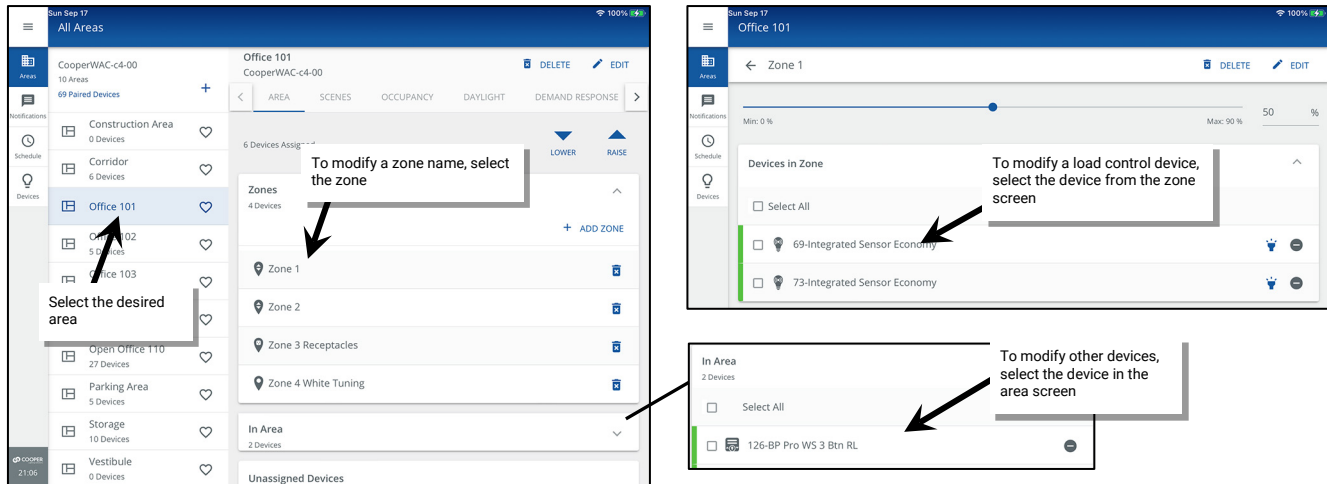
Generic names will be assigned to the default zones and to devices during the configuration process. It is recommended, but not required, that the default names of areas, zones and devices be updated for easy identification. This is done using **EDIT** .


To modify the name of an area, zone, or device:

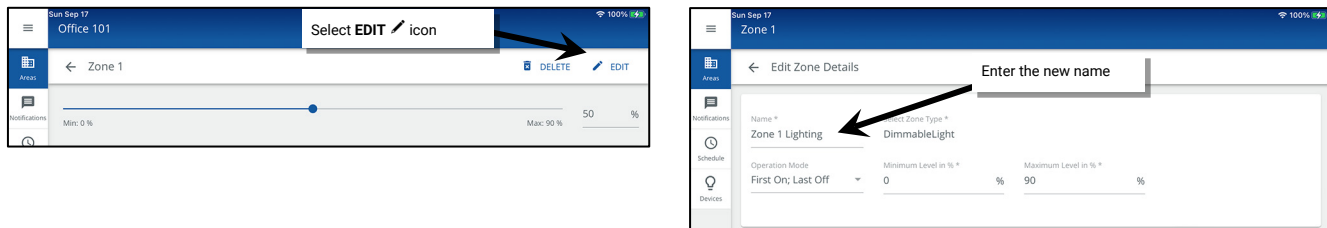
1: Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App²⁰⁷, login to the WaveLinx Area Controller as the administrator user.

2: Select the item to be changed:

- Area: In the **All Areas** list, select the area that will be modified.
- Zone: Select the zone in the area screen.
- Device: Select a device that directly controls a load in its assigned zone screen. Select other devices in the area screen's **In Area** section.



3: Select **EDIT**  within the item's screen. Tap the name field and type a unique name for the item (no more than 20 characters). Select **SAVE** to apply the change.



²⁰⁷ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Deleting Standard Areas, Zones, and Devices

Areas, zones, and devices can be deleted at any time.

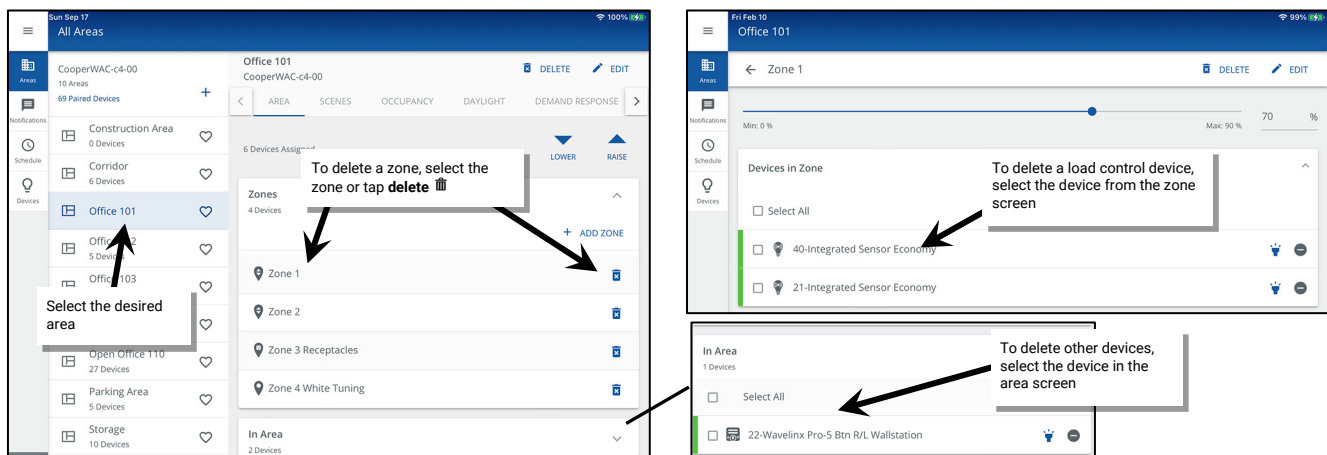
- A device that is deleted will return to its out-of-the-box, unpaired state. If it is a WaveLinx PRO or WaveLinx LV device, it will need to be paired as a new device. If it is a WaveLinx CAT device, it will need to be re-added through the Area Hub's device details page by running a rescan.
- When a zone is deleted, any devices still assigned to the zone will be moved into the **In Area** section of the zone's assigned area.
- When an area is deleted, all devices assigned to the area will be moved to the construction area.

To delete an area, zone, or device:

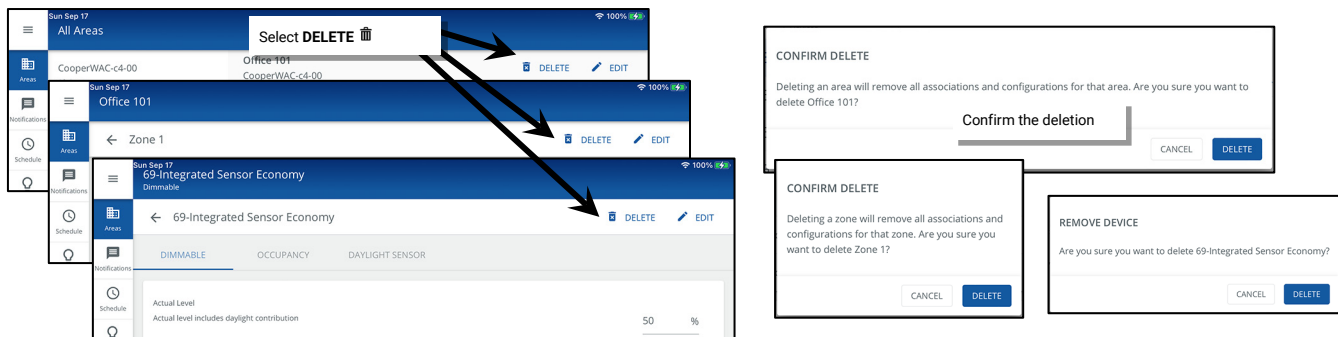
1: Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App²⁰⁸, login to the WaveLinx Area Controller as the administrator user.

2: Select the item to be changed:

- **Area:** In the **All Areas** list, select the area that will be modified.
- **Zone:** Select the zone in the area screen.
- **Device:** Select a device that directly controls a load in its assigned zone screen. Select other devices in the area screen's **In Area** section.



3: Select **DELETE** within the item's screen and then confirm the deletion.

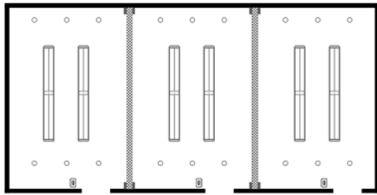


²⁰⁸ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

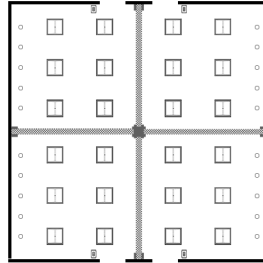
Modifying Partitioned Areas and their Zones and Devices

The WaveLinx Area Controller version 14.1.x.x and higher allows creation of **two** partitioned areas per WaveLinx Area Controller. A **partitioned area** is a space within the facility that may have moveable divider walls to allow creation of one large space or several smaller spaces called **sub areas**. Devices in the space may need to operate independently for a single sub area when divider walls are closed or may need to operate a combination of sub areas when walls are opened.

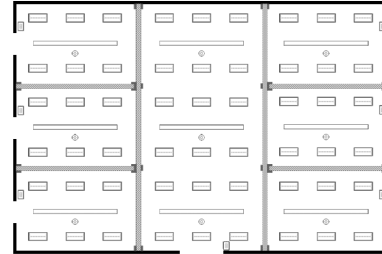
A partitioned area can have a maximum of **10 sub areas** and/or **10 divider walls**. This allows for accommodation of many different partitioning layouts such as those pictured below:



Example 1: 3 Sub Areas, 2 Partitions



Example 2: 4 Sub Areas, 4 Partitions



Example 3: 7 Sub Areas, 10 Partitions

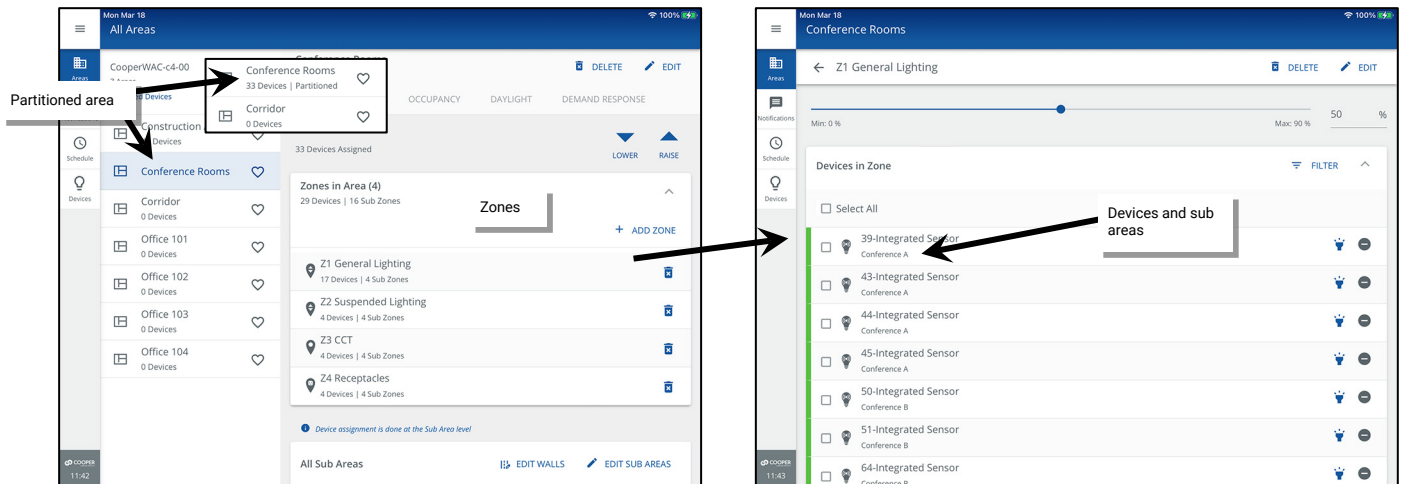
A partitioned area does allow some modification after initial setup. This section includes details on:

- Understanding basic navigation in the partitioned area screens
- Adding a partitioned area and zones
- Assigning/removing sub zones from a partitioned area's sub area
- Removing, adding, and moving devices
- Renaming areas, sub areas, zones, partition walls, and devices
- Deleting areas, zones, and devices
- Change the partition wall sub area selections
- Changing the partition wall open close signal input

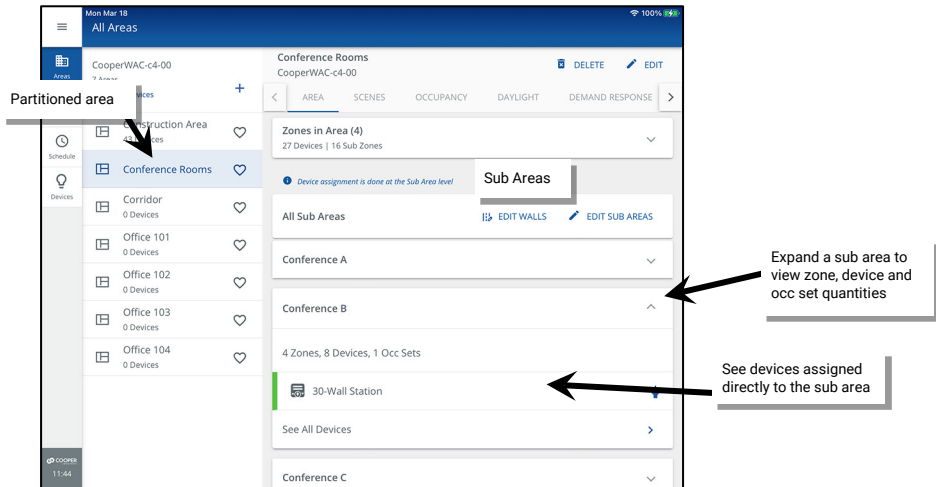
Understanding Basic App Navigation in a Partitioned Area

The screen layout of a partitioned area differs from a standard area. This section discusses the basics of navigation within a partitioned area.

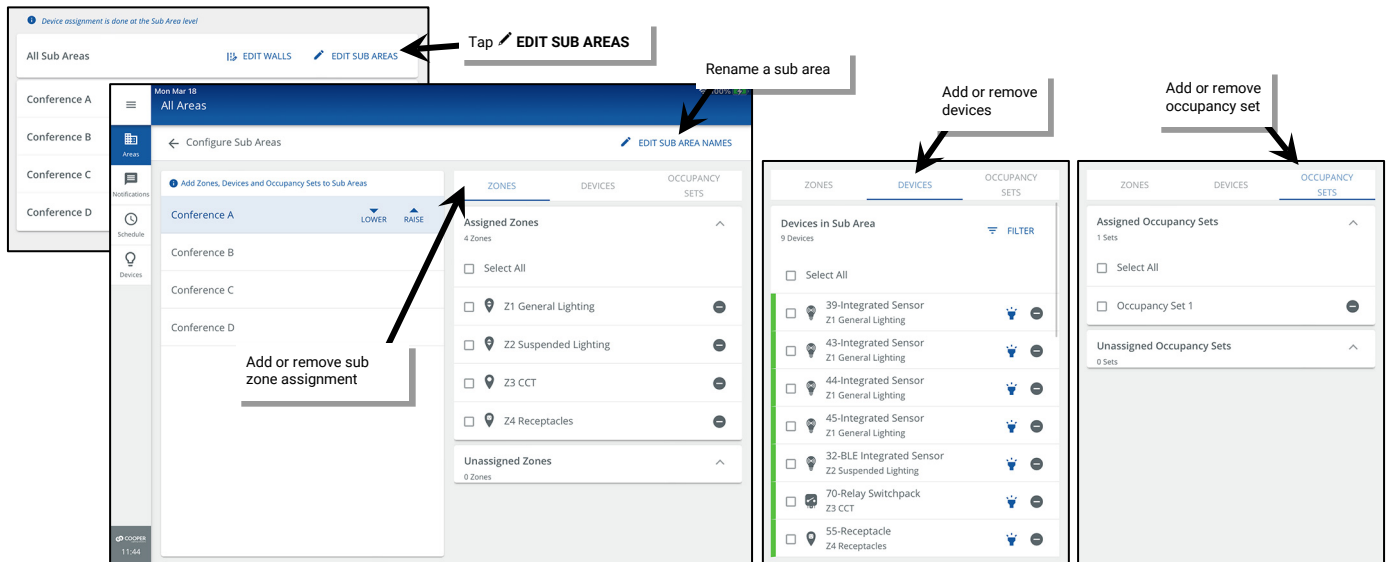
In the **All Areas** list, the partitioned areas will show the word **"Partitioned"** in the area list next to the quantity of assigned devices. Select the **partitioned area** to open it. The partitioned area will open to the main area screen. At the top of the screen are the area's zones. Tap any zone to see the devices assigned to the zone. In a partitioned area, the devices will also show which sub area they are assigned to.



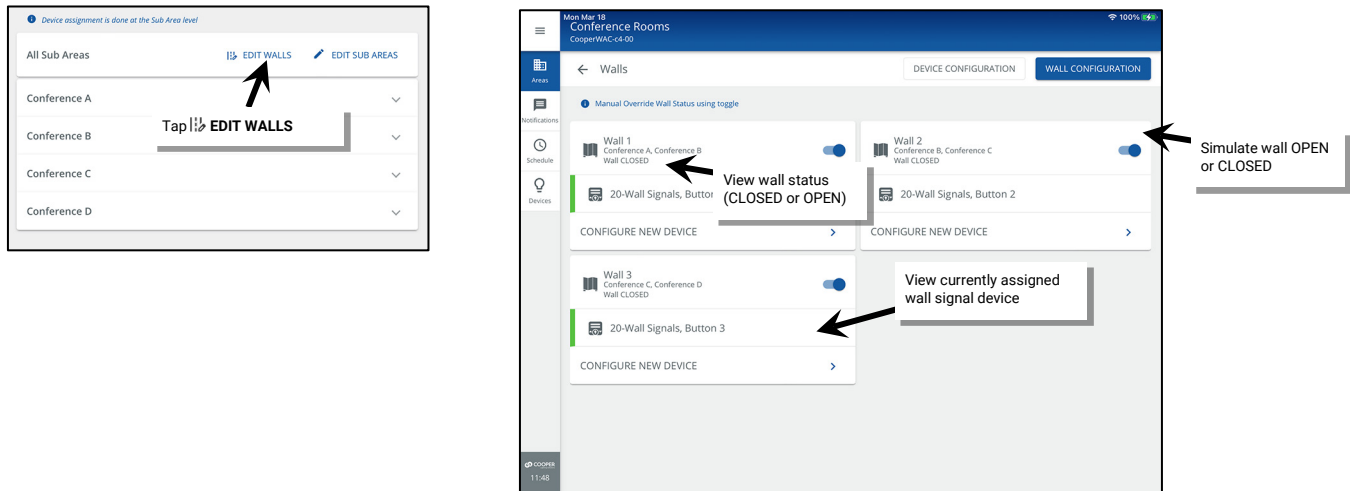
At the bottom of the main area screen are the area's sub areas. Expand any sub area to view the devices that are assigned directly to the sub area (typically wallstations, ceiling sensors and other input devices) and the quantity of sub zones, devices and occupancy sets that are assigned to that sub area.



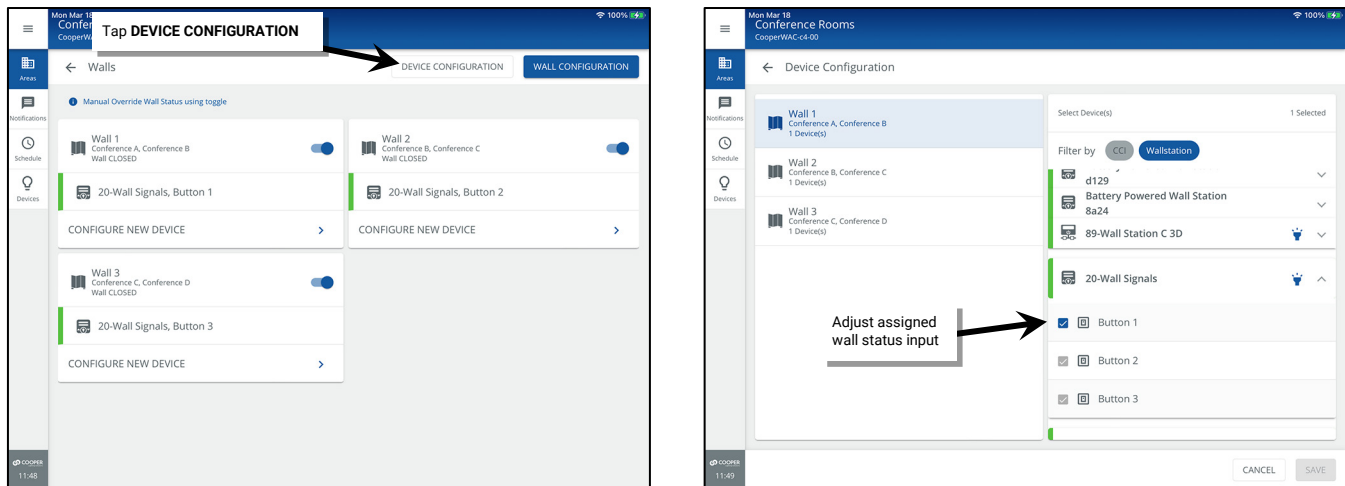
In the sub area section, tap on **EDIT SUB AREAS** to view configuration screens for the sub areas. Change the name of the sub areas or in each sub area, view and change sub zone assignments, view or change device assignment, and view or change occupancy set assignments.



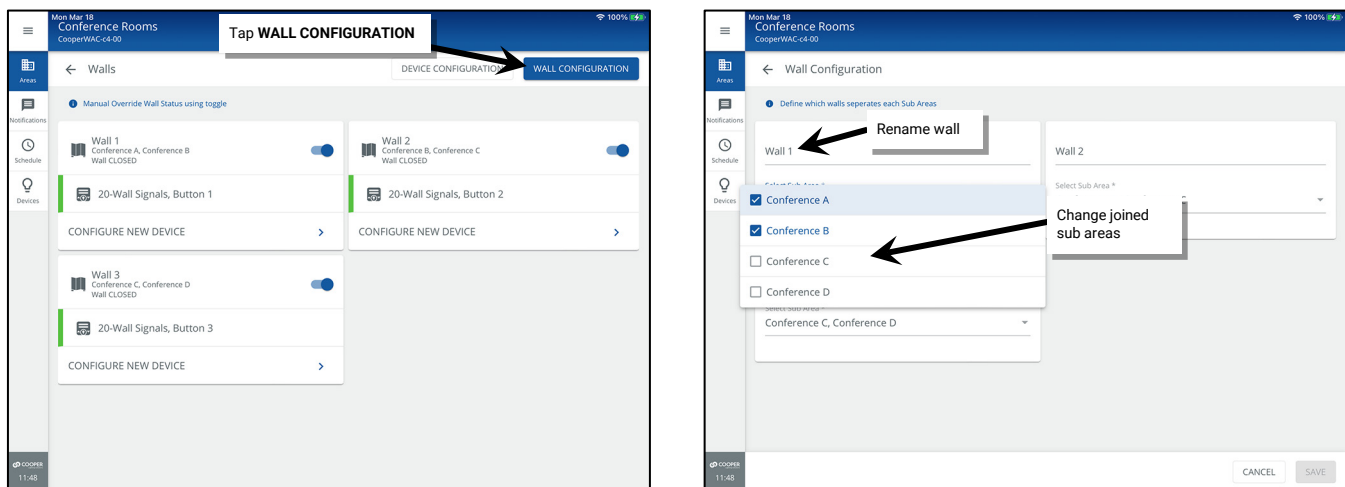
Back at the main area screen, at the top of the sub areas, tap **EDIT WALLS** to open the main wall dashboard. This screen allows you to view the current open or closed wall status or issue the open and closed command from the WaveLinx App to simulate the wall closure input (The onscreen button to simulate wall closure will not operate if a CAT Contact Closure Module input is being used for wall open and close signal). It also allows quick identification of the device currently mapped to each wall to provide the wall signal to the WaveLinx system.



Tap **DEVICE CONFIGURATION** to change the device currently mapped to each wall.

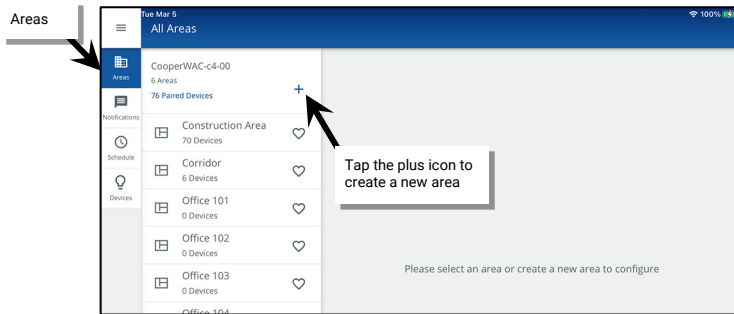


Tap **WALL CONFIGURATION** to change the name of partition walls or to modify the joined sub areas.



Adding a Partitioned Area

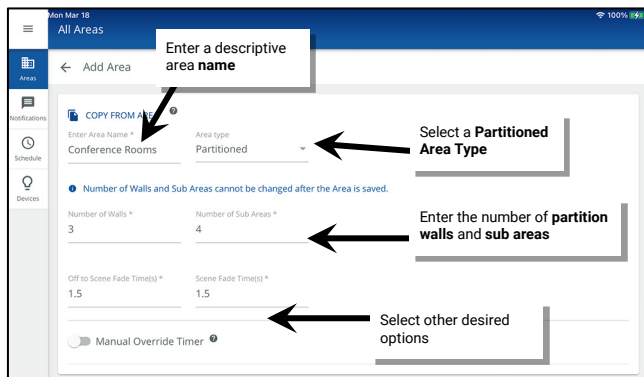
1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **Areas** option, tap **+** to create a new area.



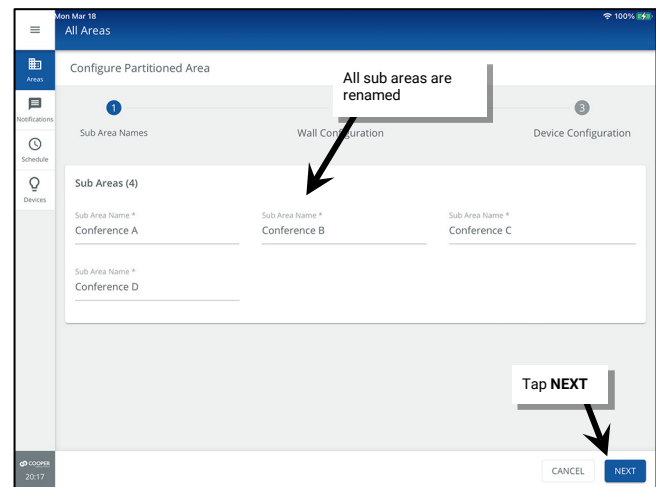
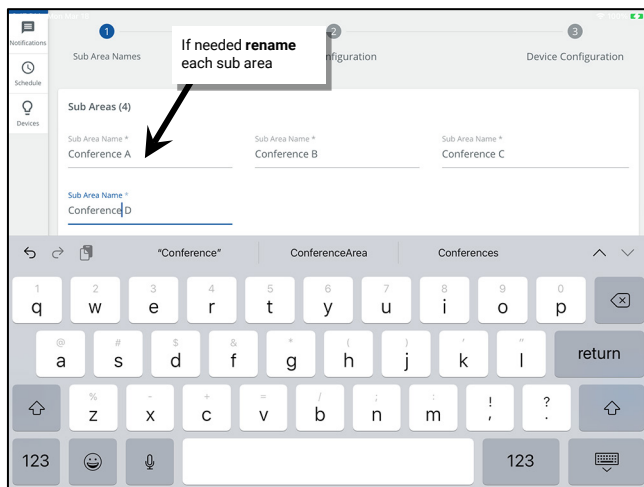
2: Enter a descriptive **name** for the partitioned area and then select the **Partitioned** Area Type.

3: Enter the **number of partition walls** and **number of sub areas** in the partitioned area and then select any additional necessary options "Understanding and Modifying Area Settings" on page 186 for option details). Tap **NEXT** to create the new area and advance to the next screen.

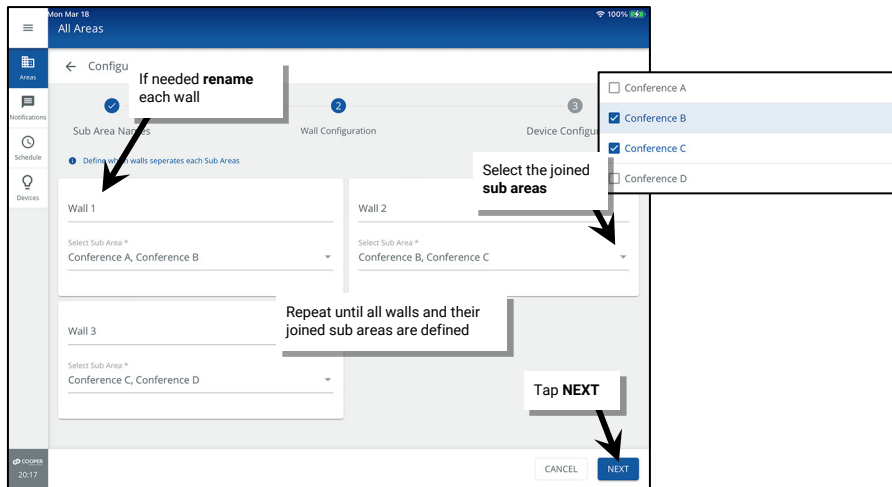
The number of walls and sub areas cannot be changed after the area is created. If the walls or sub areas are incorrect, delete the partitioned area and recreate it with the correct quantities of walls and sub areas.



4: If needed, adjust the default **Sub Area Names**. Tap a name and change to the desired name, repeating for each sub area. Tap **NEXT** once all sub area names are correct.



5: Perform the **Wall Configuration**. Tap any **Wall Name** to change the default name and then use the drop down to **select the sub areas** that the wall joins. Repeat until all wall names and sub areas are defined. Tap **NEXT** to move on to the next step.

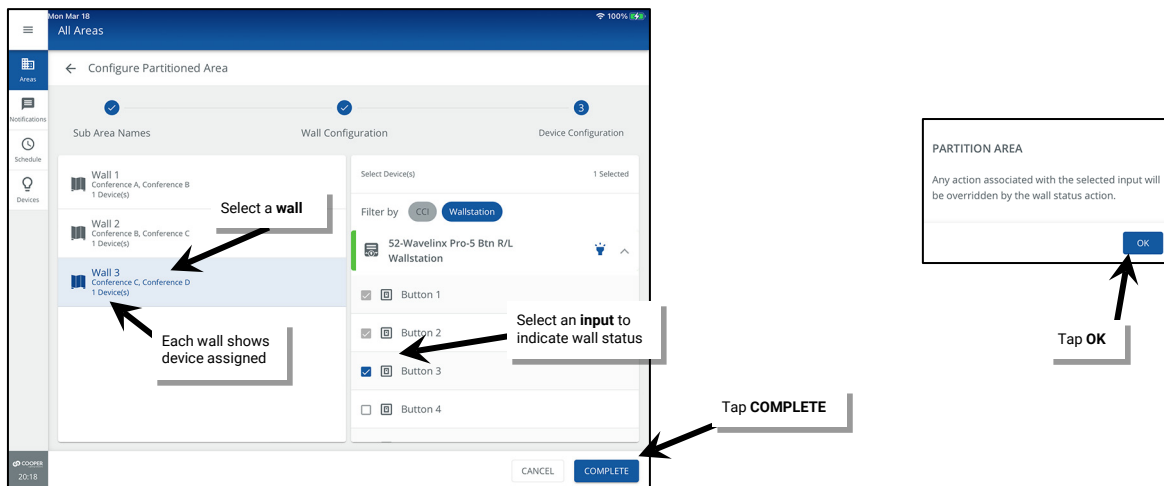


6: Perform the **Device Configuration** to select the input that will indicate that each wall is open or closed. Tap a **wall**. Compatible input devices will be displayed in the **Select Device(s)** list. Once the correct device is located, **check the input** that will be associated with this wall.

- The compatible device list will include CCI (contact closure input) and wallstation devices regardless of the area they are assigned to.
- Use the filter to streamline the view to **CCI** (contact closure input) devices or **wallstations**.
- For devices that support identification, select to place a device into **Blink to Identify** mode to aid in identifying the device.

7: Repeat step 6 for each wall until an input is selected for each wall. Note that inputs that report to other walls will be selected and grayed out. Tap **COMPLETE**.

8: When prompted, tap **OK** to acknowledge that the defined input action will be replaced with the wall status action.



IMPORTANT: The device(s) that contain the inputs being assigned to the wall action **WILL NOT** be moved from their previously assigned area. If the devices are left in the construction area, there is risk of them being removed when devices are cleared from the construction area. To avoid this, make certain to assign the wall input device(s) to one of the partitioned sub areas.

Adding a Zone in a Partitioned Area

Once the partitioned area is created, create the necessary zones for the application. The partitioned area contains one **Zone** (Zone 1) by default. Additional zones can be created as needed. In a partitioned area, **zones** are created at the main **Partitioned Area** screen. To maximize the number of zones available for other areas, the zones are then assigned as **sub zones** if they are needed in the **sub areas**.

A **zone** is a group of devices that will be controlled together in the exact same way. In a partitioned area, devices in each sub area that should operate together when partition walls are open should be assigned to the same zone number in each sub area creating **sub zones** which allow for a uniform response in the joined area.

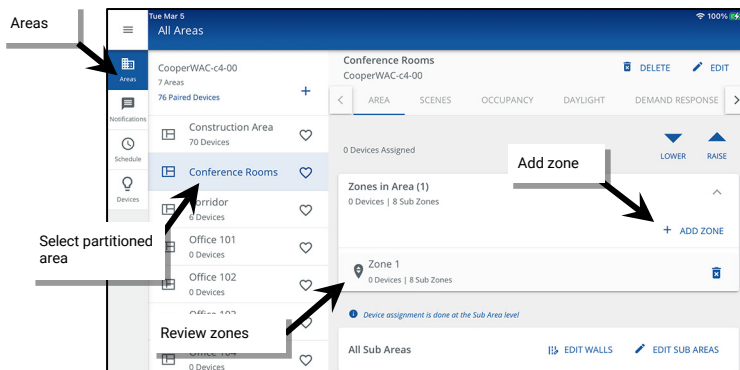
- If each sub area contains fixtures that should operate together when all walls are opened/all sub areas joined, then the fixtures will need to be assigned to the same zone number in each sub area.
- Controlled receptacles in the sub areas might be placed in the same receptacle zone in each sub area so they switch ON and OFF together when the room is joined.
- A zone might also be used to separate the color temperature control of tunable white devices from the ON/OFF and dimming control functionalities, again with the same zone being assigned to each sub area to allow for uniform control in a joined room.

There are four different types of zones that can be created in an area:

- Dimmable Zone: May contain any dimmable load connected to a dimmable WaveLinX device.
- Receptacle Zone: May contain switched controlled receptacle devices.
- Non-dimmable Zone: May contain non-dim load (switched load) devices.
- White Tuning Zone: May contain white tuning control devices.

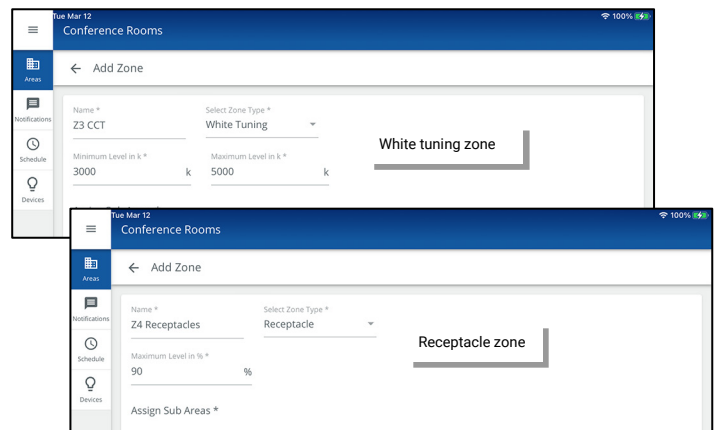
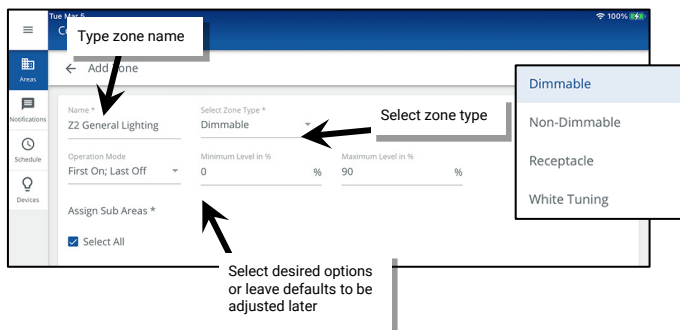
To add zones to a partitioned area and assign the zone to sub areas (sub zone):

- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator. In the **All Areas** list, tap the partitioned area name.
- 2: In the zone section, review the current zones/zone types. Tap **+** to add a new zone if necessary.

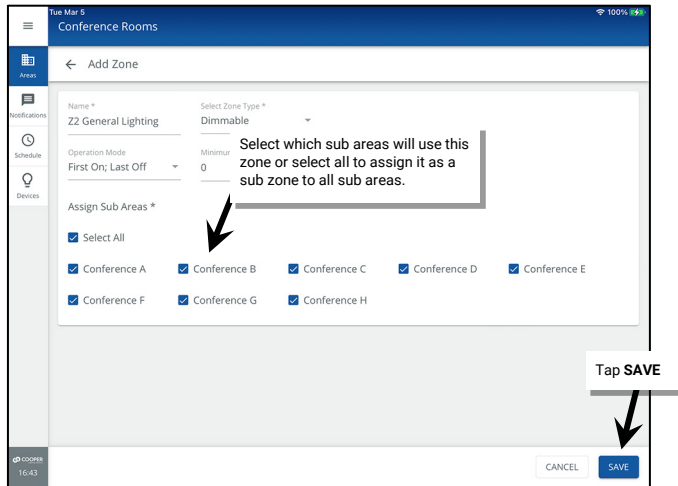


- 3: Type a descriptive name for the zone, and then select the zone type (dimmable, non-dimmable [switched], receptacle, or white tuning). **Zone type cannot be changed after initial setup.**

Make parameter selections or leave defaults in place to be adjusted later (see “Understanding and Modifying Zone Settings” on page 189 for explanation). For White Tuning zones, the max and min level fields, should match a Kelvin temperature range that all the white tuning fixtures support (refer to the fixture information for the supported ranges).



- 4: **Assign the Zone to the Sub Areas (sub zone)** that will have devices operating in it. Tap **Select All** or individually select the sub areas if the zone will not be used in some sub areas. For instance, if each sub area contains lighting fixtures that will need to operate together when the room is joined, use **Select All** to assign the sub zone to all sub areas. If only some sub areas have fixtures that operate together and other sub areas will operate separately, select **only** the sub areas that need have fixtures that will be assigned to this zone to maximize the number of zones available for other areas. Tap **SAVE**.



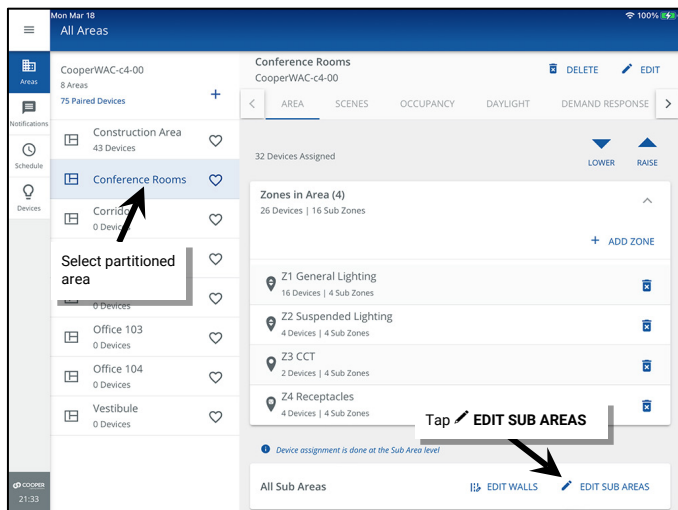
Add or Remove Sub Zone Assignments from a Sub Area

The WaveLinx Area Controller allows the creation of up to 200 zones total. This number includes sub zones in partitioned area. For instance, if the partitioned area has four zones which are assigned to four sub areas, this uses a total of 16 of the allowed zones. To maximize the quantity of zones available for other areas, sub zones should be assigned only to the sub areas that have devices to be assigned to those sub zones.

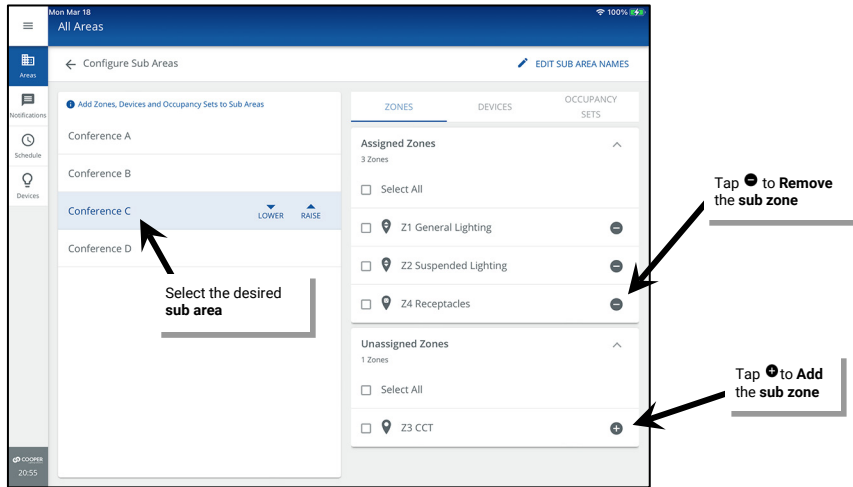
Sub zones are typically assigned to sub areas as part of creating a new zone. Before performing the procedures in this section, make sure that all the needed zones are created in the partitioned area.

To add or remove a sub zone assignment from a partitioned area:

- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **All Areas** list, tap the partitioned area name.
- 2: In the **All Sub Area** section, tap **EDIT SUB AREAS**.

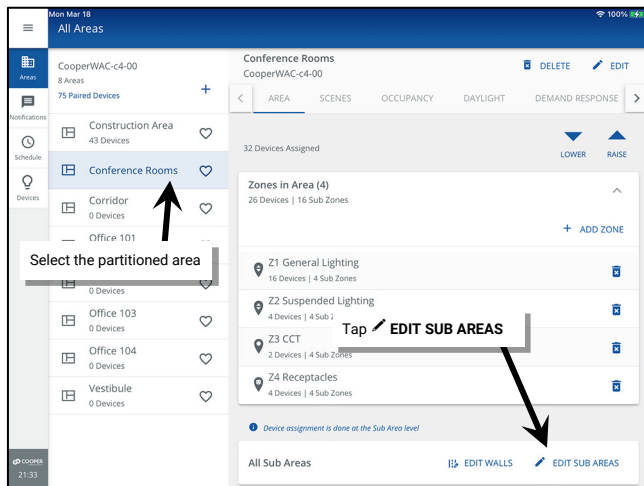


- 3: Select the sub area to adjust and select the Zones tab. Tap **+** **Add** to assign a sub zone to the sub area. Tap **-** **Remove** to unassign a sub zone to the sub area.

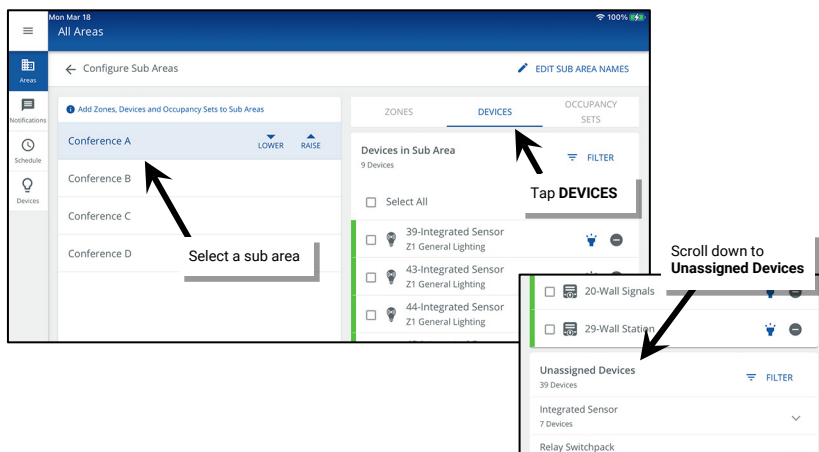


Adding Devices to a Sub Area or Sub Zone in a Partitioned Area

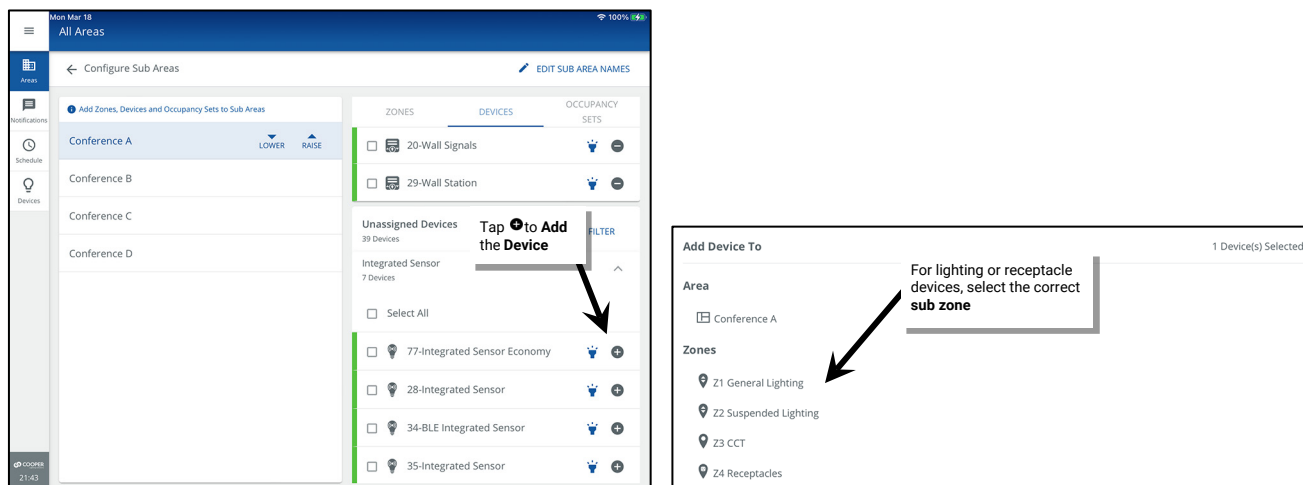
- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT SUB AREAS**.



- 3: Select the **sub area** and tap on **DEVICES** to scroll down and view the **Unassigned Devices** section.

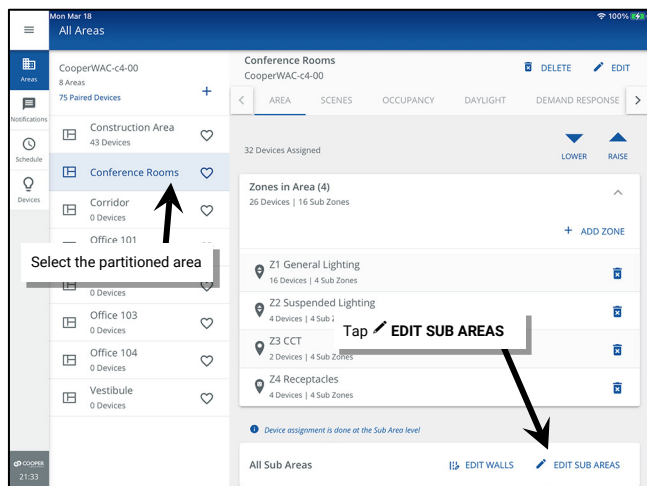


- 4: In the **Unassigned Devices** section, identify and then select the desired device(s). Tap **+ Add**. For load control devices, when prompted select the **sub zone**.

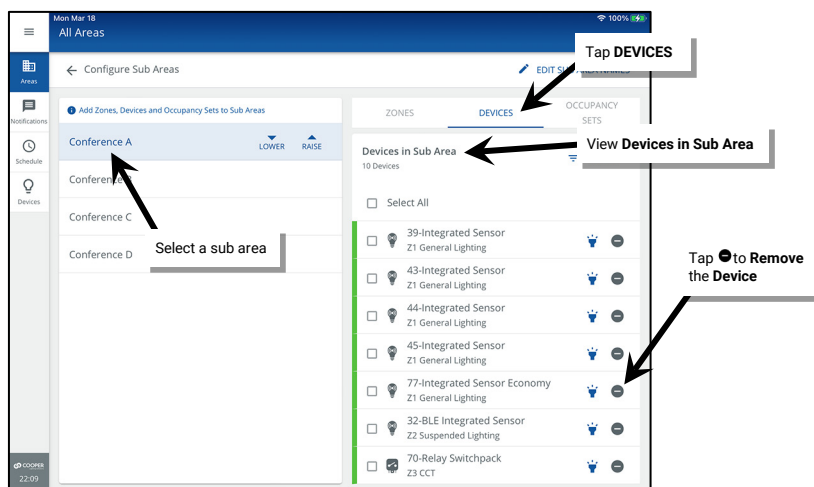


Remove Devices from a Sub Area or Sub Zone

- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT SUB AREAS**.



- 3: Select the **sub area** and tap on **DEVICES** to view the **Devices in Sub Area**. Identify and select the desired device(s) and tap **Remove**. The device(s) will be moved to the Construction Area.



Moving a Device from on Sub Zone or Sub Area to Another

To move a device from one sub zone or sub area to another, simply remove the device from where it is currently assigned and then add it to the desired location. For step-by-step instructions:

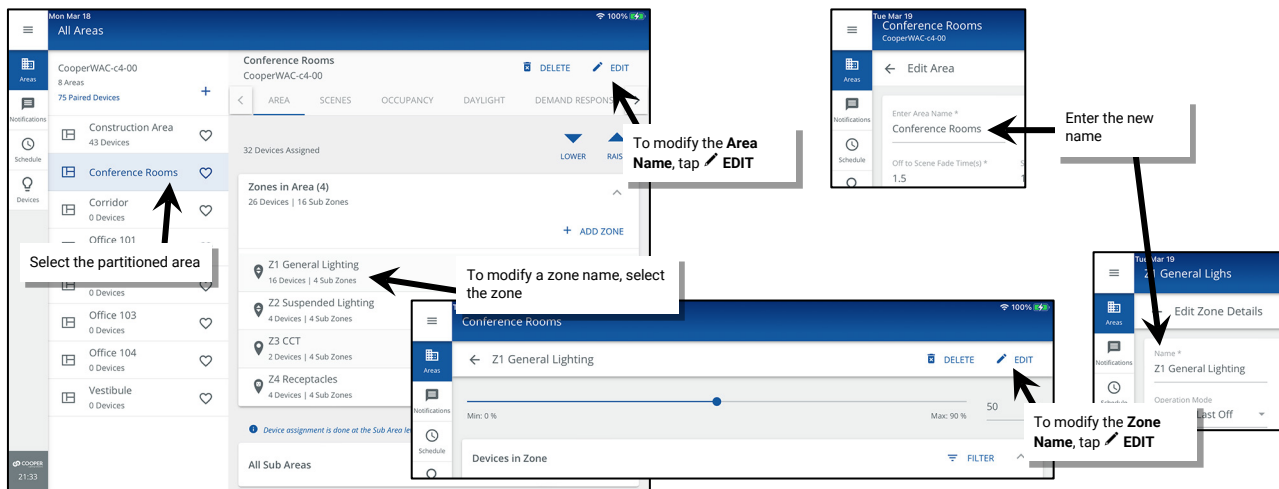
- First remove the device. See “Remove Devices from a Sub Area or Sub Zone” on page 179.
- Then add the device. See “Adding Devices to a Sub Area or Sub Zone in a Partitioned Area” on page 178.

Renaming Areas, Sub Areas, Zones, Partition Walls, and Devices

Generic names will be assigned to the default zones and to devices during the configuration process. It is recommended, but not required, that the default names of areas, zones and devices be updated for easy identification. Sub areas and partition wall names can also be renamed if not done during the initial setup process.

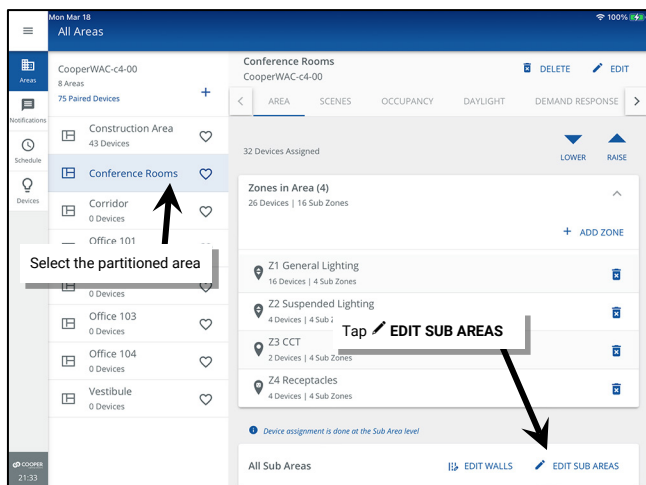
To modify the name of a partitioned area or zone in the partitioned area:

- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area**.
- 3: Select the item to be changed:
 - **Area:** In the **All Areas** list, select the area that will be modified.
 - **Zone:** Select the zone in the area screen.
- 4: Select **EDIT** within the area or zone screen. Tap the name field and type a unique name for the item (no more than 20 characters). Select **SAVE** to apply the change.

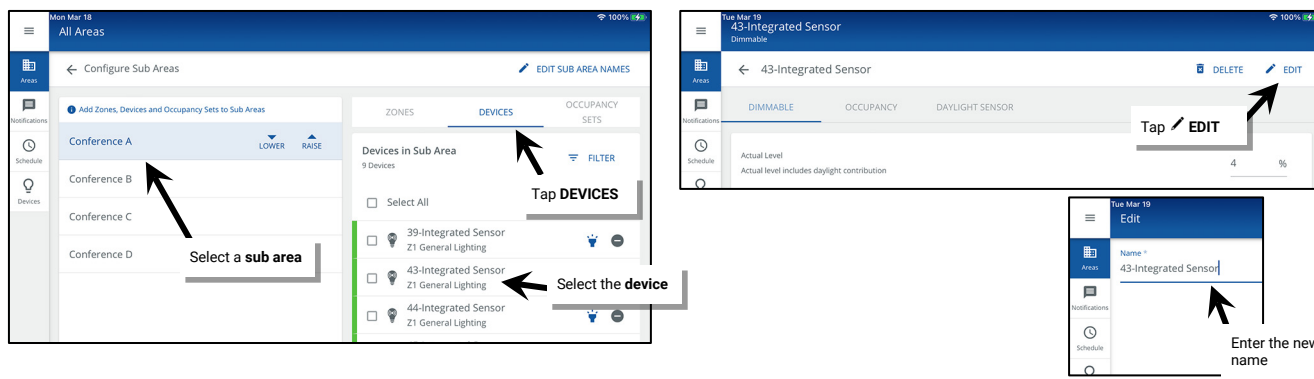


To modify the name of a device in a partitioned area:

- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT SUB AREAS**.

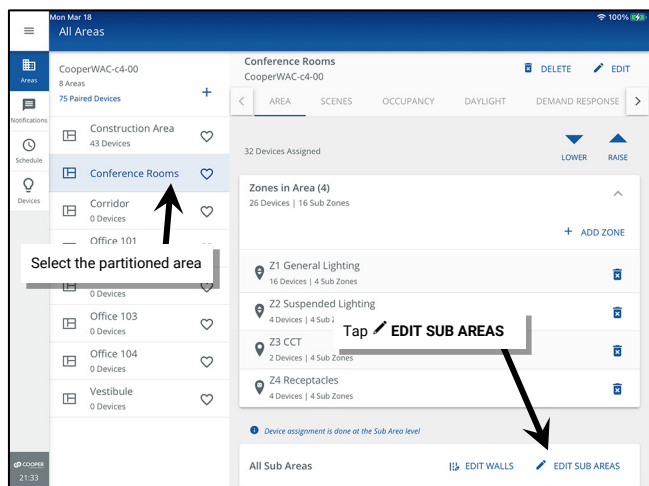


- 3: Select the **sub area** and tap on **DEVICES**. Locate the desired device and tap it to open the device screen.
- 4: Select **EDIT** within the device screen. Tap the name field and type a unique name for the item (no more than 20 characters). Select **SAVE** to apply the change.

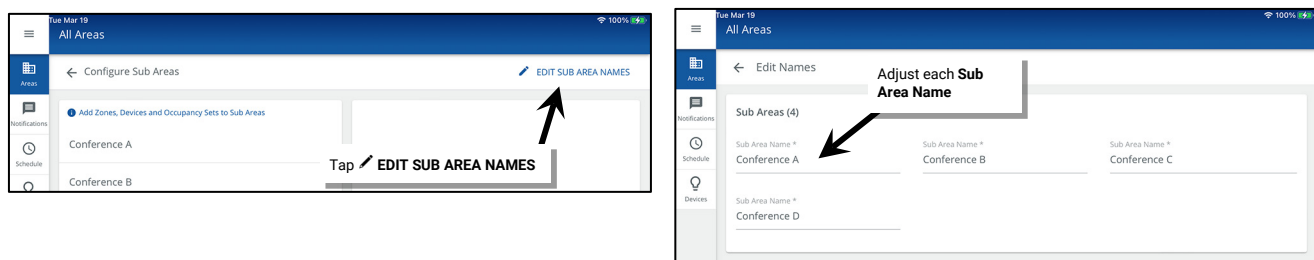


To modify the name of a sub area:

- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT SUB AREAS**.

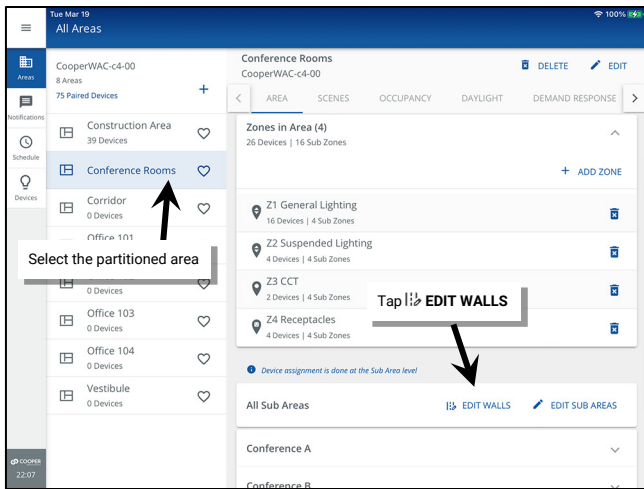


- 3: At the top of the screen, select **EDIT SUB AREA NAMES**. Edit each **Sub Area Name** and then tap **SAVE**.

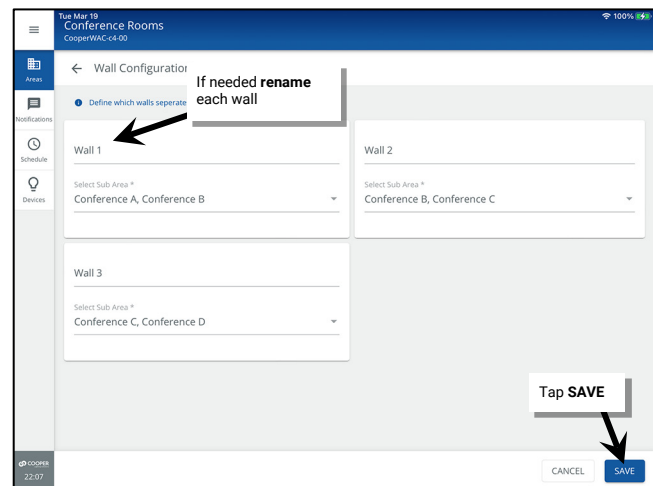
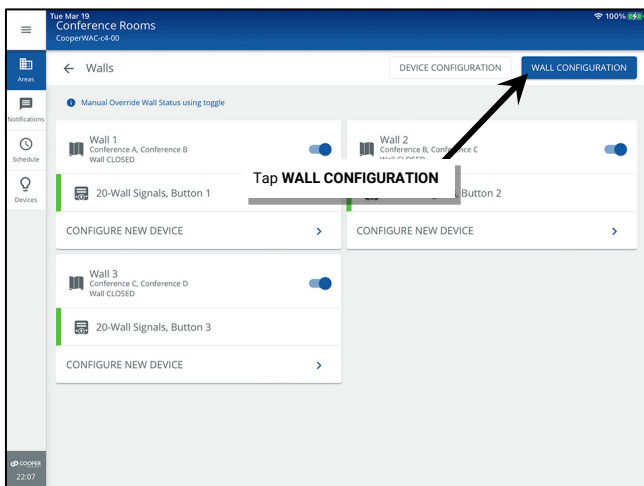


To modify the name of a partition wall:

- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT WALLS**.



- 3: In the **Walls** screen, tap **WALL CONFIGURATION**.
- 4: Tap any **Wall Name** and change it to the desired name. Tap **SAVE**.



Deleting Partitioned Areas, Zones, and Devices

Sub areas and partition walls cannot be deleted after the area is created. If the quantity of sub areas or partition walls changes, delete the entire area and recreate it with the correct number of sub areas and walls.

The partitioned area, zones, and devices can be deleted at any time.

To delete a partitioned area or zone

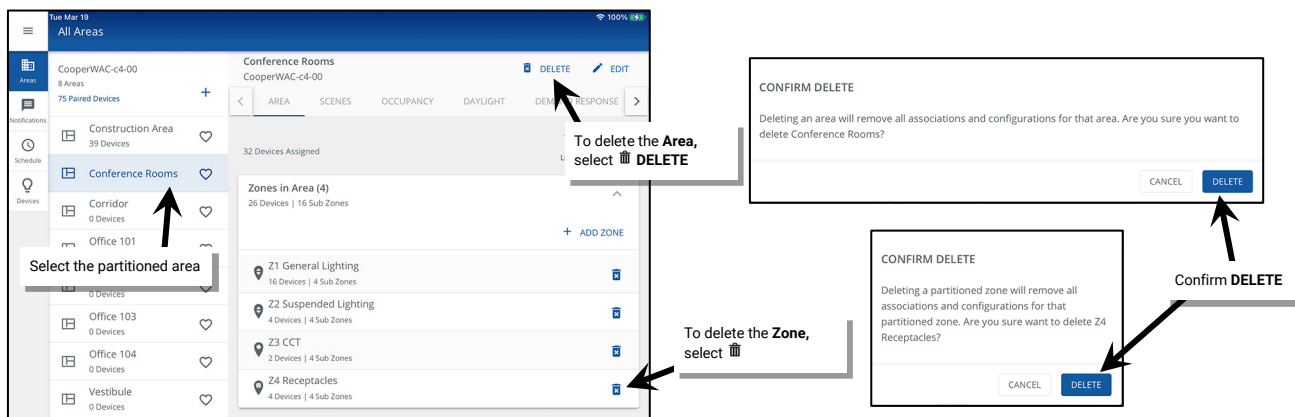
- When a **zone** is deleted, any devices still assigned to the zone will be moved into **Devices In Area**, without zone assignment.
- When an **area** is deleted, all devices assigned to the area will be moved to the construction area.

1: Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App²⁰⁹, login to the WaveLinx Area Controller as the administrator user.

2: Select the item to be changed:

- **Area:** In the **All Areas** list, select the area that will be modified.
- **Zone:** Select the zone in the area screen.

3: Select **DELETE** within the item's screen and then confirm the deletion.

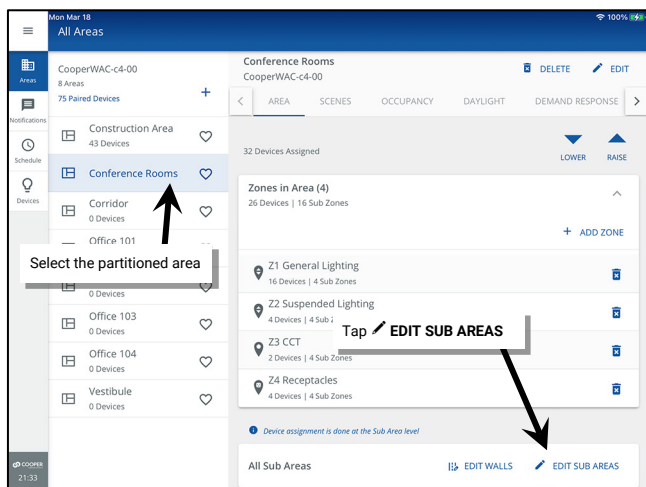


To delete device in a partitioned area:

A **device** that is deleted will return to its out-of-the-box, unpaired state. If it is a WaveLinx PRO or WaveLinx LV device, it will need to be paired as a new device. If it is a WaveLinx CAT device, it will need to be re-added through the Area Hub's device details page by running a rescan.

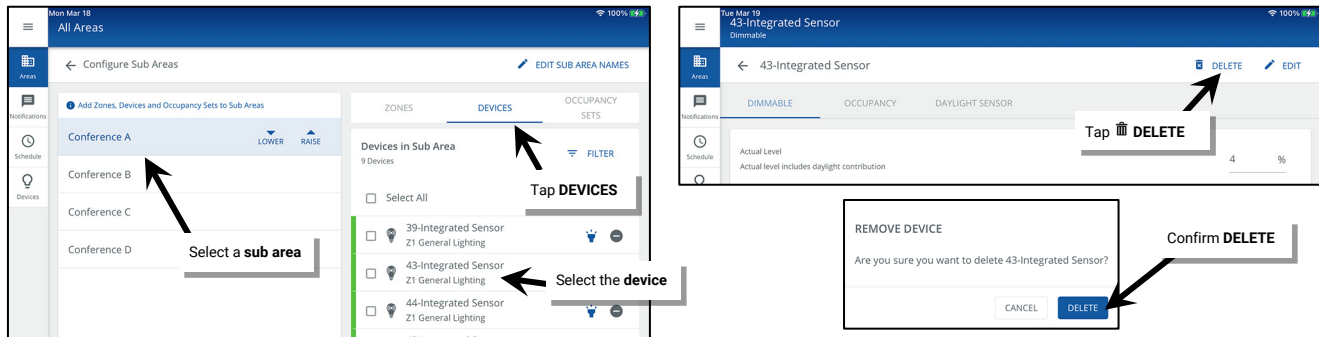
1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator.

2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT SUB AREAS**.



²⁰⁹ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

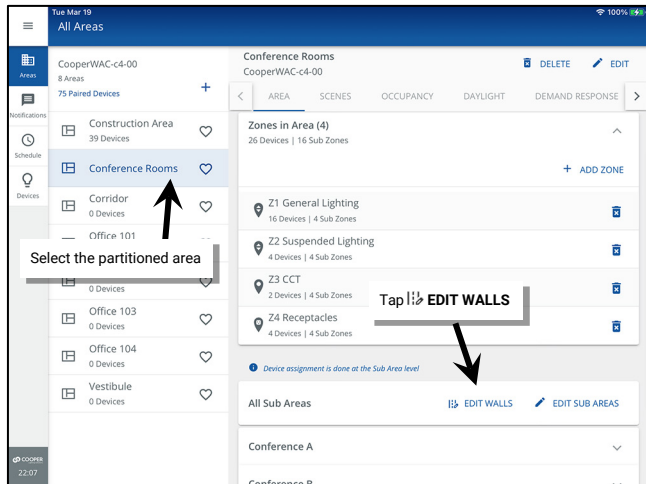
- 3: Select the **sub area** and tap on **DEVICES**. Locate the desired device and tap it to open the device screen.
- 4: Select **EDIT** within the device screen. Tap **DELETE** and then confirm the deletion.



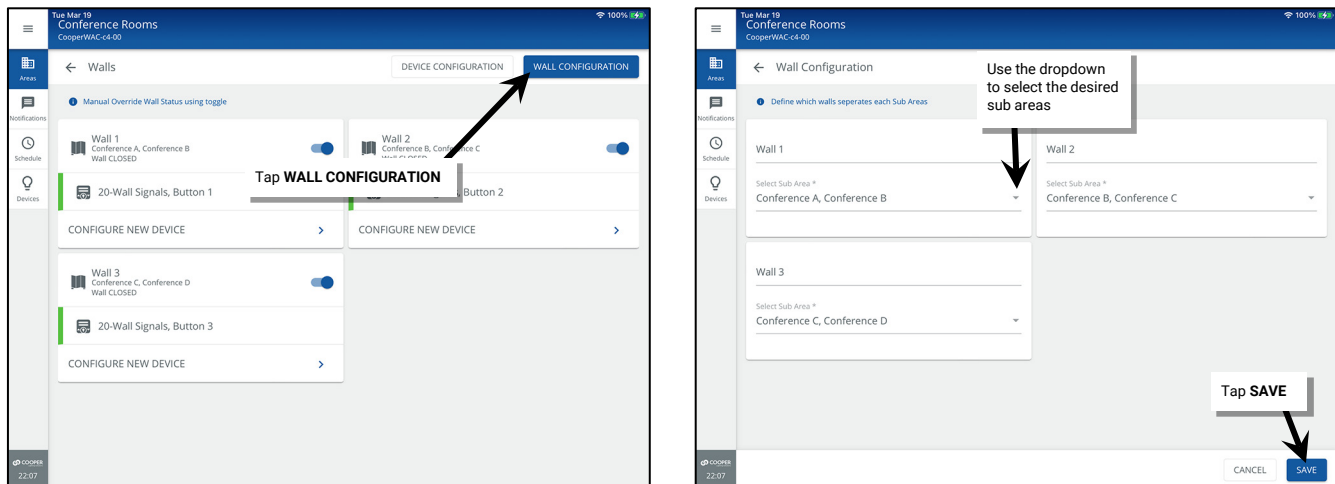
Modifying the Sub Areas that a Partition Wall Joins

To make modifications to the sub areas that a partition wall joins:

- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT WALLS**.



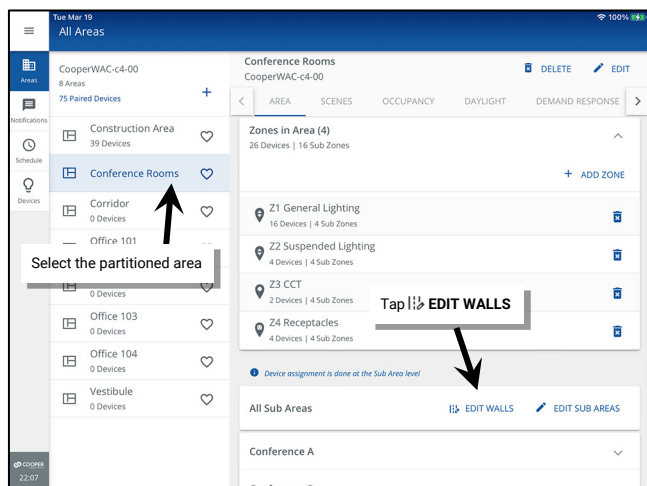
- 3: In the **Walls** screen, tap **WALL CONFIGURATION**.
- 4: Use the **Select Sub Area** dropdown to select the desired sub areas. Repeat for any additional walls and then tap **SAVE**.



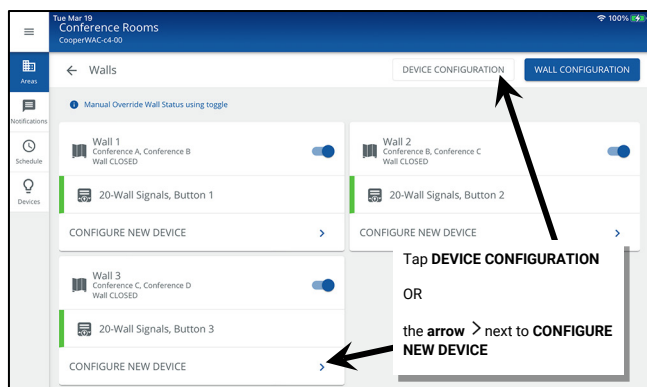
Modifying the Partition Wall Open/Closed Signal Input

To make modifications to the input that issues the wall open/close signal:

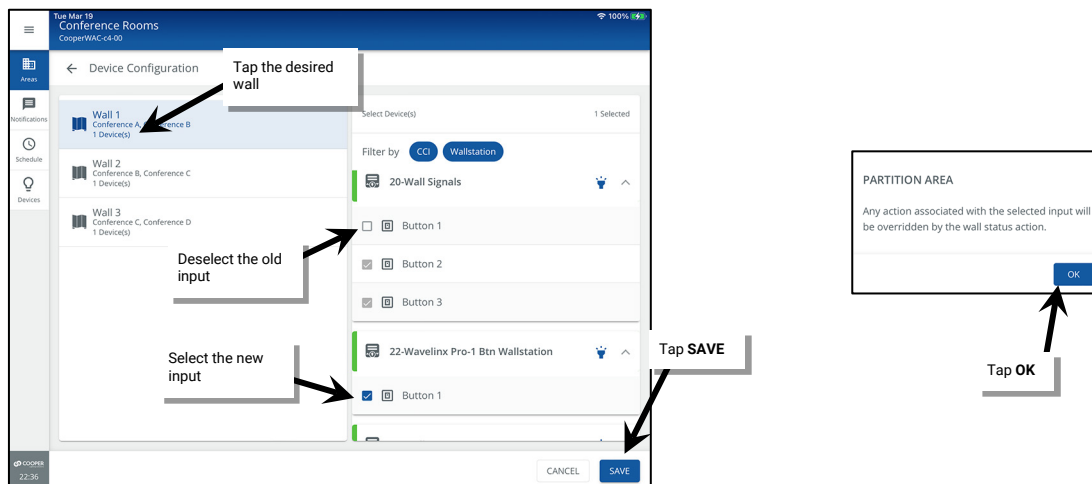
- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 2: In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT WALLS**.



- 3: In the **Walls** screen, tap **DEVICE CONFIGURATION** or the arrow > next to **CONFIGURE NEW DEVICE**.



- 4: Select the desired wall and locate the currently assigned input. Uncheck the input and then check the new input to assign. Repeat for other walls as needed and then tap **SAVE**. Tap **OK** when prompted.



Understanding and Modifying Area Settings

Both standard and partitioned areas have additional area features including:

- Adjustable default fade time
- Manual override timers for areas that do not have occupancy sensors to meet automatic shutoff requirements
- After Hours Occupancy Mode assignment

Adjusting Area Fade Times:

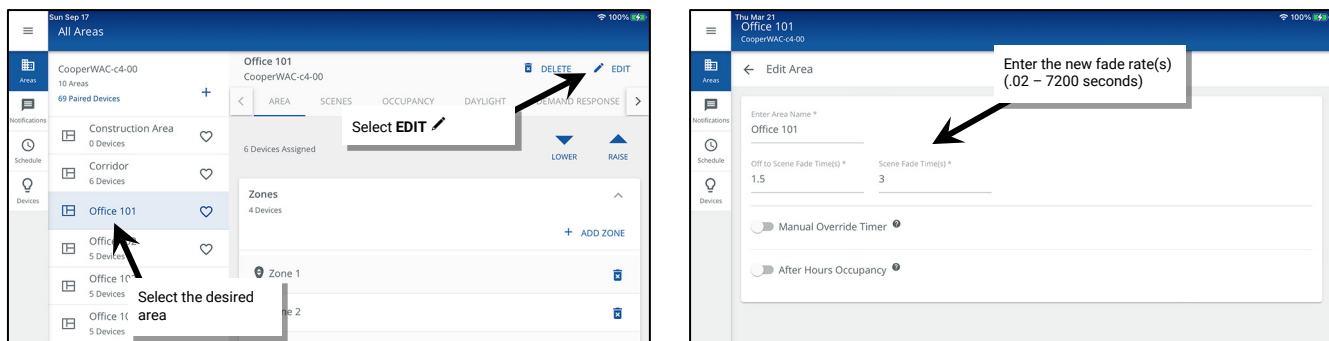
A fade time is the length of time it takes to transition from one light level to another. There are two options at the area level to allow for a quicker transition when the lighting is OFF and a slower transition when lighting is ON.

- **Off to Scene Fade Time(s):** Use the default of 1.5 sec. or enter how quickly lighting should transition from OFF to the selected scene or level. The accepted range is .02 seconds to 7200 seconds (120 minutes)
- **Scene Fade Times:** Use the default of 1.5 sec. or enter how quickly lighting should transition if already ON from scene to scene or level to level. The accepted range is .02 seconds to 7200 seconds (120 minutes).

The area fade time settings create the default fade time for wallstation button actions, occupancy sensor or other input actions, and schedule events. A custom fade time can be assigned to a specific input action if the input needs to have a customized fade time. A change made to the area fade time will affect all inputs that use the area fade time.

To adjust the area fade times:

- 1: Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App²¹⁰, login to the WaveLinx Area Controller as the administrator user.
- 2: Select the area and then tap **EDIT** ✎.
- 3: Enter the new area fade time(s) and then tap **SAVE** (fade time can be .02 – 7200 seconds).



Activating the Manual Override Timer Feature:

If zones in an area are not going to be controlled by occupancy sensors, manual override timers can be used to meet automatic shutoff requirements. If the manual override timer feature is activated, any manual action to the area (wallstation button press, manual command from the WaveLinx Mobile App, WaveLinx WAC Lighting App or WaveLinx CORE system) will begin the duration timer countdown. When the countdown expires, any lighting in zones that are not controlled by occupancy sensors will blink warn (if selected) and then turn OFF.²¹¹

There are two selection options for the manual override timer:

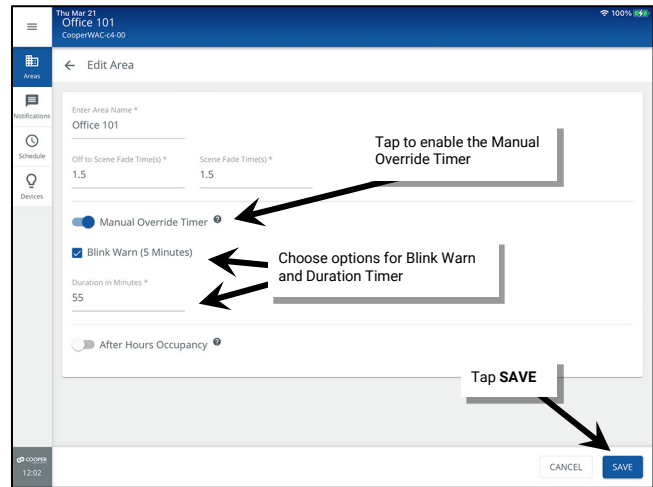
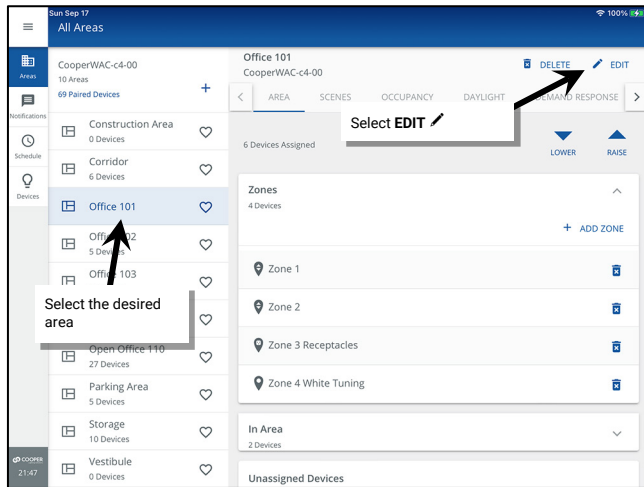
- **Blink Warn:** (Default **Disabled**) If selected, once the duration timer expires, the lighting will blink OFF and then turn ON to the previous light level for an additional 5 minutes and then turn OFF. If not selected, at the end of the duration timer, the lighting will turn OFF.
- **Duration** (Default **55 min.**) Enter a duration time from 1 to 115 minutes. This is the amount of time lighting zones that are not controlled by occupancy sensors will remain ON after a manual action is received.

²¹⁰ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

²¹¹ If another manual action is issued when the duration timer is active or after the blink warn has occurred, the duration timer will restart.

To activate the manual override timer:

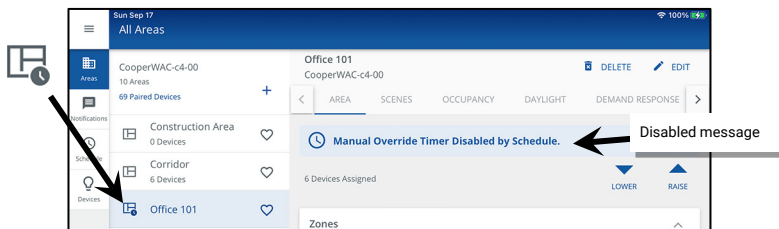
- 1: Using the WaveLinx Mobile App or WaveLinx WAC Lighting App²¹², login to the WaveLinx Area Controller as the administrator user.
- 2: Select the area and then tap **EDIT** ✎.
- 3: Tap the slider to enable the **Manual Override Timer**.
- 4: **Disable** (blank) or **enable** (checkmark) the **Blink Warn** as preferred.
- 5: Enter the desired timer duration (1 to 115 minutes allowed).



Only zones that are not assigned to occupancy sets will respond to the manual override timer. Make sure to remove zones that should respond to the manual override timer from the occupancy set assignment.

Additional Details on Manual Override Timer Operation:

- If the area contains no zones controlled by an occupancy set, the entire area will operate from the manual override timer.
- If the area contains some zones that are controlled by an occupancy set and other zones that are not, only the zones that are not occupancy set control will respond to the manual override timer. The zones that are controlled by the occupancy set will ignore the manual override timer and remain under occupancy set control.
- If another manual action is issued when the duration timer is active or after the blink warn has occurred, the duration timer will restart.
- If lighting is turned OFF manually during the duration timer the lighting will remain OFF and will not blink warn when the timer expires.
- If the WaveLinx Area Controller reboots before a manual override timer has expired, the manual override timer will restart once the WaveLinx Area Controller reboots and the devices reconnect.
- If the WaveLinx Area Controller reboots after a manual override timer has expired, if the load remains connected, the lighting will remain OFF. If the load also has encountered a communications disconnection, the load may turn ON until it connects to the WaveLinx Area Controller after which it will turn OFF.
- The manual override timer can be ignored during specified times of day by using **Enable/Disable Manual Timer** schedule events. If the manual override timer is disabled, the WaveLinx Application will display a clock icon in the area list and a message in the area display. The icon and message will clear once an enable manual override timer event occurs.²¹³



²¹² The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

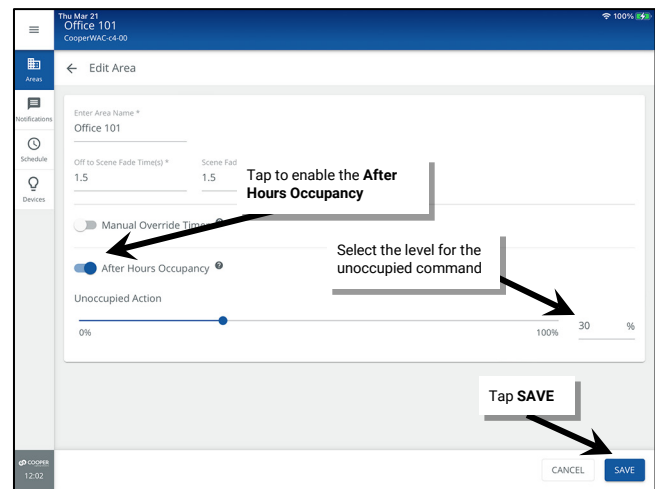
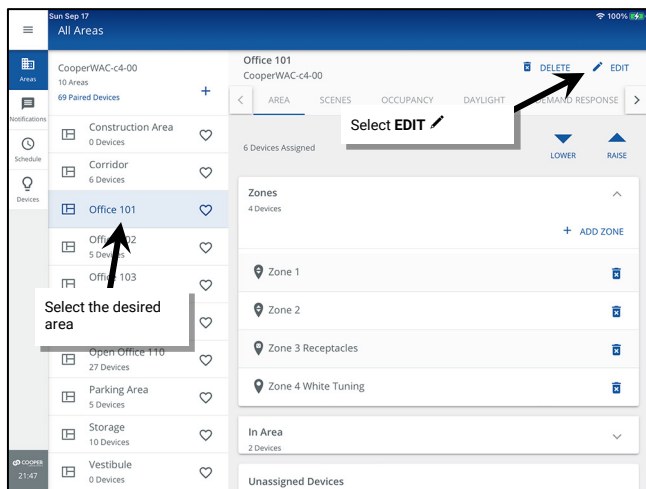
²¹³ The schedule event action **Enable/Disable Manual Timer** is available on WAC2 (Gen 2) minimum software version 12.x.x.x and higher.

After Hours Occupancy Mode

Each area has the capability of being enabled for **After Hours Occupancy Mode**.²¹⁴ This allows the unoccupied command for the occupancy sensor set to issue a different command from what is in the occupancy set programming when After Hours Occupancy Mode is activated. When After Hours Occupancy Mode is deactivated, the unoccupied command will return to what is programmed in the area's occupancy set. After Hours Occupancy Mode is activated and deactivated from a WaveLinx Time Schedule action or from an external time clock closure into a WaveLinx CAT Contact Closure Module. Only areas that are programmed for the After Hours Occupancy Mode will respond.

To enable the area's After Hours Occupancy Mode:

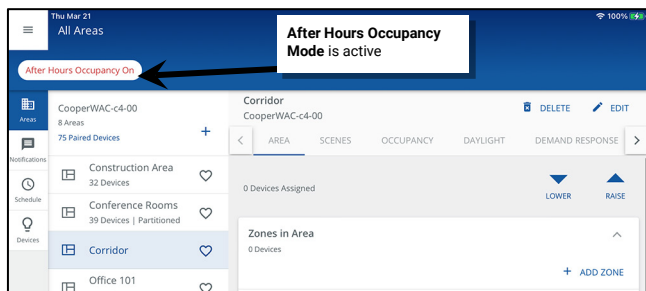
- 1: Using the WaveLinx Mobile App or WaveLinx WAC Lighting App²¹⁵, login to the WaveLinx Area Controller as the administrator user.
- 2: Select the area and then tap **EDIT**.
- 3: Tap the slider to enable **After Hours Occupancy**.
- 4: Use the adjustment slider or percentage entry field to adjust the **Unoccupied Action** level. This is the command level that will be issued when an occupancy set issues an unoccupied command when After Hours Occupancy Mode is enabled. Tap **SAVE**.



For After Hours Occupancy Mode to operate, there must be an After Hours Occupancy action programmed to enable and disable this mode.

- To program a Time Schedule Event to issue the After Hours Occupancy actions, see “Enable/Disable After Hours Occupancy Action” on page 255.
- To program a WaveLinx CAT Contact Closure Module input to issue the command, see “Configuring the Contact Input Actions for a WaveLinx CAT Contact Closure Module” on page 204.

When After Hours Occupancy Mode is activated, an **After Hours Occupancy On** message will be displayed at the top of the WaveLinx App.



²¹⁴ **After Hours Occupancy Mode** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

²¹⁵ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Understanding and Modifying Zone Settings

Zone settings may be modified by changing the default maximum and minimum Kelvin levels for white tuning zones, and by changing the default maximum and minimum light levels (high- and low-end trims) and operational mode default First ON/Last OFF behavior for other zone types. If the area is a partitioned area, sub zones will automatically follow the settings at the main zone level.

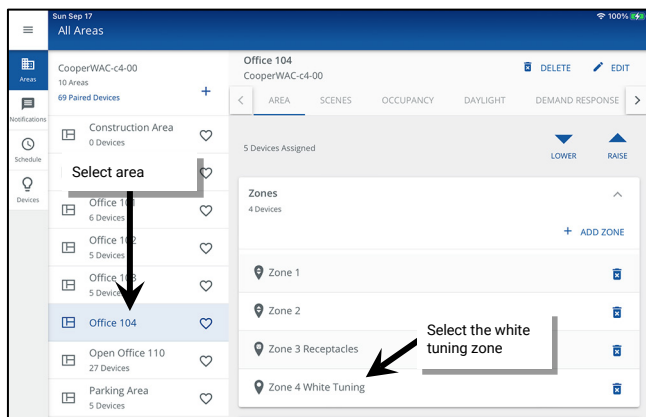
Modifying Minimum and Maximum Kelvin Levels (White Tuning Zones)

A white tuning zone allows adjustment of the minimum and maximum Kelvin levels for the associated devices. In most cases, the range should match the fixture's defined correlated color temperature (CCT) range. Review the fixture details for what color temperature range the fixture(s) supports and set the minimum and maximum levels to match.

In some instances, the minimum and maximum Kelvin levels may be set differently from the published range for the fixture(s). This allows the administrator to limit white tuning operation to the specified range even if the fixture itself supports a wider range. This can be useful if the facility wants to prevent users from adjusting the lighting to very warm or very cool color temperatures for aesthetic reasons. This feature is also helpful if there are devices in the same space that support different color temperature ranges. For instance, if one device supports 2700K-6500K, and another device supports 2700K-5000K, the white tuning zone could be set to a 2700K-5000K range to limit the response to the mutually supported range, preventing them from being adjusted to dissimilar color temperatures.^{216,217}

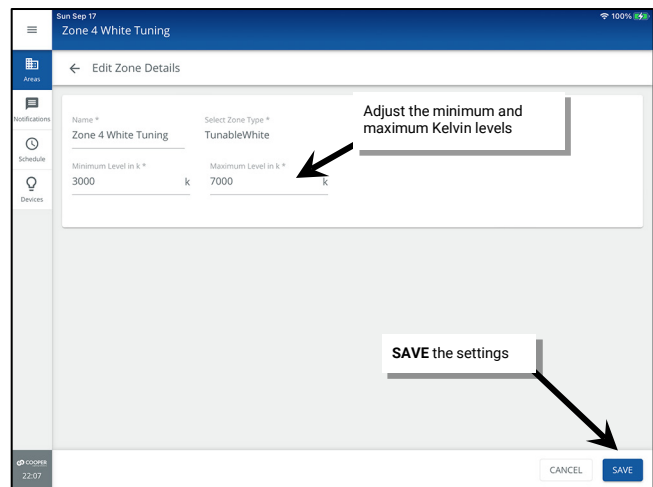
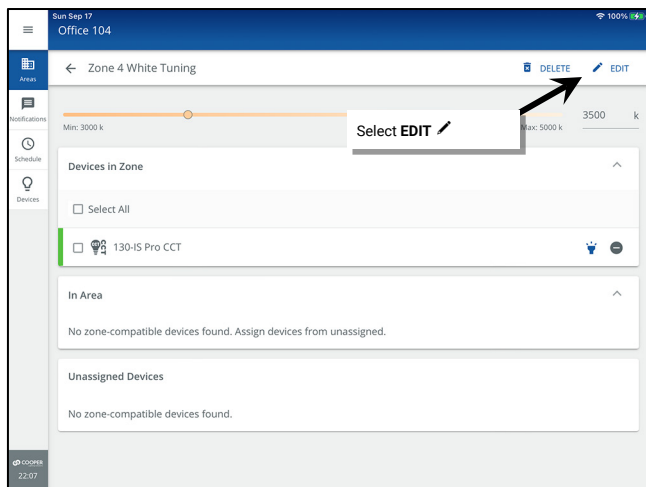
To modify minimum and maximum Kelvin levels for the white tuning zone:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²¹⁸ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified, and then tap on the previously created white tuning zone.



- 3: Tap **EDIT**.

- 4: Enter the new minimum and/or maximum Kelvin levels and then tap **SAVE**.

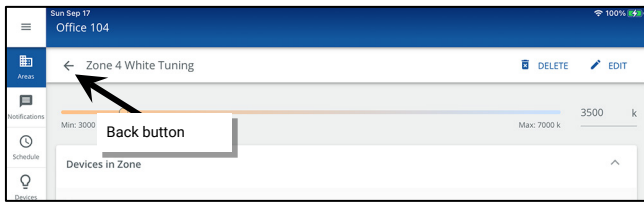


²¹⁶ Fixtures with different supported color temperatures being controlled through switchpacks should be connected to different switchpacks for white tuning control to avoid variances in color temperature.

²¹⁷ Color temperature values shown are approximate. Color temperature may differ dependent on the type of fixture and supported range for the tunable white lighting.

²¹⁸ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

5: Select the back button at the top of the screen to navigate back to the area. Modify additional zones as needed.



Modifying Minimum and Maximum Levels (High- and Low-End Trims)

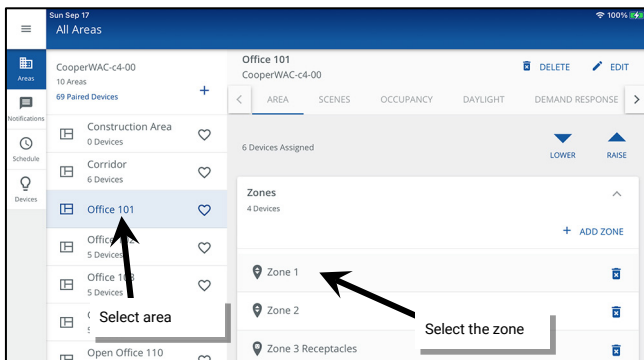
For use with zone types other than white tuning zones,²¹⁹ the WaveLinX App's minimum and maximum level settings combined with the fixture's native driver or ballast range determines the total dimming range of the luminaire from the WaveLinX system. If minimum and maximum levels (trims) are set for a zone, dimming commands to the zone will not be able raise or lower the level beyond the levels defined. This is often referred to as setting minimum and maximum levels or setting a high-end or low-end trim. Commands to the affected zone that are above the maximum level or below the minimum level will result in the zone remaining at or going to the levels defined (Exception: zones will still turn OFF when commanded to 0% regardless of the minimum level).

Typically, trims are used either to save energy or to provide a desired aesthetic. Lowering the maximum level (high-end trim) can result in energy savings. Raising the minimum level (low-end trim), while not typical, can help match dissimilar fixtures to the same cutoff level. For instance, if there is a mixture of fixtures in the same space, some with Integrated Sensors and others that are 0-10V loads controlled with WaveLinX Universal Voltage Dimming Switchpacks, the fixtures may dim to different minimum levels. The driver in the fixtures with Integrated Sensors may support dimming down to a 1% level while the 0-10V load driver may support dimming down to a 5% level. In this instance, the minimum level (low-end trim) for the 1% fixtures can be raised to match the response of the fixtures more closely. To make this adjustment, the integrated fixtures would need to be assigned to a different zone than the 0-10V fixtures.

By default, the WaveLinX system starts with all dimmable zones set to a minimum level of 0% and a maximum level of 90%. These settings may be changed at any time by the administrator user.

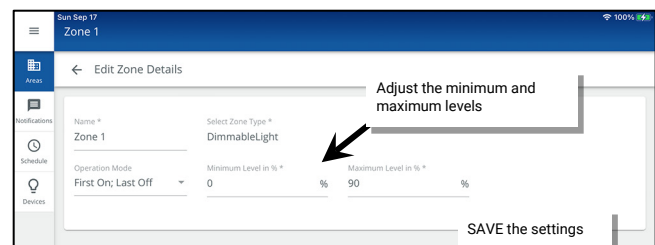
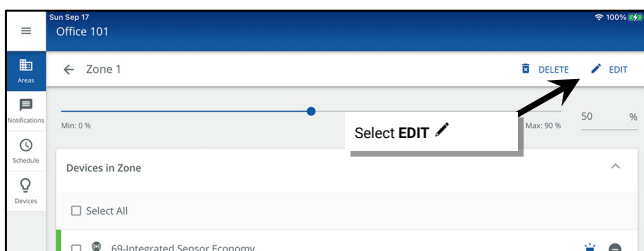
To modify minimum and maximum levels for all fixtures in the zone:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²²⁰ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified, and then tap on the desired zone.



3: Tap **EDIT**.

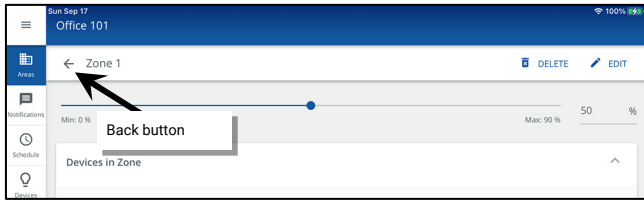
4: Enter the new minimum and/or maximum levels (high- and low-end trims) and then tap **SAVE**.



²¹⁹ It is possible to assign a dimmable fixture to a non-dimmable zone to allow it to act like a switched load. In this instance, a maximum level may be set to set a high-end trim. The dimmable fixture will turn ON to the defined maximum level when commanded to any level of 1% or higher when left in the default First On/Last Off operation mode.

²²⁰ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

5: Select the back button at the top of the screen to navigate back to the area. Modify additional zones as needed.



Modifying Zone Operational Mode

The Zone Operation Mode is used for zone types other than white tuning zones to adjust the switching behavior of a load in response to the dimmer level.

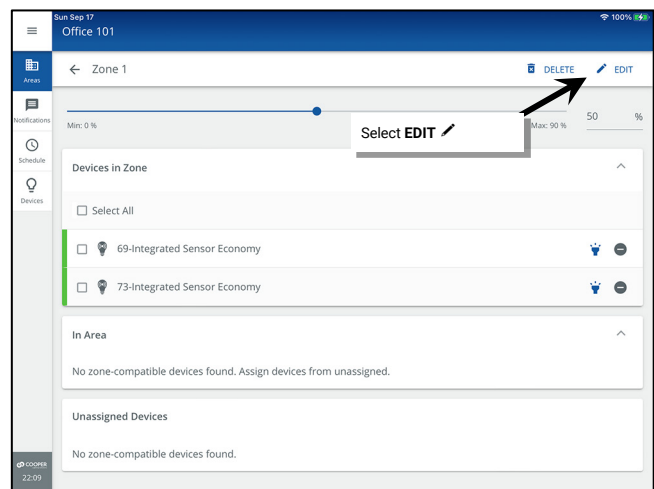
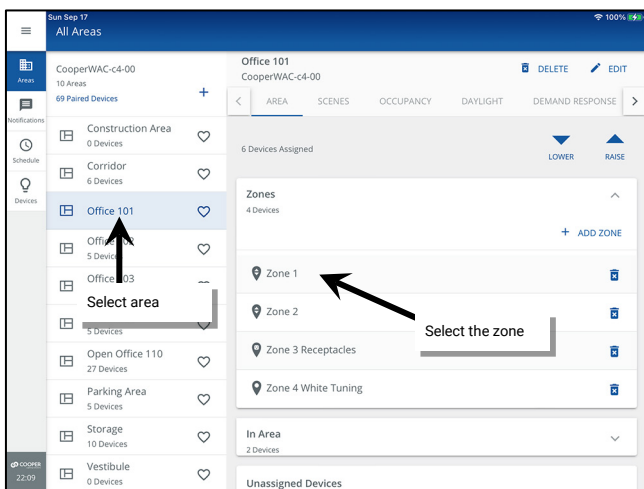
It is rare to adjust the zone operation mode from the First On/Last Off behavior default. One example of when it might be adjusted is in locations where dimming fixtures and non-dimming (switched) loads are in the same space and need to operate together in the same lighting zone. In this circumstance, the operational mode setting determines how the switched and dimmed load should operate in relation to the dimming level.

For instance, if a dimmable zone has both switched loads and dimmable loads assigned, it may be desirable to have the switched load turn OFF when the dimmable loads begin to dim, preventing the switched load from continuing to be ON at full brightness while other loads in the zone are dimming. It may also be desirable to have the switched load turn ON last so that dimmable loads in the zone can fade gradually to the chosen light level before the switched loads turn ON. This requires adjustment of the zone's default operational mode First ON/Last OFF behavior.²²¹

To modify the default operational mode:

Before proceeding, assign the switched load and the dimmable loads to the same dimmable zone.

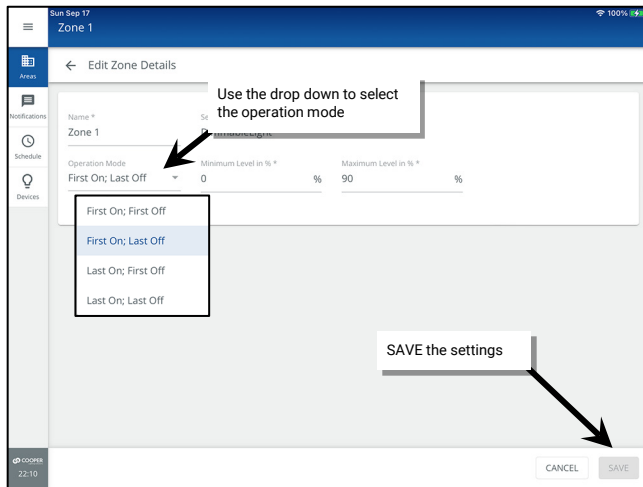
- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²²² and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified, and then tap on the desired zone.
- 3: Tap **EDIT**.



²²¹ Adjustment of the operational mode affects only the switched load assigned to the dimmable zone. The dimmable loads in the zone will not be affected by the change in operation mode.

²²² The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

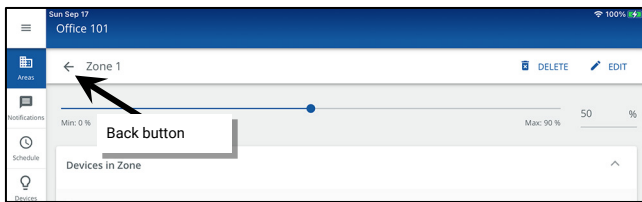
- 4: Select the desired operation mode from the drop down (see the parameter details regarding the available options and resulting behavior) and then tap **SAVE**.



Zone Operational Mode Parameter Details:

- **First On/Last Off:** If the zone is OFF, switched loads in the zone will respond ON when any command level other than 0% is received. If the zone is ON, switched loads within the zone will turn OFF when the zone reaches a 0% (OFF) light level.
- **First On/First Off:** If the zone is OFF, switched loads in the zone will respond ON when any command level other than 0% is received. If the zone is ON, switched loads in the zone will turn OFF when a command lower than the current zone level is received.
- **Last On/First Off:** If the zone is OFF, switched loads in the zone will respond ON when any command at or above the defined maximum level (high-end trim) is received. If the zone is ON, switched loads in the zone will turn OFF when a command lower than the current zone level is received.
- **Last On/Last Off:** If the zone is OFF, switched loads in the zone will respond ON when any command at or above the defined maximum level (high-end trim) is received. If the zone is ON, switched loads in the zone will turn OFF when the zone reaches a 0% (OFF) light level

- 5: Select the back button at the top of the screen to navigate back to the area. Modify additional zones as needed.



Modifying Scene Settings and Response

The WaveLinX system allows for sixteen programmable scenes per standard area and thirty-two programmable scenes per partitioned area. These scenes are labeled scene 0 through scene 15 (standard) or 0 through scene 31 (partitioned). Each scene is pre-programmed for light levels, ON/OFF responses, or white tuning levels to allow for functionality from occupancy sensors and wallstations once devices have been paired in the construction group or assigned to an area. Scenes may also be assigned to schedule events or to contact closure inputs once these items are programmed.

Default Scene Response

Scene	Dimmable Light Zone Response	On/Off Zone Response	Receptacle Response	White Tuning Response
Scene 0	0%	OFF (0%)	OFF	3500K ²²³
Scene 1	100%	ON (100%)	ON	3500K ²²³
Scene 2	70%	ON (100%)	ON	3500K ²²³
Scene 3	50%	ON (100%)	ON	3500K ²²³
Scene 4	30%	ON (100%)	ON	3500K ²²³
Scene 5	10%	ON (100%)	ON	3500K ²²³
Scene 6	1%	ON (100%)	ON	3500K ²²³
Scene 7 through 15	Not programmed ²²⁴	Not programmed ²²⁴	Not programmed ²²⁴	Not programmed ²²⁴
Scene 16 through 31 ²²⁵	Not programmed ²²⁵	Not programmed ²²⁵	Not programmed ²²⁵	Not programmed ²²⁵

²²³ The actual Kelvin temperature assumed by fixture will depend on the fixture's supported Kelvin range. Number provided is for approximate reference.

²²⁴ Scenes 7 through 15 are not programmed and hidden from general users by default. The administrator must activate, and then enable the zones and programming for each zone if the scenes are required for an application.

²²⁵ Scenes 16 through 31 are displayed only in partitioned areas. These scenes are not programmed and hidden from general users by default. The administrator must activate, and then enable the zones and programming for each zone if the scenes are required for an application.

The scene defaults can be modified to respond in a different manner. Be aware that multiple devices in the space may use the same scene number (wallstation buttons, occupancy sensor commands, and schedule events). Modification of the scene levels will result in a changed response for all devices that use that scene.

Hidden scenes will not show for users logged in that are defined as **tenant** users (personal control users) but still may be viewed, issued, and assigned to programming by a user who has administrator access. It may be helpful to rename scenes to allow **tenant** users to identify scene functionality more easily. If WaveLinX Touchscreens are used in the system, hidden scenes will not be displayed. The scene names that appear on the touchscreen will be the names defined for the scenes in the WaveLinX App.

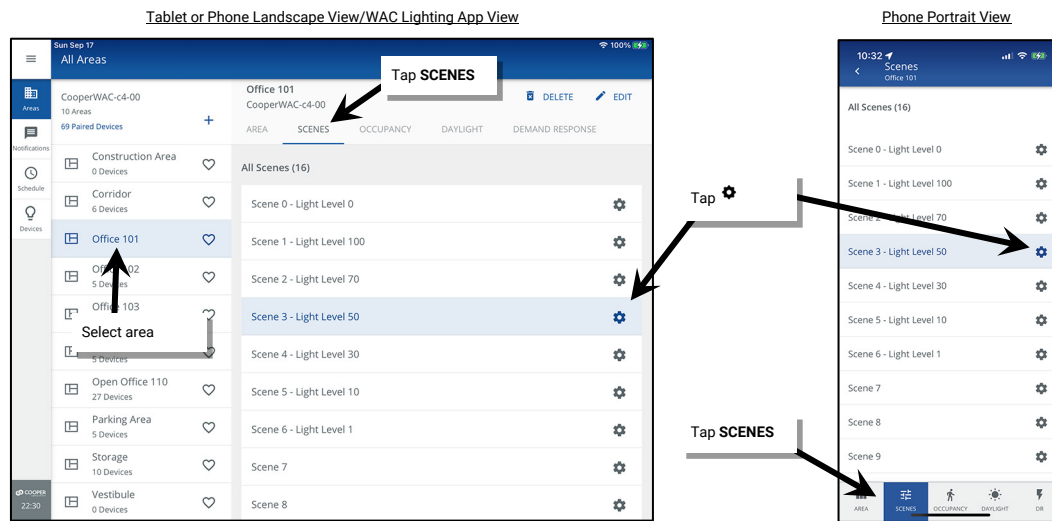
To change the scene settings and response:

1: Using the WaveLinX Mobile App or the WaveLinX WAC Lighting App²²⁶, login to the WaveLinX Area Controller as the administrator user.

2: Select the area and then tap **SCENES**.

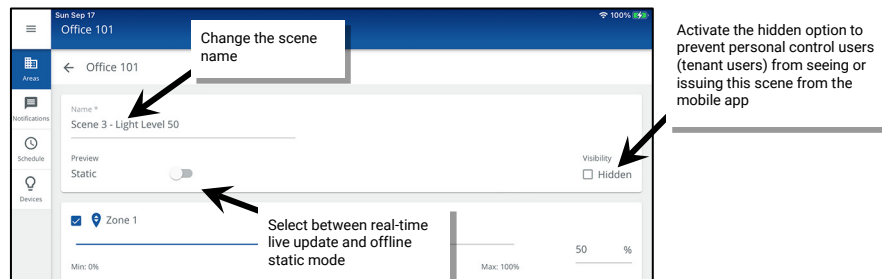
3: Tap **settings** ⚙ in the row of the desired scene.

CAUTION: If the row is tapped in another location other than the **settings** ⚙ icon, the WaveLinX App will issue the scene command.



4: First, set the scene attribute options:

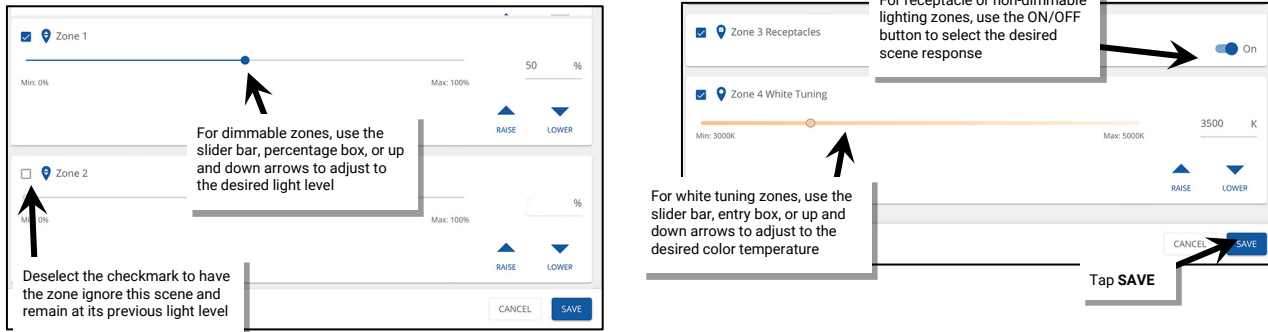
- (Optional) Change the name of the scene. Tap the scene name and enter the desired name. If personal control users or touchscreens are being used to issue the commands, this can be helpful to identify the scene functionality.
- (Optional) Select the option to hide the scene from **tenant** users (personal control users or touchscreens) by selecting the hidden option. Deselect the hidden option to make the scene visible to all user accounts.
- (Optional) Select whether to adjust **live** to see changes in real-time or **static** if light levels should not change during the modification. This option is temporary during the scene's adjustment and is not stored as part of the scene.



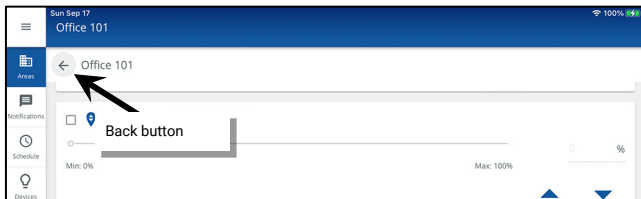
²²⁶ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

5: Next, assign the desired operation for each zone (see details below) and then tap **SAVE**.

- Ensure that zones that should operate in the scene are checked. If a zone should not operate in the selected scene, uncheck the zone to ignore it. The ignored zone will stay at its previous light level when this scene is triggered. While the scene is active any zone command to **AFFECTED** zones will be ignored by the unchecked zones.
- Use the adjustment tools within each zone to modify the scene response. Once complete, tap **SAVE**. A confirmation message will briefly be displayed.
 - Adjust the percentage for dimmable zones
 - Select ON or OFF for non-dimmable or receptacle zones
 - Adjust the color temperature for tunable white zones.



6: Select the back button at the top of the screen to navigate back to the scene list or area. Modify additional scenes as needed.



Modifying Wallstation Button Response

Once assigned to their controlled area, WaveLinx Wallstations operate with default functionality. See the device reference sheets for details on default operation.

- "WaveLinx PRO W-Series Wallstation Reference Sheet" on page 65
- "WaveLinx PRO WW-Series Wallstation Reference Sheet" on page 67
- "WaveLinx PRO WB-Series Battery Powered Wallstation Reference Sheet" on page 69
- "WaveLinx PRO WWB-Series Battery Powered Wallstation Reference Sheet" on page 71
- "WaveLinx CAT WST-C Series Wallstation" on page 80.

This section discusses how to customize the wallstation button operation and how to copy programming from one wallstation to another.

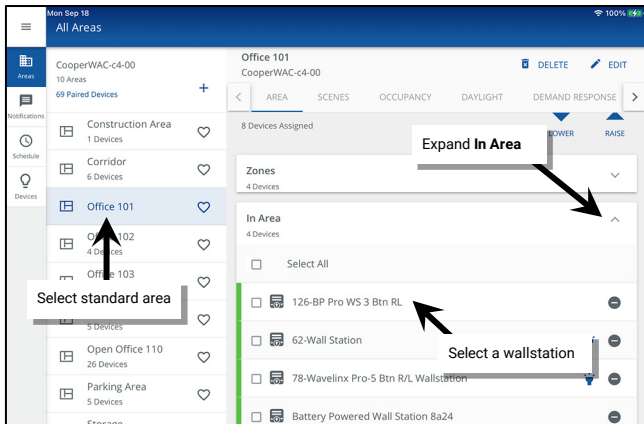
Changing Default Button Response

Each wallstation button's default response may be modified to customize operation. To change the response of a wallstation button:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²²⁷ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified and locate and select the device.

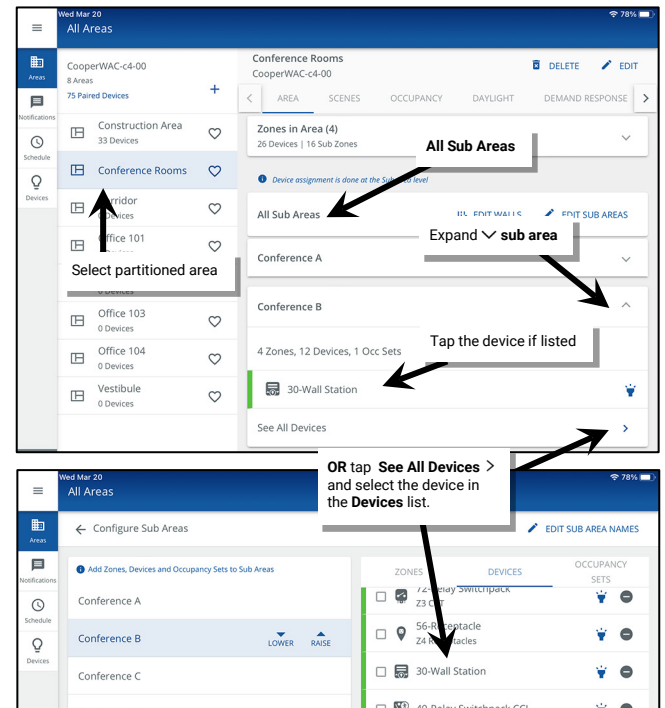
Accessing the Wallstation in a Standard Area

Expand ▾ the **Devices in Area** section and tap the device.

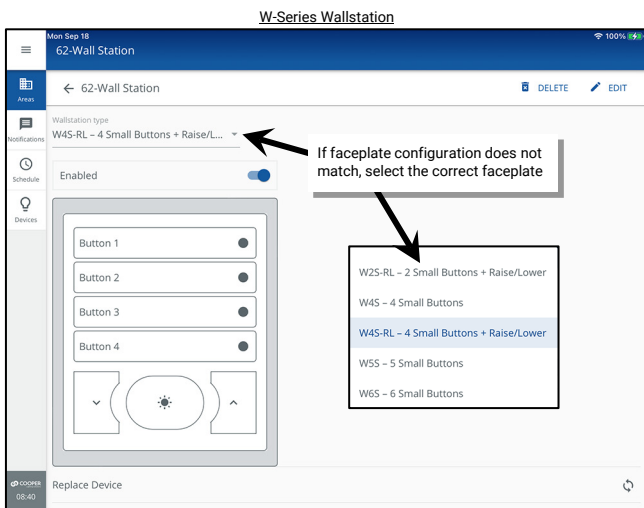


Accessing the Wallstation in a Partitioned Area

Scroll down to view **All Sub Areas**. Tap **expand** ▾ to open the **sub area**. Tap the device if it is displayed there or tap **See All Devices** and in the **Devices** list, tap the device.

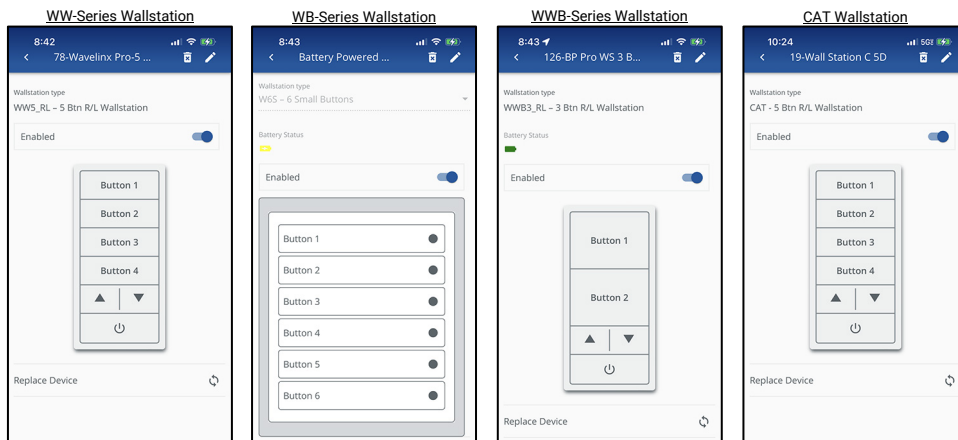


- 3: **For WaveLinX PRO W-Series Wallstations only:** Make sure that the faceplate configuration on the screen matches the installed wallstation. If necessary, select the correct configuration from the drop-down.



²²⁷ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

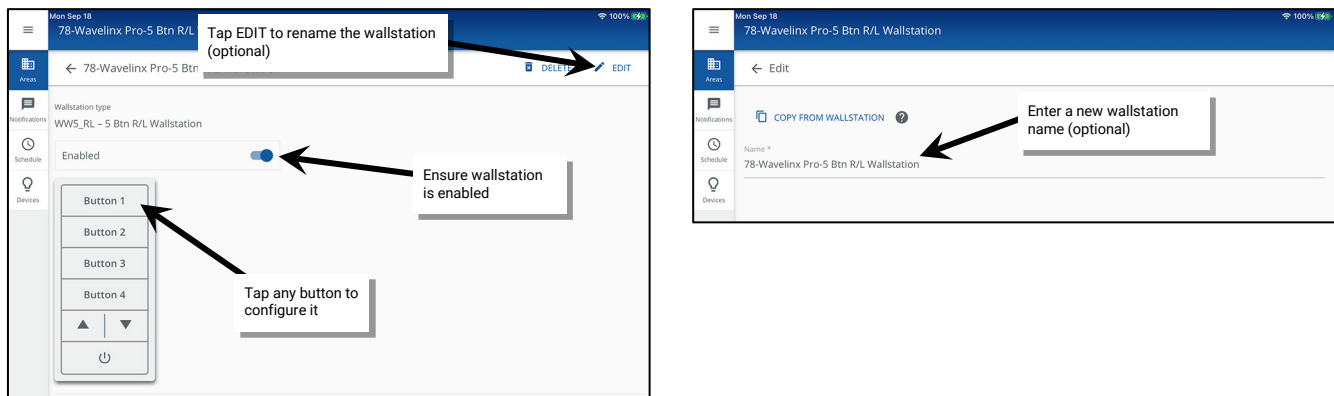
Other wallstation types will automatically show the correct configuration and will not have the drop down.²²⁸



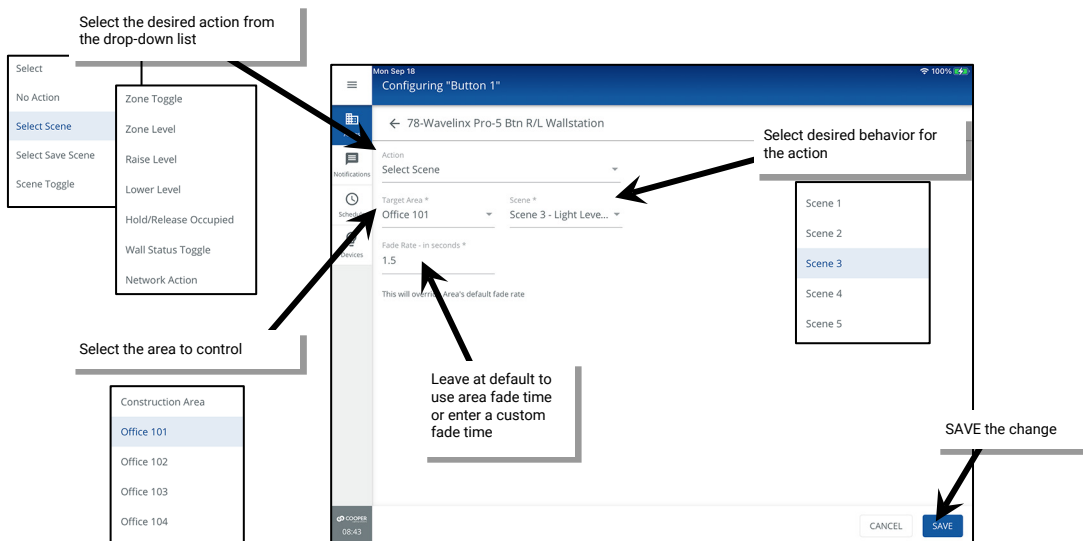
5: (Optional), Tap **EDIT** and rename the wallstation.

6. Make certain that the wallstation is **enabled**.

7: Tap on one of the pictured wallstation buttons to modify it.



8: Select the desired **action** for the button (see descriptions below) and then choose the **target area** that the action affects. Other parameter selections will be based on the chosen action. Select the appropriate behavior, and then touch the **SAVE** button.



²²⁸ Battery powered wallstations will also show the current battery status: green icon = battery good, yellow icon = battery medium, red icon = battery low.

Wallstation Parameter Definitions:

- **No action:** The button will not perform any command if pressed.
- **Select scene:** The button will issue the selected scene to the selected area using either the default area fade rate, or a uniquely defined fade rate.
- **Push to save scene:** If pressed and released (less than 5 second press), the button will issue the designated scene command. If the button is held down for at least 5 seconds, the system will save the current light levels and color temperature levels to the designated scene. This allows users to adjust the levels, and then save the modified levels for future recall. The 5 second time displayed is hard coded and cannot be changed.
- **Scene toggle:** The button will alternate between the two selected scenes for the selected area. If the dominant scene is not the current active scene in the space, the initial button press will issue the dominant scene on the first button press. Use either the default area fade rate or a uniquely defined fade rate.
- **Zone toggle:** The button will command the selected zone in the selected area, alternating between the two defined levels. The initial button press will issue the dominant level. Use either the default area fade rate or a uniquely defined fade rate. Selections for zones include the ability of choosing an individual zone, **ALL** zones in the area, or **AFFECTED** zones. If the **AFFECTED** zones option is used, zones that have been ignored from the active scene will not respond to the command.²²⁹
- **Zone level:** The button will operate the selected zone in the selected area to the defined level. Use either the default area fade rate or a uniquely defined fade rate. Selections for zones include the ability of choosing an individual zone, **ALL** zones in the area, or **AFFECTED** zones. If the **AFFECTED** zones option is used, zones that have been ignored from the active scene will not respond to the command.²²⁹
- **Raise level:** The button will gradually raise the light level in the selected zone in the selected area. If assigned to a white tuning zone, the button will gradually shift the color temperature to a cooler white tone. Selections for zones include the ability of choosing an individual zone, **ALL** zones in the area, or **AFFECTED** zones. If the **AFFECTED** zones option is used, zones that have been ignored from the active scene will not respond to the command.²²⁹
- **Lower level:** The button will gradually lower the light level in the selected zone in the selected area. If assigned to a white tuning zone, the button will gradually shift the color temperature to a warmer white tone. Selections for zones include the ability of choosing an individual zone, **ALL** zones in the area, or **AFFECTED** zones. If the **AFFECTED** zones option is used, zones that have been ignored from the active scene will not respond to the command.²²⁹
- **Hold/Release Occupied:** The initial button press will lock out occupancy sensor commands in the selected area for a period of 60 minutes. If desired, the button can be pressed before the timer expires to return the system to normal function. The 60-minute time displayed is hard coded and cannot be changed.
- **Wall Status Toggle:** The button will alternate commands with each button press to issue an OPEN or CLOSE signal to the WaveLinX system for selected partition wall. This signal allows the WaveLinX Area Controller to join sub areas for control when the wall between them is open or to separate control when the wall is closed. The target area selection will only display partitioned areas. The wall selection will display the walls that are defined in the selected partitioned area.²³⁰
- **Network Action:** When used as part of the WaveLinX CORE system, this indicates that the button has been configured for a special function through WaveLinX CORE, typically for shade control. Please modify the button action through WaveLinX CORE.^{231, 232}

9: Repeat for additional buttons on the selected wallstation or for additional wallstations that need adjustment or use the copy function described in the next section if all button programming and configuration matches between wallstations.

Quick Links for Common Questions

- My wallstation or occupancy sensor only works at night. Why is this occurring? See the answer on page 364.

Enabling/Disabling Wallstations

Use the WaveLinX Applications to manually disable/enable wallstations or schedule an **Enable/Disable Wallstations** event using the WaveLinX Scheduling feature. Wallstations that are disabled will not issue commands when the buttons are pressed. When a button is pressed, the LED indicator either on the button or at the top of the wallstation will flash white for 1 sec. / OFF for 1 sec. and repeat for 10 seconds.²³³

Once enabled, the buttons will issue the programmed commands and the LED(s) will return to normal behavior.

²²⁹ White tuning zones are automatically exempted from control if the **ALL** or **AFFECTED** zone is selected to prevent inadvertent color temperature shifts when adjusting light levels. The white tuning zone will only respond to this command if it is the only zone selected.

²³⁰ **Wall Status Toggle** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

²³¹ **Network Action** will only show in WAC2 (Gen 2) version 10.0.x.x firmware and higher. WAC must be a configured part of a WaveLinX CORE platform to perform supported network actions.

²³² When programmed for a **Network Action**, if the wallstation is equipped with button LEDs, the LED on the assigned button will not change/indicate an issued command.

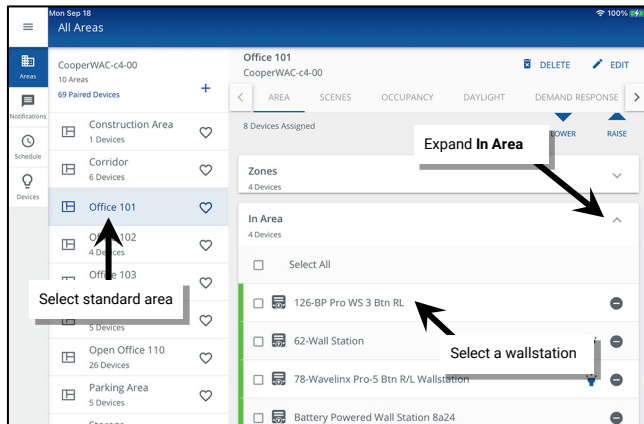
²³³ The WaveLinX WB-Series Battery Powered Wallstation models WB2L, WB3L, WB5 and WB6, will not display the described LED behavior.

To manually enable/disable wallstations:

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²³⁴ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified and locate and select the device.

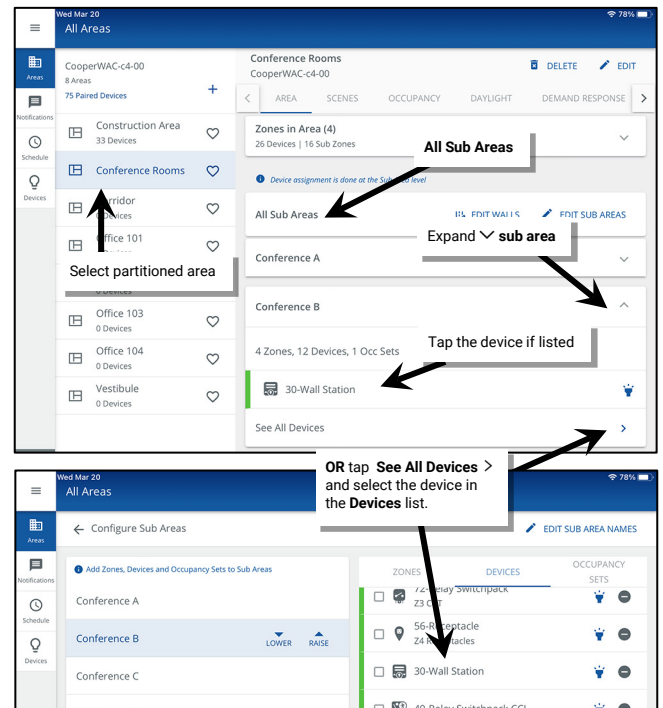
Accessing the Wallstation in a Standard Area

Expand **▼** the **Devices in Area** section and tap the device.

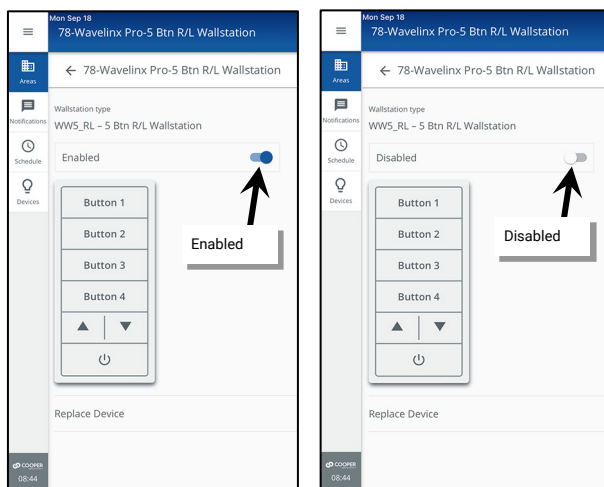


Accessing the Wallstation in a Partitioned Area

Scroll down to view **All Sub Areas**. Tap **expand ▼** to open the **sub area**. Tap the device if it is displayed there or tap **See All Devices** and in the **Devices** list, tap the device.



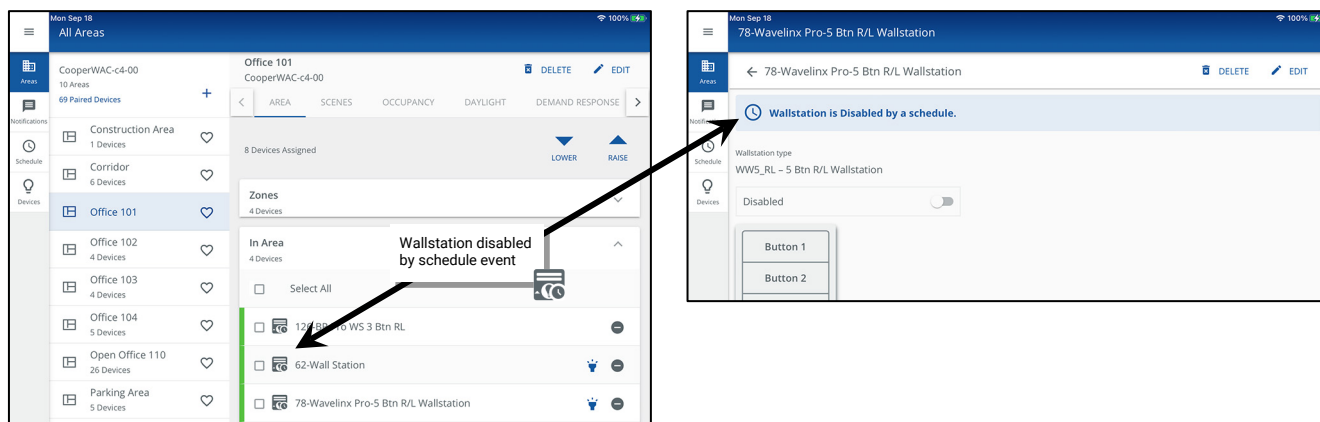
- 3: Tap the enable/disable slider to select the desired enabled or disabled behavior.



²³⁴ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

To use a schedule event to disable/enable wallstations, see “Enable/Disable Wallstation Action” on page 256.

If a schedule event is currently disabling a wallstation, the WaveLinx Application will display a clock icon in the wallstation **In Area** section of a standard area or in the **Devices** list in the **Configure Sub Area** screen in a partitioned area. A message will also appear in the wallstation display. The icon and message will clear once an enable manual override timer event occurs or if the wallstation is manually enabled.²³⁵



Copying Wallstation Programming to Other Wallstations

In many applications, wallstations within the same room may perform the same functions or wallstations in other areas may have the same behavior except for the area being controlled. The WaveLinx App makes it easy to copy wallstation programming to other wallstations.

To copy wallstation programming:

- The wallstations must be the same type and have the same faceplate configuration, i.e., if the original wallstation is a WaveLinx W-Series 4 small button with raise/lower, then the destination wallstation must be a WaveLinx W-Series 4 small button with raise/lower.
- The quantity and types of zones should match between areas.

Copied settings include the button actions and all defined parameters except the target area. During the copy process, the target area will automatically update to the area assigned to the new wallstation.

Before proceeding, make sure that the initial wallstation is programmed with all the desired settings and make note of the wallstation's name.

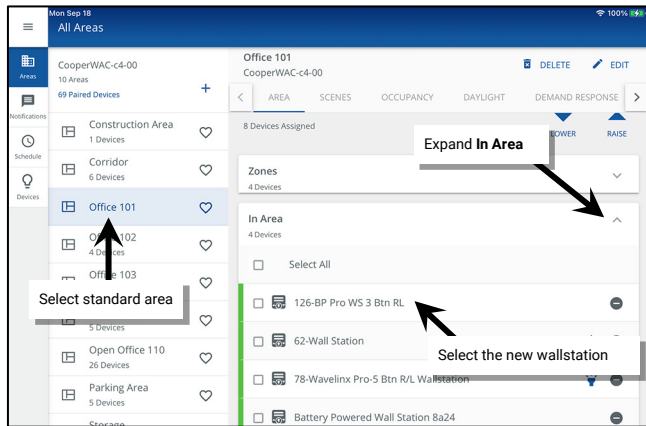
²³⁵ The schedule event action **Enable/Disable Manual Timer** is available on WAC2 (Gen 2) minimum software version 12.x.x.x and higher.

To copy the wallstation's programming to another wallstation:

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²³⁶ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the wallstation that has not been programmed yet. Locate and select the device.

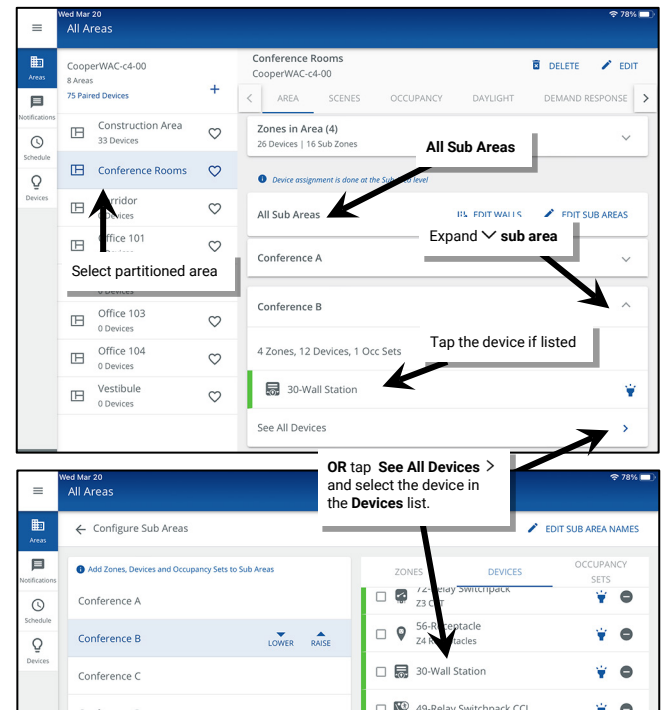
Accessing the Wallstation in a Standard Area

Expand ▾ the **Devices in Area** section and tap the device.

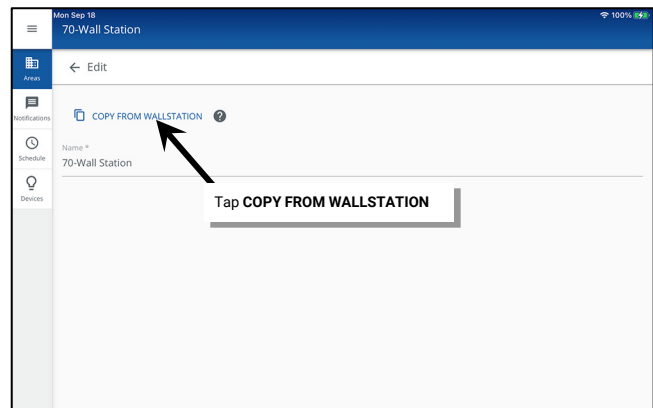
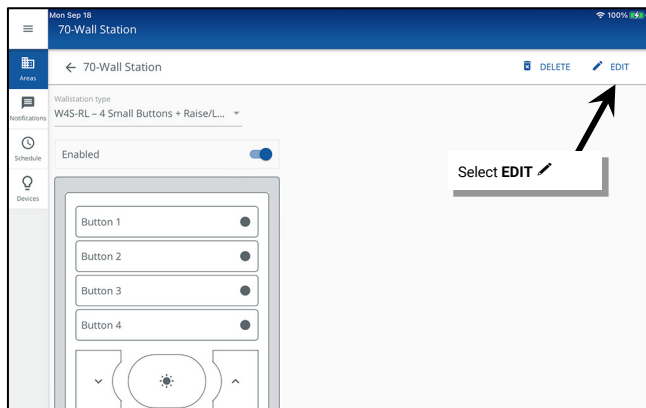


Accessing the Wallstation in a Partitioned Area

Scroll down to view **All Sub Areas**. Tap **expand** ▾ to open the **sub area**. Tap the device if it is displayed there or tap **See All Devices** and in the **Devices** list, tap the device.

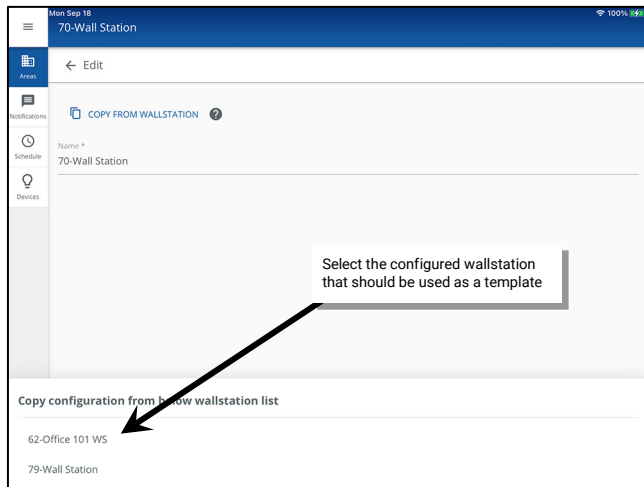


- 3: Tap **EDIT** ✎ and then select **COPY FROM WALLSTATION**.

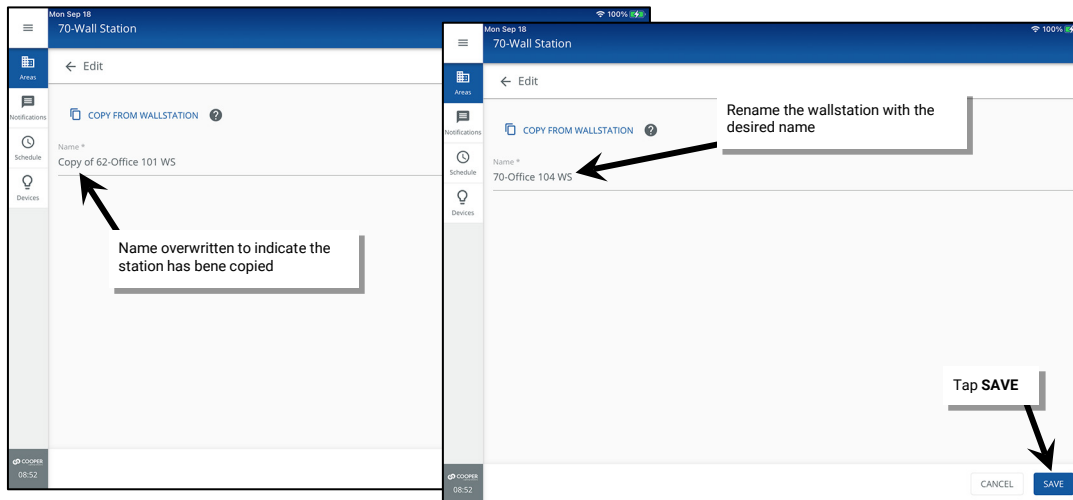


²³⁶ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

4: Select the wallstation that has been programmed with the desired settings. The wallstation settings will be copied.



5: During the copy, the existing wallstation name will be overwritten with the copied wallstation name. Edit the name and then tap **SAVE**.



6: Repeat for additional areas or wallstations as needed.

Modifying Contact Closure Input Response

The WaveLinx PRO Universal Voltage Dimming Switchpack (model WSP-CA-010) and the WaveLinx CAT Contact Closure Input Module support the connection to an external maintained contact closure. The WaveLinx CAT Contact Closure Input Module is supported in WAC Gen 2 Version 14.x.x.x and higher.

- The WSP-CA-010 model of the WaveLinx Universal Voltage Dimming Switchpack supports connection to an external maintained contact closure. The contact closure input allows for:
 - Connection to supported Greengate occupancy sensors.
 - Connection from an external system or device that can provide a dry (no voltage) maintained closure from a contact with a contact resistance of less than 1K Ohm.

When used with a Greengate occupancy sensor, the occupancy sensor will respond as part of the area's occupancy set. For details on adjusting the occupancy set programming, see "Modifying Occupancy Sensor Response" on page 206.

- The WaveLinx CAT Contact Closure Input Module supports connection of up to four external maintained contact closure devices.

When used with a contact closure, the contact closure input(s) needs to have an action associated with the contact **Open** and the contact **Close**. This section discusses how to configure the actions for these device types.

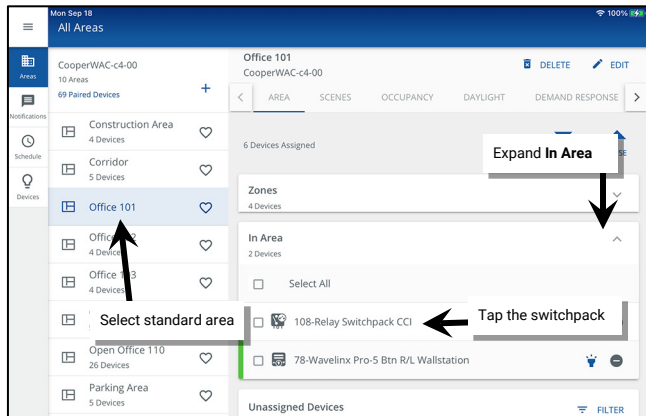
Configuring the Contact Input Actions for a WaveLinx Universal Voltage Dimming Switchpack (model WSP-CA-010)

Before proceeding with the following steps, make certain that the contact closure input has been identified, assigned to the area, and set for the contact closure input type. Refer to the instructions in “Step 2: Identify and Assign Devices to the Areas and Zones” on page 146 and “Step 6: Configure Contact Closure Devices Connected to WaveLinx Universal Voltage Dimming Switchpacks” on page 156.

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²³⁷ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified and locate and select the device.

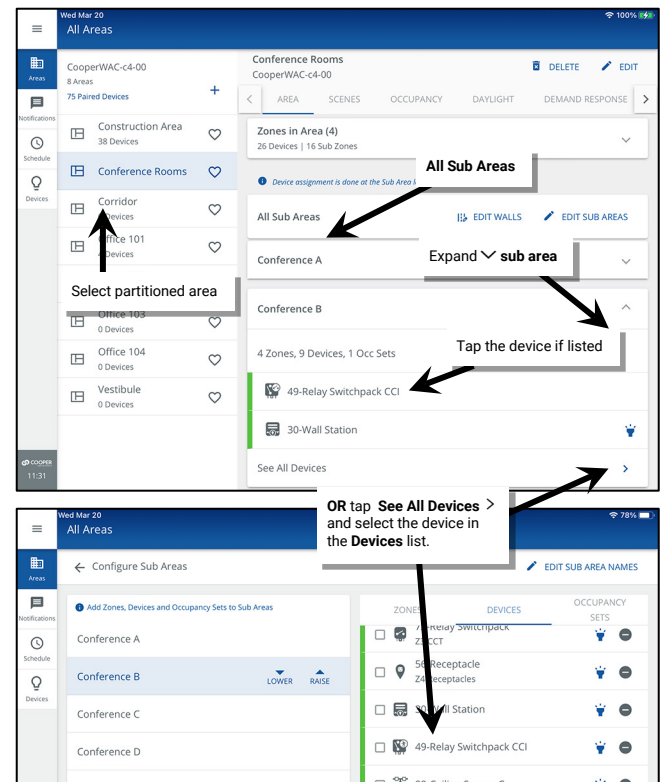
Accessing the Switchpack CCI in a Standard Area

Expand **▼** the **Devices in Area** section and tap the device.

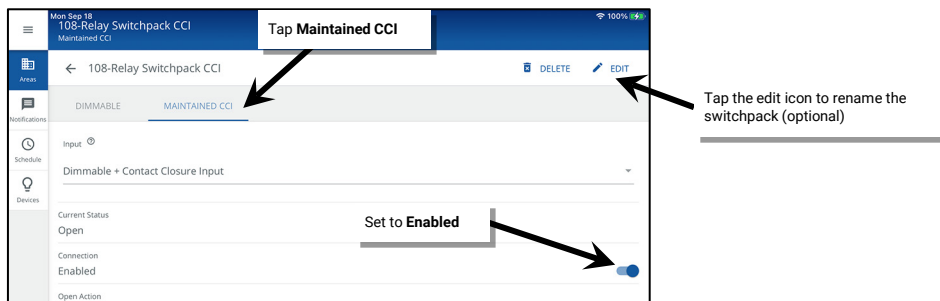


Accessing the Switchpack CCI in a Partitioned Area

Scroll down to view **All Sub Areas**. Tap **expand ▼** to open the **sub area**. Tap the device if it is displayed there or tap **See All Devices** and in the **Devices** list, tap the device.



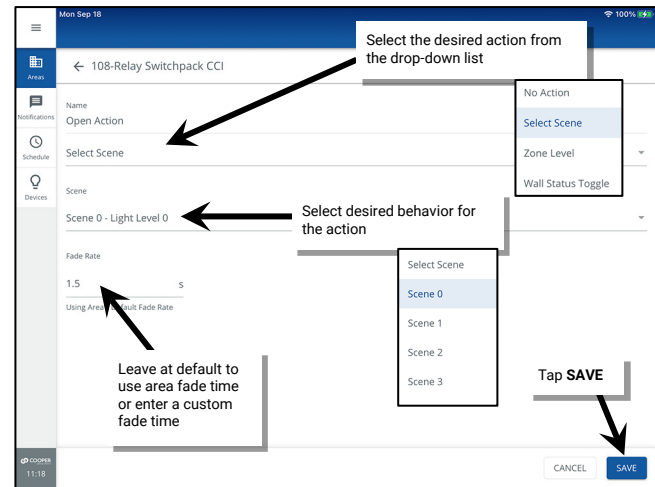
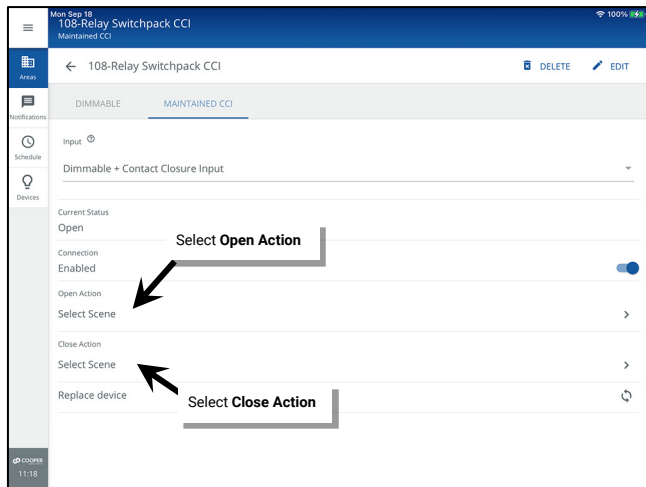
- 4: Select the **Maintained CCI** tab and verify that the **Connection** field is set to **Enabled**.²³⁸
- 5: (Optional), Tap **EDIT** and rename the switchpack. This will rename it for both the contact input and dimmable output.



²³⁷ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

²³⁸ If the **Maintained CCI** tab is not displayed, make sure that the optional input is set for either the **Dimmable + Contact Closure Input** or **Contact Closure Input** type.

6: Next, tap on the **Open action**. Set the desired command and parameters and then tap **SAVE**. Repeat to set the **Close action** (The close action will be grayed out if the Open Action is set for a Wall Status Toggle command).



Open and Closed Action Parameter Definitions:

- **No action:** The input will not perform any command if opened or closed.
- **Select scene:** The input will issue the selected scene the device's area using either the default area fade rate, or a uniquely defined fade rate.
- **Zone level:** The input will operate the selected zone in the device's area to the defined level. Use either the default area fade rate or a uniquely defined fade rate. Selections for zones include the ability of choosing an individual zone, **ALL** zones in the area, or **AFFECTED** zones. If the **AFFECTED** zones option is used, zones that have been ignored from the active scene will not respond to the command.²³⁹
- **Wall Status Toggle**²⁴⁰: The connected device will issue commands to issue an OPEN or CLOSE signal to the WaveLinx system for selected partition wall. When the maintained contact is OPEN the signal will indicate an open partition wall. When the maintained contact is CLOSED, the signal will indicate a closed partition wall. The target area selection will only display partitioned areas. The wall selection will display the walls that are defined in the selected partitioned area. Assign the **Wall Status Toggle** to the **Open Action**. The **Close Action** will be grayed out and left at No Action.

Quick Links for Common Questions

- I am using the WaveLinx Universal Voltage Dimming Switchpack's contact closure input. My dimming switchpack does not have the **Optional Input** or **Maintained CCI** tab and I do not see the option to set the input type. Why is this happening? See the answer on page 364.

²³⁹ White tuning zones are automatically exempted from control if the **ALL** or **AFFECTED** zone is selected to prevent inadvertent color temperature shifts when adjusting light levels. The white tuning zone will only respond to this command if it is the only zone selected.

²⁴⁰ **Wall Status Toggle** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

Configuring the Contact Input Actions for a WaveLinX CAT Contact Closure Module

The WaveLinX CAT Contact Closure Input Module supports connection of up to four external contact closure devices. A maintained contact closure is recommended. All functions are supported when a maintained contact closure is used. Momentary contact closures may be used for limited functions such as scene and zone commands. The WaveLinX CAT Contact Closure Input Module is supported in WAC Gen 2 Version 14.x.x.x and higher.

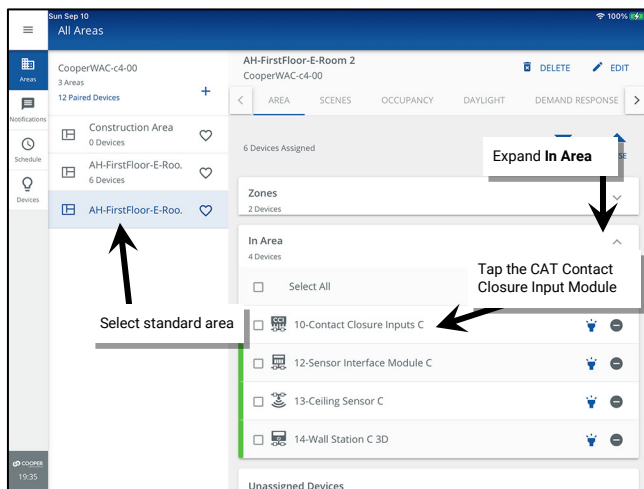
Distributed Mode default configuration for the WaveLinX CAT Contact Closure Module will be overwritten by the Networked Mode programmed settings made in the WaveLinX Mobile App.

Before proceeding with the following steps, make certain that the WaveLinX CAT Area Hub has been discovered and the connected devices added to the WaveLinX Area Controller. "Discover the WaveLinX CAT Area Hub and Add CAT Devices" on page 125. Determine which created area is the correct area for the Area Hub port that the WaveLinX CAT Contact Closure Input Module is connected to.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁴¹ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area to be modified and locate and select the device.

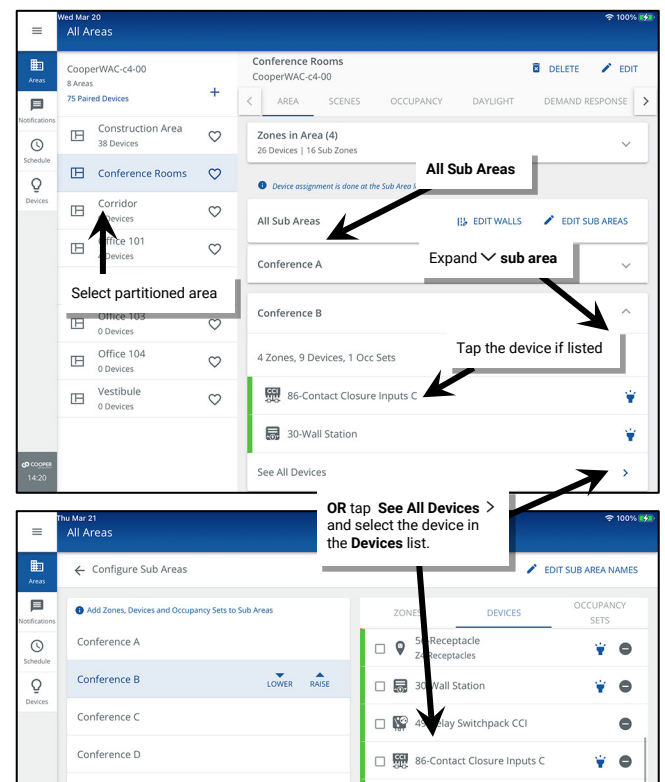
Accessing the WaveLinX CAT Contact Closure Module in a Standard Area

Expand **▼** the **Devices in Area** section and tap the device.



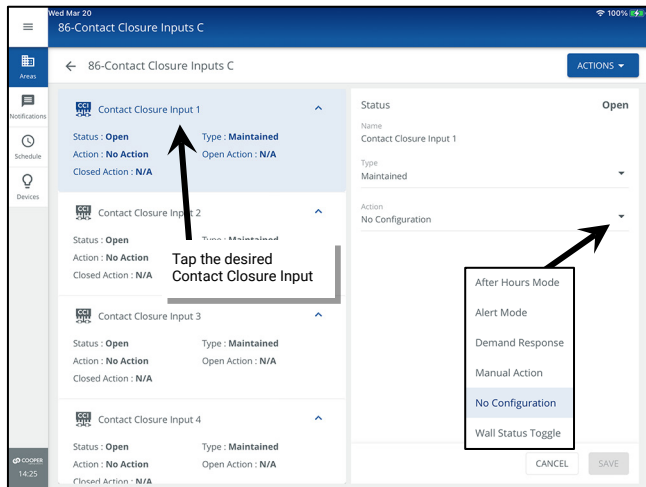
Accessing the WaveLinX CAT Contact Closure Module in a Partitioned Area

Scroll down to view **All Sub Areas**. Tap **expand ▼** to open the **sub area**. Tap the device if it is displayed there or tap **See All Devices** and in the **Devices** list, tap the device.



²⁴¹ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

- 3: Tap the desired Contact Closure Input (1-4), select the connected input **type** (**Maintained** or **Momentary**) and then tap the **Action** dropdown and select the desired **Action Type**. Note that momentary input types can only have manual action types associated.



No Configuration: The input will not perform any command if opened or closed.

After Hours Mode:²⁴² The input will issue an After Hours Mode command to the WaveLinx Area Controller. Areas that are programmed for After Hours Occupancy Mode will adjust occupancy set unoccupied commands to the programmed level until After Hours Mode is deactivated.

Alert Mode: The input will activate Alert Mode for all devices paired/added to this WaveLinx Area Controller. Alert Mode is a high priority command. During Alert Mode, all lighting devices will turn on to 100% and all commands will be ignored. Once the input is deactivated, lighting will return to normal operation after a 5 minute delay with a blink warn when the delay begins and then 1 minute before returning to normal mode.

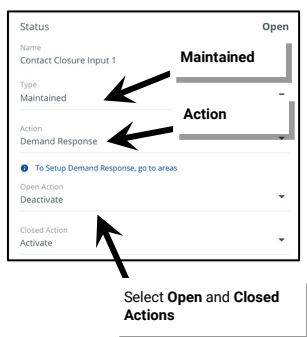
Demand Response: The input will activate the programmed Demand Response dimming response for all lighting devices paired/added to this WaveLinx Area Controller to reduce energy consumption. Once the input is deactivated, the lighting will return to normal operation.

Manual Action: Select whether the input activates **Scene** or **Zone Level** commands to the chosen area. If the device type is Momentary, the option for **Scene Toggle** and **Zone Toggle** will also be available.

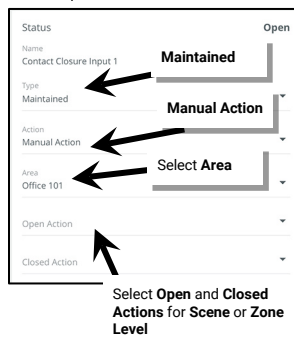
Wall Status Toggle:²⁴³ The connected device will issue commands to issue an OPEN or CLOSE signal to the WaveLinx system for selected partition wall. When the maintained contact is OPEN the signal will indicate an open partition wall. When the maintained contact is CLOSED, the signal will indicate a closed partition wall. The target area selection will only display partitioned areas. The wall selection will display the walls that are defined in the selected partitioned area. The Open Action and Closed Action settings are irrelevant as the input signals are hard coded.

- 4: For **maintained** contacts tap on the **Open Action**. Set the desired command and parameters and then tap **SAVE**. Repeat to set the **Close Action** (for Wall Status Toggle, leave the actions at default. The input function is hardcoded for this action type). For **momentary** contacts, there will only be one action to define. Select the desired action and tap **SAVE**.

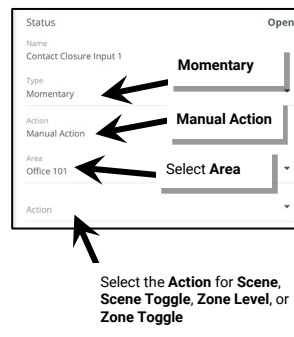
Sample Maintained Action



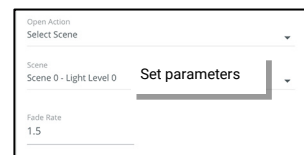
Sample Maintained Manual Action



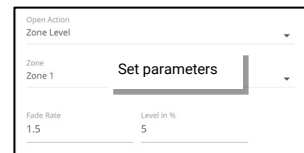
Sample Momentary Manual Action



Scene Action



Zone Level Action



- 5: Repeat for any additional inputs wired to the Contact Closure Input Module.

²⁴² After Hours Occupancy Mode will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

²⁴³ Wall Status Toggle will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

Modifying Occupancy Sensor Response

The WaveLinX App allows modification of some occupancy sensor functions at the individual sensor level and other functions at a grouped level called an occupancy set.

An **occupancy set** is a group of occupancy sensors that operate together to control a group of devices. Any sensor in the group sensing motion will refresh its occupied command at continuous intervals. When the WaveLinX Area Controller no longer receives occupied signals from any of the sensors in the occupancy set, it will begin transitioning its associated zones through the hold time to the unoccupied level. With this logic, ANY sensor in the occupancy set can command the group to the occupied light level, but ALL sensors in the occupancy set need register an unoccupied state before lighting can transition to the unoccupied level.

When a standard or partitioned area is created, any occupancy sensor assigned to the area (sub area in a partitioned area) is automatically grouped into a default occupancy set to control the loads in the area (sub area). This includes fixture WaveLinX PRO and LV Integrated Sensors, WaveLinX PRO and CAT Ceiling Sensors, and Greengate occupancy sensors connected to the contact input of WaveLinX PRO Universal Voltage Dimming Switchpacks or to a WaveLinX CAT Sensor Input Module.

The default behavior of any occupancy set is:

- **Mode:** Occupancy
- **Hold Time:** 20 minutes
- **Occupied State:** Select Scene 3 (50%)
- **Unoccupied State:** Select Scene 0 (0%)

IMPORTANT: The occupancy set will control the dimmable, non dimmable, and receptacle zone(s) in the area.

The default behavior can be changed to meet other requirements. This section discusses how to implement the changes.

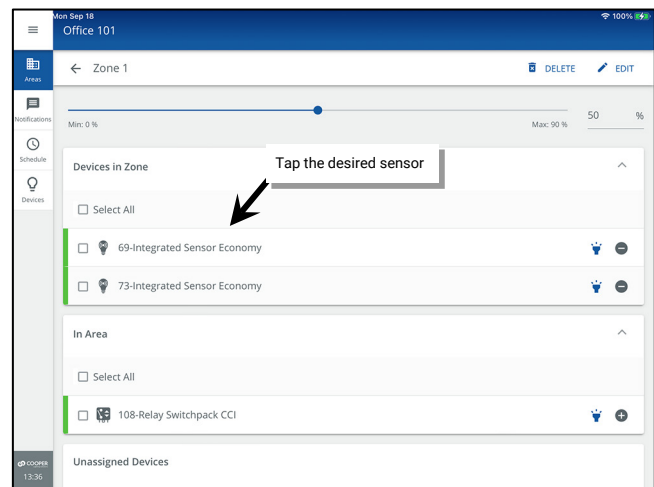
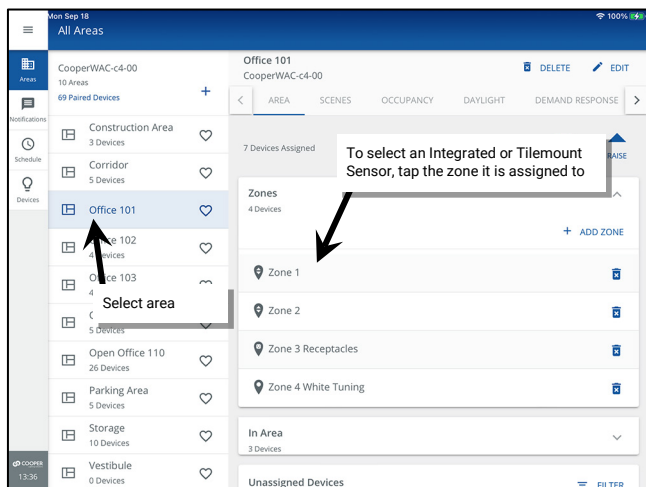
Distributed Mode default configuration for the WaveLinX CAT Sensor Input Module will be overwritten by the Networked Mode programmed settings made in the WaveLinX Mobile App.

Adjusting or Viewing Individual Sensor Settings (Based on Sensor Type)

While most sensor settings will be assigned in the occupancy set, specific settings are available at the individual sensor level in the **Device Details** page. Regardless of the sensor type, the individual sensor settings will be accessed in a similar way.

To view or adjust the individual sensor's settings:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁴⁴ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor device and then locate the desired device. Tap the desired device to open the configuration screen.
 - WaveLinX PRO and LV Fixture Integrated or WaveLinX PRO Tilemount Sensors will appear within the fixture's assigned zone in both standard and partitioned areas.



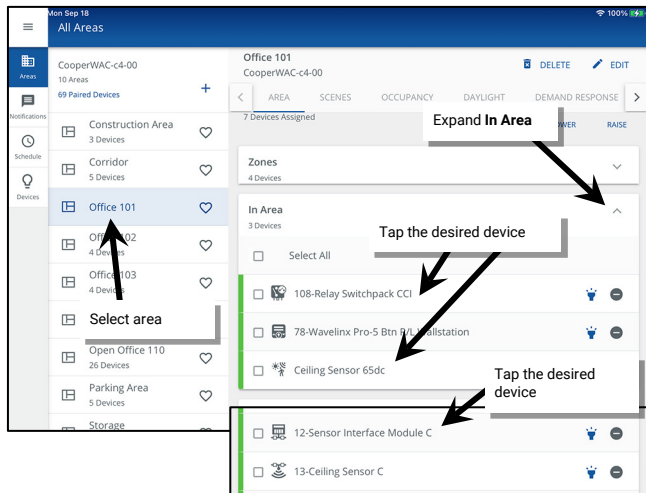
²⁴⁴ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

- To locate WaveLinx PRO and CAT Ceiling Sensors and Greengate sensors connected to WaveLinx PRO Universal Voltage Dimming Switchpacks or to WaveLinx CAT Sensor Input Modules.

- Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁴⁵ and establish a connection with the WaveLinx Area Controller as the administrator user.
- In the **All Areas** list, select the area to be modified and locate and select the device.

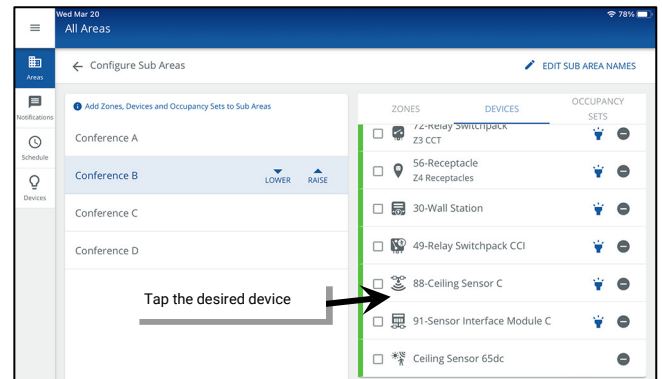
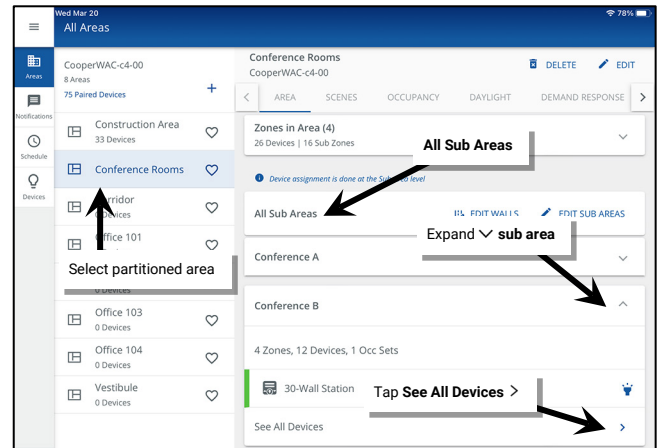
Accessing the Sensor in a Standard Area

Expand **▼** the **Devices in Area** section and tap the device.

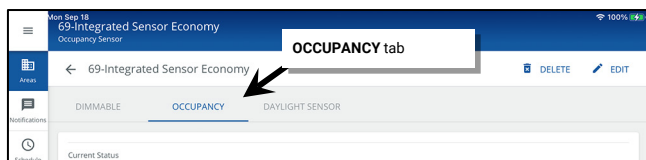


Accessing the Sensor in a Partitioned Area

Scroll down to view **All Sub Areas**. Tap **expand ▼** to open the **sub area** and then tap **See All Devices**. In the **Devices** list, tap the device.



- If the device has more than one tab, in the **Device Details** screen, select the **OCCUPANCY** tab.²⁴⁶ Modify or view the desired settings within the sensor screen.

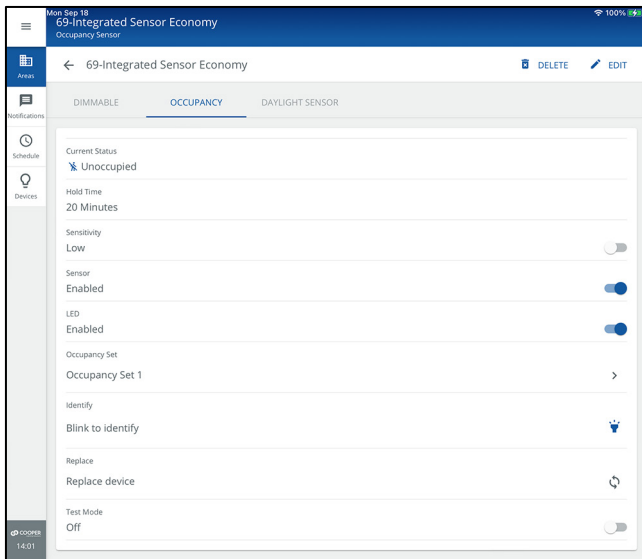




²⁴⁵ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

²⁴⁶ Greengate sensors connected to WaveLinx CAT Sensor Input Modules will automatically open to the **Occupancy** view. Greengate sensors connected to WaveLinx PRO Universal Voltage Dimming Switchpacks will automatically open to the **Occupancy** tab if the input type is set for **Occupancy Sensor** only.

WaveLinX PRO and LV Integrated and WaveLinX PRO Tilemount Sensor Settings

The WaveLinX PRO Integrated and WaveLinX PRO Tilemount Sensors will display the following details. WaveLinX LV Integrated Sensors will have similar options. See the chart below for details on the available settings.



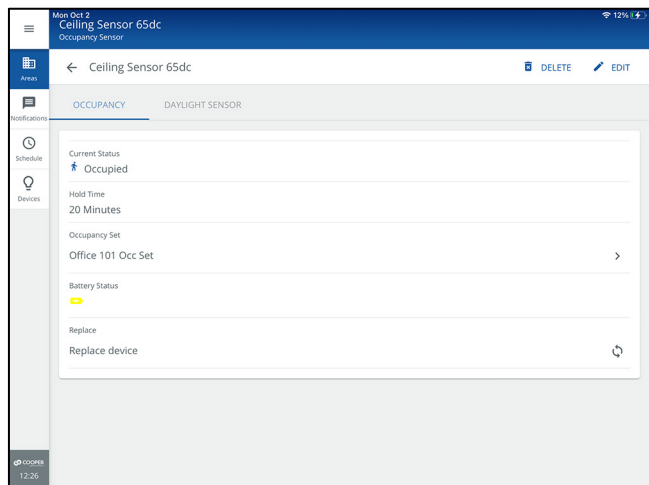
Setting	Default	Description
Current Status	N/A	Displays the status of the sensor, either occupied or unoccupied.
Hold Time	20 Minutes	This area of the display shows the Occupancy Set's programmed hold time. It is for informational purposes only and cannot be adjusted at the individual sensor level.
Sensitivity	Low	Slide the switch to low sensitivity if a sensor is detecting motion outside of the desired coverage area. Switch to high to regain the full motion sensing range. ²⁴⁷
Sensor	Enabled	Slide the switch to disable the occupancy sensor for this device. This can be helpful if a sensor is false-triggering due to challenging placement (examples: near air vents or doorways) or for a sensor that is being used for solely for daylighting.
LED	Enabled	Disabling the LED is not recommended as it is often used to determine if the sensor is operational. If the sensor LED flash is a major distraction, set to disabled.
Occupancy Set	Occupancy Set 1	Displays the occupancy set that the sensor is assigned to. Tap on the right arrow > to navigate directly to the occupancy set configuration.
Blink to Identify	N/A	Tap on  to cause the connected fixture to flash ON and OFF for a 15 second period. The sensor LED will flash magenta for the 15 second period. To cancel Blink to Identify before the timer expires, tap  again.
Replace device	N/A	If the sensor has been replaced, this option may be used to associate the new device to the previous sensor's programming. See "Replacing WaveLinX Devices" on page 342 for further information.
Test Mode	N/A	If test mode is activated (slide switch to activate), the sensor will be placed in test mode for 10 minutes. During test mode, the occupancy sensor will operate with a 10 second hold time. ²⁴⁸




²⁴⁷ The WaveLinX PRO IR Remote can also be used for adjusting this feature. Refer to the WaveLinX PRO IR Remote User Guide for details on using this feature.

²⁴⁸ If more than one occupancy sensor reports to the occupancy set, use test mode at the occupancy set level to limit interference from other sensors in the area. For sensors that support the use of the WaveLinX PRO IR Remote, use the occupancy sensor **Occ Test** function to reliably test an individual sensor's function. Refer to the WaveLinX PRO IR Remote User Guide for details on using this feature.

WaveLinx PRO Ceiling Sensor Settings

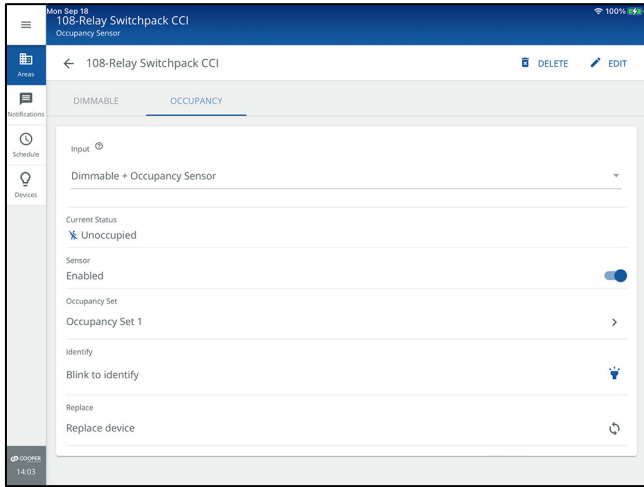
The WaveLinx PRO Ceiling Sensors will display the following details. See the chart below for details on the available settings.




Setting	Default	Description
Current Status	N/A	Displays the status of the sensor, either occupied or unoccupied.
Hold Time	20 Minutes	This area of the display shows the Occupancy Set's programmed hold time. It is for informational purposes only and cannot be adjusted at the individual sensor level.
Occupancy Set	Occupancy Set 1	Displays the occupancy set that the sensor is assigned to. Tap on the right arrow > to navigate directly to the occupancy set configuration.
Battery Status	N/A	<p>Battery powered WaveLinx Ceiling Sensors will show an indication of the current battery status. The icon will be green if the battery voltage measures full, yellow if measuring partial voltage and blink red when at an extremely low voltage indicating that the batteries need to be changed.</p> <ul style="list-style-type: none">  • Battery good: >2.6V  • Battery medium: <= 2.6V – 2.4V  • Battery low: <2.4V
Replace device	N/A	If the sensor has been replaced, this option may be used to associate the new device to the previous sensor's programming. See "Replacing WaveLinx Devices" on page 342 for further information.

WaveLinx PRO Universal Voltage Dimming Switchpack Connected to a Greengate Occupancy Sensor

A Greengate Occupancy Sensor connected to a WaveLinx PRO Universal Voltage Dimming Switchpack will display the following details when programmed with an input type of **Dimmable + Occupancy Sensor** or **Occupancy Sensor**. See the chart below for details on the available settings.

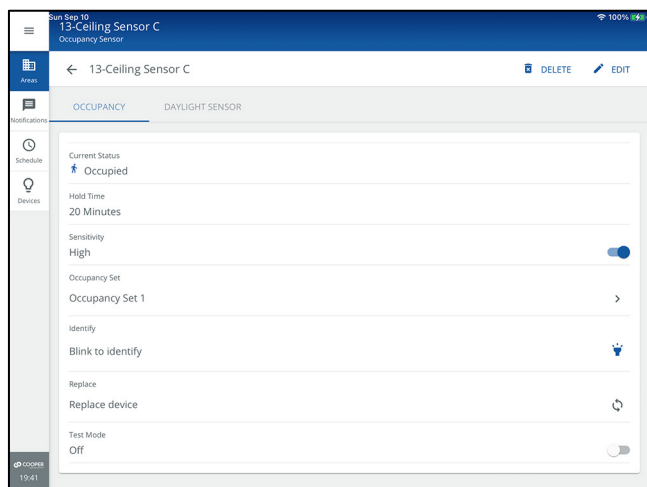




Setting	Default	Description
Input	Dimmable	Must be set to Occupancy Sensor or Dimmable + Occupancy Sensor to operate properly when connected to a Greengate Occupancy Sensor.
Current Status	N/A	Displays the status of the sensor, either occupied or unoccupied.
Sensor	Enabled	Slide the switch to disable the occupancy sensor for this device. This can be helpful if a sensor is false-triggering due to challenging placement (examples: near air vents or doorways) or for a WaveLinx Ceiling Sensor that is being used for solely for daylighting.
Occupancy Set	Occupancy Set 1	Displays the occupancy set that the sensor is assigned to. Tap on the right arrow > to navigate directly to the occupancy set configuration.
Blink to Identify	N/A	Tap on  to start Blink to Identify mode. The Universal Dimming Switchpack will cycle power to the Greengate sensor, causing the sensor to flash its LEDs during the powerup cycle to allow it to be identified. ²⁴⁹ The sensor will also issue an occupied command. The Blink to Identify mode cannot be manually cancelled and will time out on its own after a 1-minute period.
Replace device	N/A	If replacing a Greengate occupancy sensor, simply replace the sensor. No WaveLinx App reconfiguration is necessary. If replacing the connected WaveLinx Universal Voltage Dimming Switchpack that connects to the occupancy sensor, use Replace Device to associate the new device to the previous switchpack's programming. See "Replacing WaveLinx Devices" on page 342 for further information.

²⁴⁹ Greengate sensors not approved for use with WaveLinx or not directly connected for power from the WaveLinx Universal Voltage Dimming Switchpack may not exhibit the described behavior.

WaveLinx CAT Occupancy Ceiling Sensor Settings

The WaveLinx CAT Occupancy Ceiling Sensor will display the following details. See the chart below for details on the available settings.



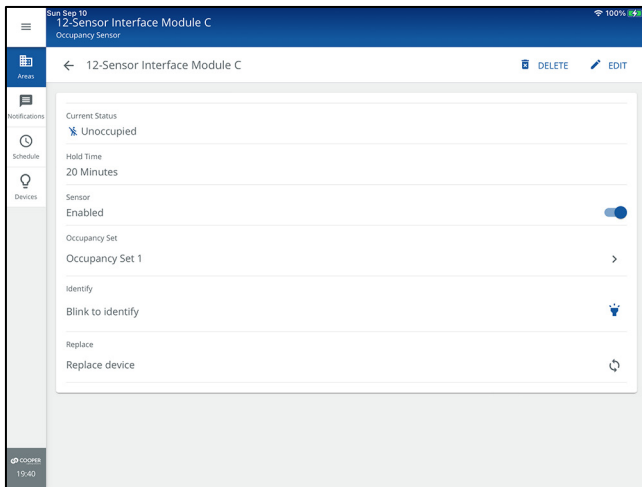
Setting	Default	Description
Current Status	N/A	Displays the status of the sensor, either occupied or unoccupied.
Hold Time	20 Minutes	This area of the display shows the Occupancy Set's programmed hold time. It is for informational purposes only and cannot be adjusted at the individual sensor level.
Sensitivity	High	Slide the switch to low sensitivity if a sensor is detecting motion outside of the desired coverage area. Switch to high to regain the full motion sensing range. ²⁵⁰
Occupancy Set	Occupancy Set 1	Displays the occupancy set that the sensor is assigned to. Tap on the right arrow > to navigate directly to the occupancy set configuration.
Blink to Identify	N/A	Tap on  to cause the sensor LED to flash magenta ON and OFF for a 15 second period. To cancel Blink to Identify before the timer expires, tap  again.
Replace device	N/A	If the sensor has been replaced, this option may be used to associate the new device to the previous sensor's programming. See "Replacing WaveLinx Devices" on page 342 for further information.
Test Mode	N/A	If test mode is activated (slide switch to activate), the sensor will be placed in test mode for 10 minutes. During test mode, the occupancy sensor will operate with a 10 second hold time. ²⁵¹



²⁵⁰ The WaveLinx PRO IR Remote can also be used for adjusting this feature. Refer to the WaveLinx PRO IR Remote User Guide for details on using this feature.

²⁵¹ If more than one occupancy sensor reports to the occupancy set, use test mode at the occupancy set level to limit interference from other sensors in the area. For sensors that support the use of the WaveLinx PRO IR Remote, use the occupancy sensor **Occ Test** function to reliably test an individual sensor's function. Refer to the WaveLinx PRO IR Remote User Guide for details on using this feature.

WaveLinx CAT Sensor Input Module Connected to a Greengate Sensor

The WaveLinx CAT Sensor Input Module connected to a Greengate Sensor will display the following details. See the chart below for details on the available settings.



Setting	Default	Description
Current Status	N/A	Displays the status of the sensor, either occupied or unoccupied.
Hold Time	20 Minutes	This area of the display shows the Occupancy Set's programmed hold time. It is for informational purposes only and cannot be adjusted at the individual sensor level.
Sensor	Enabled	Slide the switch to disable the occupancy sensor for this device. This can be helpful if a sensor is false-triggering due to challenging placement (examples: near air vents or doorways) or for a sensor that is being used for solely for daylighting.
Occupancy Set	Occupancy Set 1	Displays the occupancy set that the sensor is assigned to. Tap on the right arrow > to navigate directly to the occupancy set configuration.
Blink to Identify	N/A	Tap on  to cause the LED on the Sensor Input Module to flash magenta ON and OFF for a 15 second period. To cancel Blink to Identify before the timer expires, tap  again.
Replace device	N/A	If the sensor has been replaced, this option may be used to associate the new device to the previous sensor's programming. See "Replacing WaveLinx Devices" on page 342 for further information.

Adjusting Occupancy Set Settings

The occupancy set programming defines the response for all sensors within that set. When assigned to an area or sub area in a partitioned area, all occupancy sensor type WaveLinx PRO, LV or CAT devices are automatically assigned to the area's default occupancy set.

- **In a standard area**, the occupancy set defines the behavior of the occupancy sensors assigned to it.
- **In a partitioned area**, the occupancy set at the main level defines the behavior of the occupancy sub sets assigned at the sub area level. When all the partitions are open (creating one large space) the joined occupancy sub sets will operate as one large occupancy set for the entire joined space. When partitions are closed, the occupancy sub sets operate their sub area independently.

The default behavior of any occupancy set is:

- **Mode:** Occupancy
- **Hold Time:** 20 minutes
- **Occupied State:** Select Scene 3 (50%)
- **Unoccupied State:** Select Scene 0 (0%)

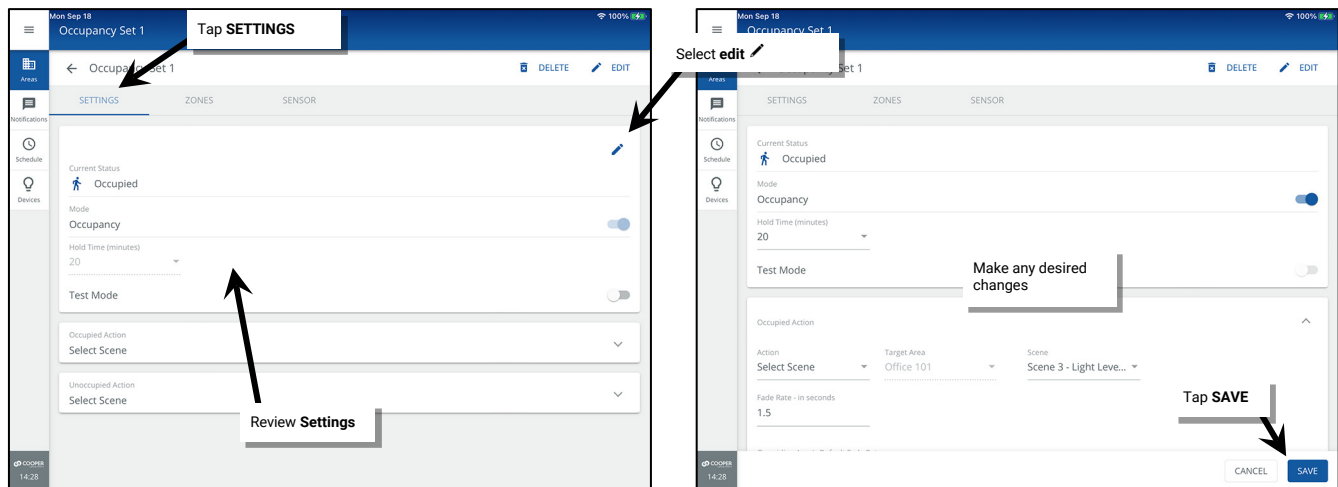
The occupancy set will control the dimmable, non dimmable, and receptacle zones in the standard area or in the sub areas of a partitioned area.

To modify the occupancy set response:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁵² and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor set, then tap on the **OCCUPANCY** option.
- 3: Select the desired occupancy set.



4. In the **SETTINGS** tab, review the current settings. To change the settings, tap **EDIT** and then change the desired settings.



²⁵² The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Setting	Default	Description
Current Status	N/A	Displays the status of the occupancy set, either occupied or unoccupied.
Mode	Occupancy	Slide the switch to change between occupancy or vacancy mode. <ul style="list-style-type: none"> • Occupancy mode: The defined occupied action will occur when any sensor in the group detects initial motion. • Vacancy mode: The sensors will not perform any action upon initial motion detection. The occupant must turn ON loads manually using other WaveLinx controls in the space.²⁵³ For both modes, the lighting will start transitioning to the unoccupied level when motion is no longer detected by <u>any</u> sensor in the occupancy set and after the defined hold time expires.
Hold Time	20 minutes	Tap on the button to choose additional hold times or to define a custom one (1 to 40 min.). The hold time determines how long the system will wait to issue the unoccupied action once all sensors no longer detect occupancy. ²⁵⁴
Test Mode	Disabled	See “Using Occupancy Set Test Mode” on page 217 for information on using this feature.
Occupied Action (will not show for vacancy mode)	Select Scene 3	Tap on the drop down to select a different occupied action. Select a defined scene or zone level ²⁵⁵ or select to return to the last known light level.
Unoccupied Action	Select Scene 0	Tap on the drop down to select a different unoccupied action. Select a defined scene or zone level. ²⁵⁵

Hold Time Information for Greengate Occupancy Sensors Connected to WaveLinx PRO Universal Voltage Dimming Switchpacks or WaveLinx CAT Sensor Input Modules

If an occupancy set contains Greengate occupancy sensors that are connected to WaveLinx PRO Universal Voltage Dimming Switchpacks or to WaveLinx CAT Sensor Input Modules, the hold time setting for the occupancy set may be affected by the Greengate Occupancy Sensor onboard configuration switch setting. For optimal results:

- Ensure that the Greengate Occupancy Sensor configuration switches are set for a 5-minute hold time. Refer to the sensor’s installation instructions for details on which configuration switches to use for that sensor model.
- Do not assign a hold time of less than 5 minutes to the occupancy set in the WaveLinx App.
- The WaveLinx system has been designed such that when a Greengate sensor issues an occupied command, the occupancy set begins to monitor its assigned hold time.
 - If all sensors in the occupancy set become unoccupied prior to the hold time timer expiring, the lighting will remain ON until the WaveLinx occupancy set hold time expires.
 - If the occupancy set hold time expires, and only Greengate sensors are still in the occupied state, the lighting will remain ON until Greengate sensors issue the unoccupied signal. At this time, because the occupancy set’s hold time has already expired, the occupancy set will immediately issue the unoccupied command.

This means that when Greengate sensors are used, the hold time will be determined by whichever hold time setting is longest. Setting the Greengate onboard configuration to 5 minutes offers the most flexibility to be able to change programming to different hold time settings without the need to make physical sensor configuration adjustments.

See the chart below for clarification:

	Scenario 1	Scenario 2	Scenario 3	Scenario 4	Scenario 5	Scenario 6	Scenario 7
Greengate Sensor onboard hold time	5 min.	10 min	30 min	20 min	5 min	5 min	5 min
WaveLinx Occupancy Set Hold Time	3 min	5 min	10 min	30 min	30 min	10 min	5 min
Final Unoccupied Hold Time Delay	5 min	10 min	30 min	30 min	30 min	10 min	5 min

²⁵³ Not all sensors support vacancy mode. WaveLinx Outdoor Integrated Sensors will continue to operate in occupancy mode if vacancy mode is set.

²⁵⁴ For occupancy sets that contain WaveLinx Universal Voltage Dimming Switchpacks connected to a Greengate Occupancy Sensor, please see page 214 for information on how hold time operates with these sensors.

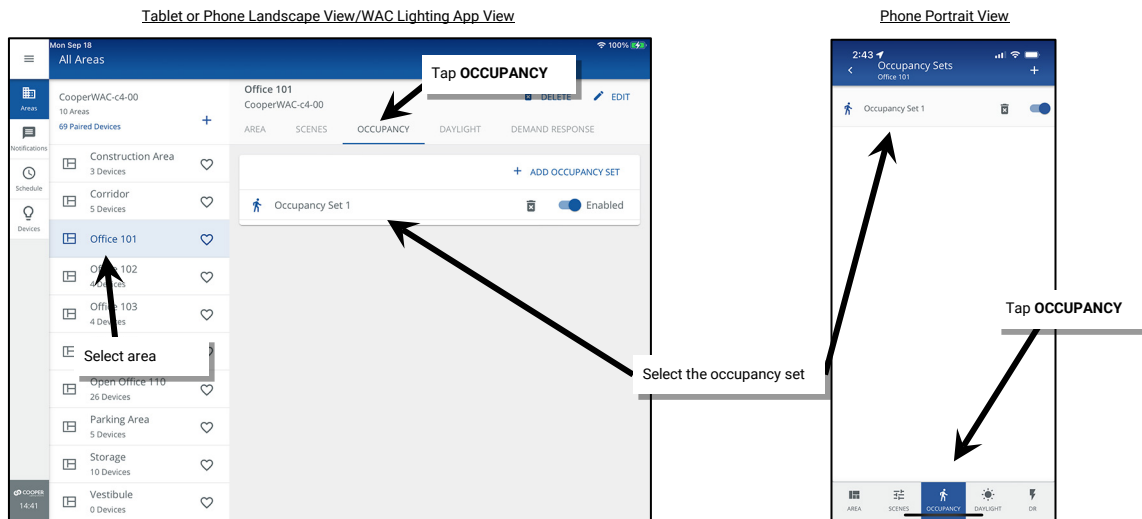
²⁵⁵ White tuning zones are automatically exempted from control if the **ALL** or **AFFECTED** zone is selected to prevent inadvertent color temperature shifts when adjusting light levels. The white tuning zone will only respond to this command if it is the only zone selected.

Adjusting Occupancy Set Controlled Zones

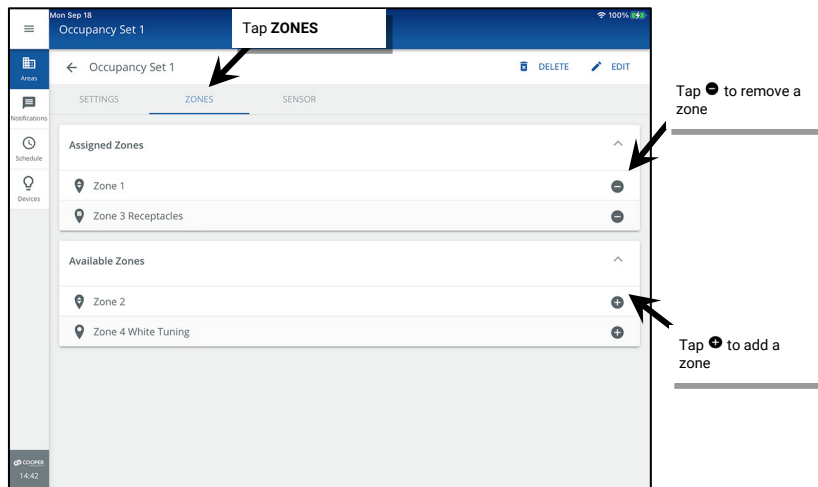
The occupancy set will automatically be set to control any dimmable, non dimmable, or receptacle zones in the area, and in the partitioned sub areas. This section describes how to add or remove the main zones from occupancy set control.

To add or remove controlled zones:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁵⁶ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor set, then tap on the **OCCUPANCY** option.
- 3: Tap the desired occupancy set.



4. Tap the **ZONES** tab. The **Assigned Zones** section will show the zones that operate from the occupancy set while other zones in the area will be in the **Available Zones** area. Tap on **remove** to remove a zone or tap on **add** to add a zone.²⁵⁷



²⁵⁶ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

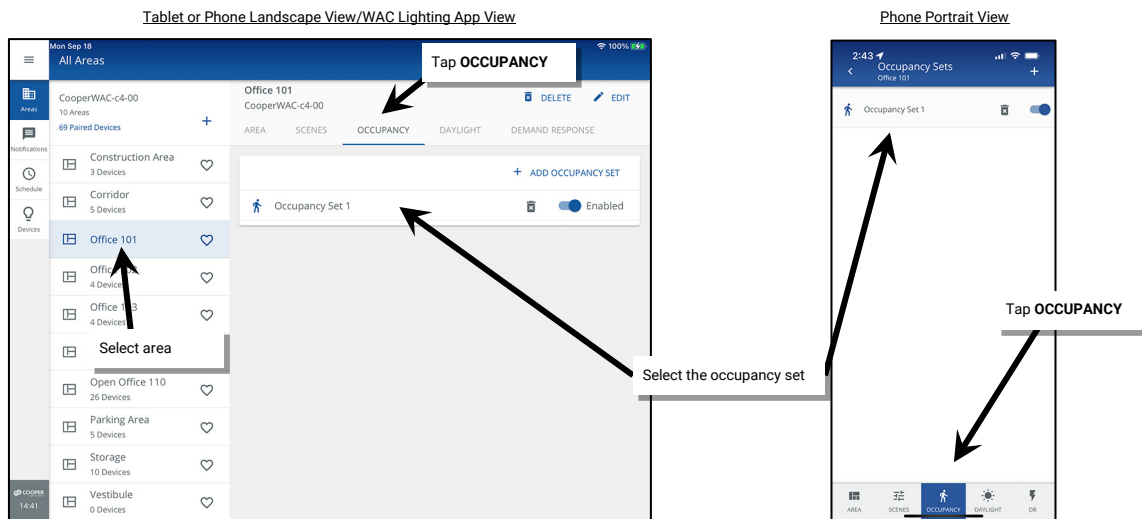
²⁵⁷ White tuning zones can be assigned to an occupancy set to have tunable white devices respond to specified color temperatures when occupancy command occur. If not included in an occupancy set, white tuning zones color temperature will not be affected by occupancy sensor commands.

Adjusting Occupancy Set Assigned Sensors

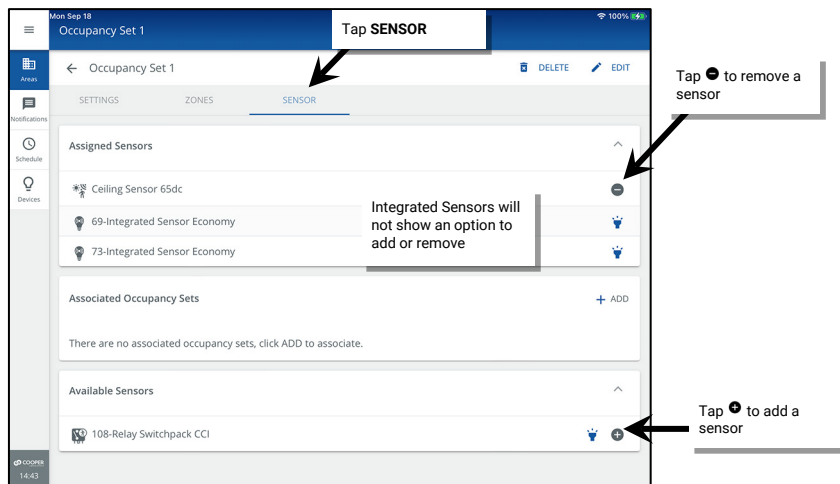
Any occupancy sensors assigned to the area including WaveLinx PRO and LV Integrated Sensors, PRO Tilemount Sensors, PRO and CAT Ceiling Sensors and Greengate occupancy sensors connected to WaveLinx Universal Voltage Dimming Switchpacks or CAT Sensor Interface Modules will automatically be assigned to the occupancy set. WaveLinx PRO and CAT Ceiling Sensors and Greengate occupancy sensors connected to WaveLinx Universal Voltage Dimming Switchpacks or CAT Sensor Interface Modules can be added or removed from the occupancy set. PRO and LV Integrated Sensors and PRO Tilemount Sensors cannot be removed from an occupancy set if the occupancy set controls their attached fixture's zone. This section describes how to add or remove sensors (if allowed) from being part of the occupancy set.

To add or remove occupancy sensors:

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁵⁸ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor set, then tap on the **OCCUPANCY** option.
- 3: Tap the desired occupancy set.



4. Tap the **SENSOR** tab. The **Assigned Sensors** section will show the sensors that operate in the occupancy set. Sensors that are in the area but not assigned to any occupancy set will be in the **Available Sensors** area. Tap **remove** to remove a sensor or tap on **add** to add a sensor.



²⁵⁸ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Enabling/Disabling Occupancy Sets

WaveLinx occupancy set can be enabled or disabled manually through the WaveLinx Applications or routinely through an **Enable/Disable Occupancy Detection** schedule event. Disabling an occupancy set will prevent occupancy sensors from operating the assigned zones. When the occupancy set is disabled, the LEDs on the sensors will indicate that they are disabled, flashing white for 1 sec. / OFF for 1 sec. repeatedly until the sensors are enabled.^{259, 260}

Make sure that the occupancy set is enabled again either manually or through a schedule event. Once enabled, the occupancy set will issue the programmed commands and the sensor LED(s) will return to normal behavior.

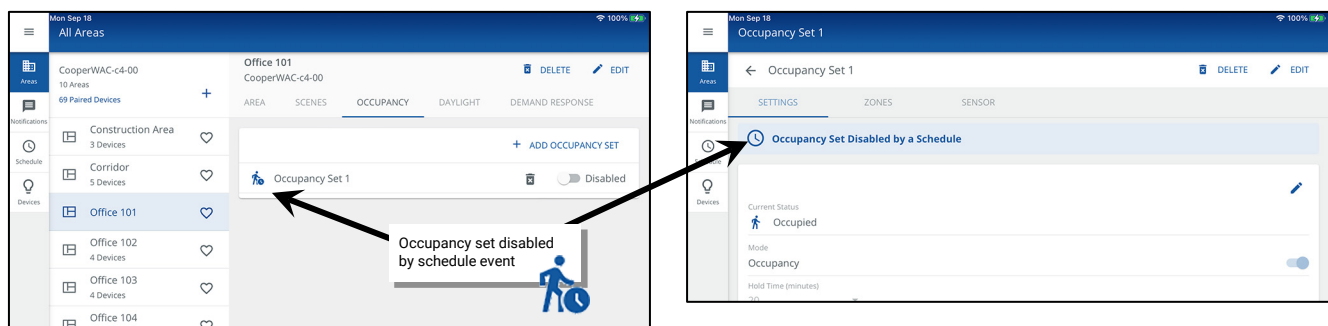
To manually enable/disable occupancy set(s):

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁶¹ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor set, then tap on the **OCCUPANCY** option.
- 3: Locate the desired occupancy set and then use the slide switch to change between **Enabled** and **Disabled**.



To use a schedule event to disable/enable occupancy sets, see “Enable/Disable Occupancy Detection Action” on page 254.

The WaveLinx Application will indicate the occupancy set is currently disabled by displaying a clock icon in the occupancy set list and a banner message in the occupancy set screen. The icon and message banner will clear once an enable occupancy detection event occurs or if the occupancy set is manually enabled.²⁶²



Using Occupancy Set Test Mode

The occupancy set may be placed into a temporary test mode to verify sensor response.²⁶³ If test mode is activated, all WaveLinx PRO and LV Integrated sensors, PRO Tilemount Sensors, and CAT Ceiling Sensors in the occupancy set will be placed in test mode for 10 minutes. During test mode these sensors will operate with a 10 second hold time.

²⁵⁹ The SWPD1 (IS) ambient integrated sensor will not display the disabled LED behavior described.

²⁶⁰ If a closed loop daylight sensor has dimmed lighting to OFF, the LED will flash white for 700ms / yellow for 300ms / OFF for 1 second and then repeat.

²⁶¹ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

²⁶² The schedule event action **Enable/Disable Occupancy Detection** is available on WAC2 (Gen 2) minimum software version 12.x.x.x and higher.

²⁶³ Test mode at the occupancy set will place all sensors in the occupancy set into test mode. If needed, for sensors that support the use of the WaveLinx PRO IR Remote, use the occupancy sensor **Occ Test** function to reliably test an individual sensor's function. Refer to the WaveLinx PRO IR Remote User Guide for details on using this feature.

Battery powered WaveLinX PRO Ceiling Sensors or Greengate Occupancy Sensors connected to WaveLinX PRO Universal Switchpacks and CAT Sensor Input Modules will not respond to test mode and will be ignored during the test period to prevent interference with the test of other sensors in the occupancy set.

Test mode will automatically revert to normal operation after a 10-minute period or may be manually disabled prior to the 10-minute expiration through the WaveLinX App.

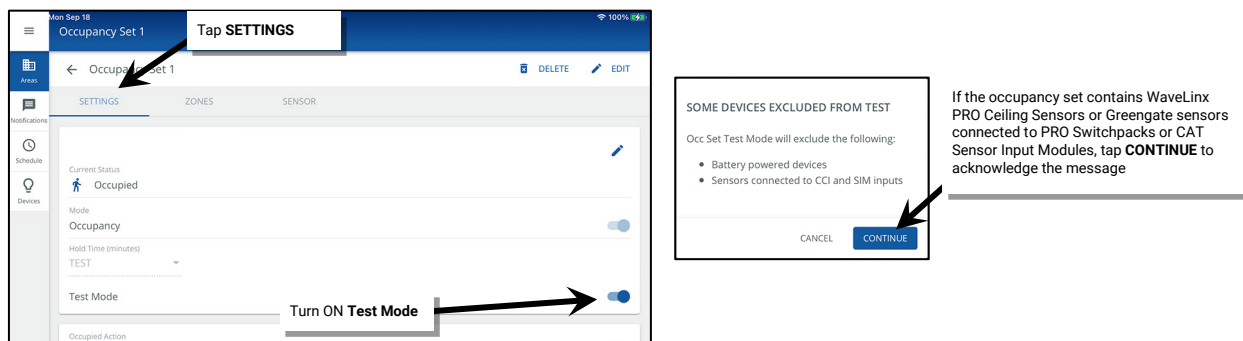
To test occupancy sensors:

Before proceeding, make sure to test during a time when there is little motion occurring in the area.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁶⁴ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor set, then tap on the **OCCUPANCY** option.
- 3: Tap the desired occupancy set.



4. In the **SETTINGS** tab, slide the **Test Mode** switch to the ON position. If the occupancy set has WaveLinX Ceiling Sensors or Greengate connected sensors, acknowledge the reminder that Ceiling Sensors and Greengate connected sensors will be ignored.



- 5: If lighting is ON, stand still. Lighting should transition to the unoccupied level after 10 seconds of no activity on any sensor.
- 6: Move to verify that the lighting goes back to the occupied level.
- 7: Continue this process at each sensor location to verify individual sensor operation. If the sensor sensitivity needs to be adjusted, see page 206.
- 8: Allow the 10-minute test period to automatically expire or slide the **Test Mode** switch to the OFF position.

Quick Links for Common Questions

- My wallstation or occupancy sensors only work at night. Why is this occurring? See the answer on page 364.
- I am using a WaveLinX Universal Voltage Dimming Switchpack's contact closure input. My dimming switchpack does not have the additional icon showing in the **In Area** section of the WaveLinX App or I do not see the option to set the input type. Why is this icon/input type not showing? See the answer on page 364.

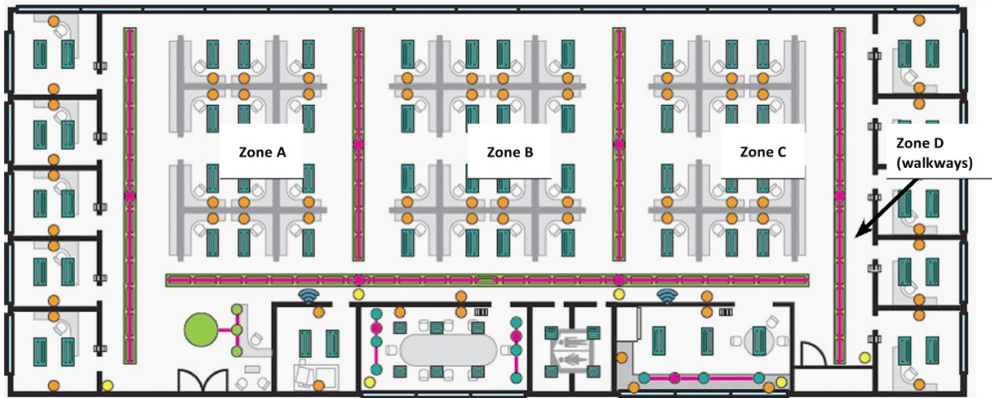
²⁶⁴ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Creating Additional Occupancy Sets in Standard Areas

Although it is not typical of most applications, one area may require more than one occupancy set. Use additional occupancy sets only when necessary to meet the intended application.

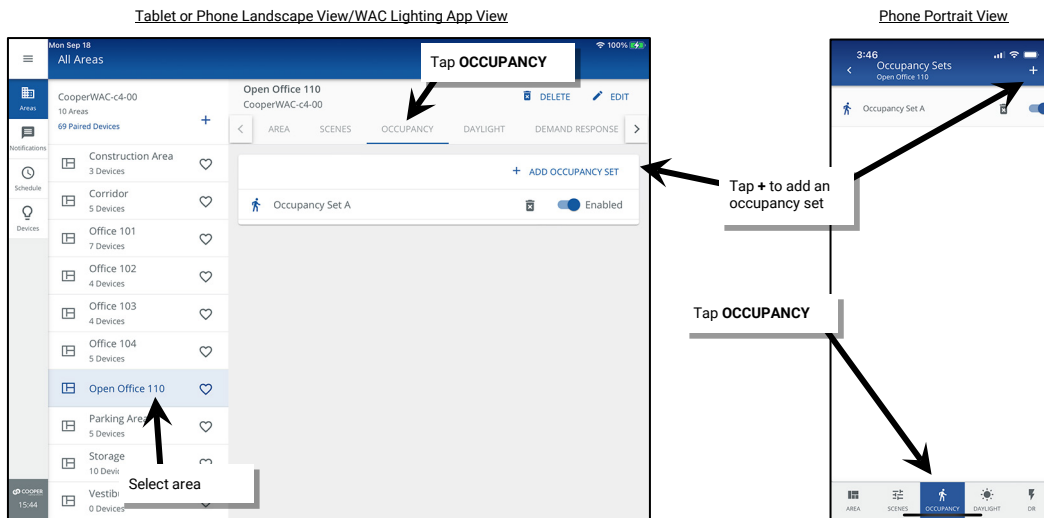
A standard area example application that highlights the use of multiple occupancy sets is an open office area. While the open office is defined as a single area for wallstation control, in this example, the owners desire greater granularity for occupancy sensor control. Occupancy sensor response is to be limited to specific zones within the open office space.

In the given application, light fixtures are grouped into unique zones to achieve the desired occupancy sensor operation. Occupancy sets need to be created for each of these unique zones



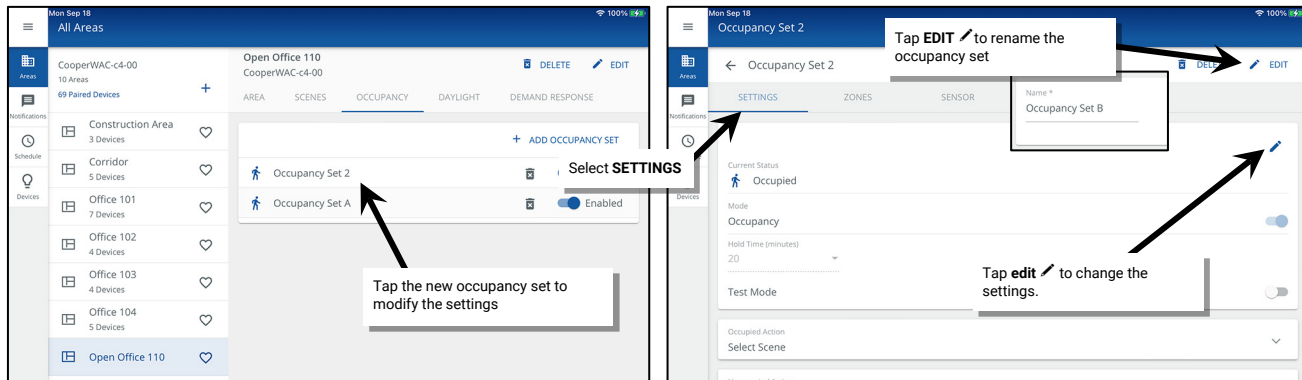
To create a new occupancy set:

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁶⁵ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area and then tap on the **OCCUPANCY** option. Before proceeding, ensure that the existing occupancy set has the correct configuration, controlled zone(s), and assigned sensor(s). It is helpful also to rename the occupancy set for easy identification.
- 3: Next, tap **+** to add an occupancy set.

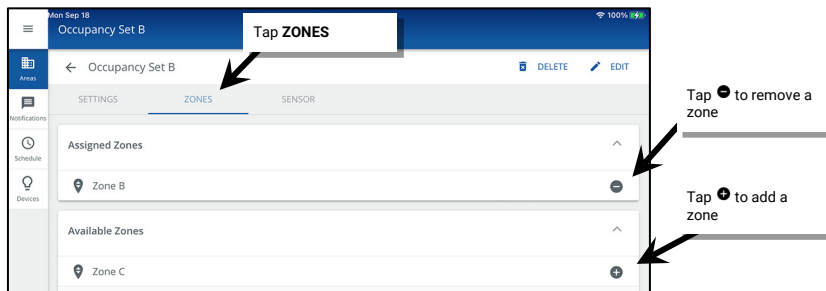


²⁶⁵ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

4. Tap the new occupancy set to open it for configuration.
- 5: (Optional) Tap **EDIT** ✎ at the top of the screen to rename the occupancy set.
- 6: Make sure the **SETTINGS** tab is selected. Define the settings for the occupancy set. See page 212 for an explanation of each of the available settings.

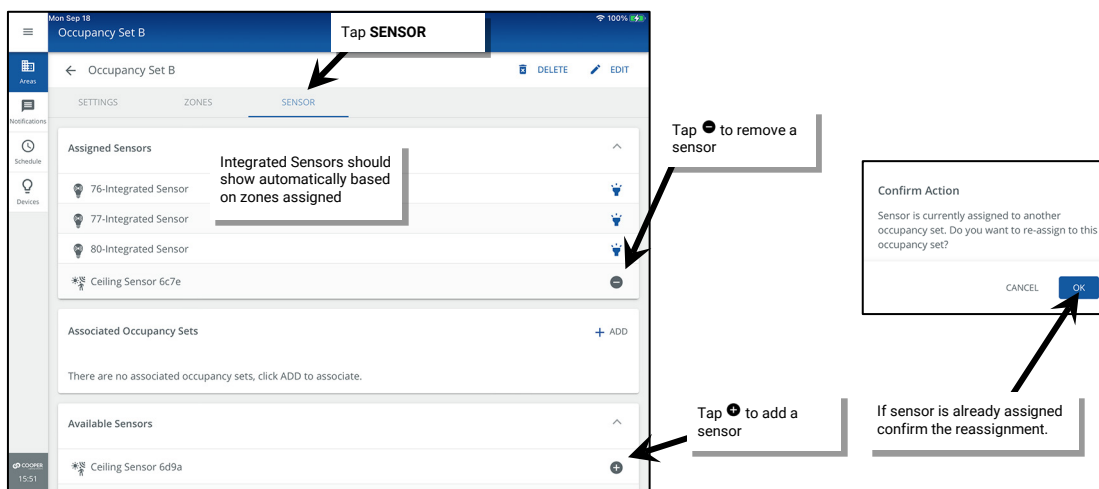


- 7: Tap the **ZONES** tab. Tap on **remove** - or **add** + to select the controlled zone(s).²⁶⁶



- 8: Next, tap the sensors icon. Verify that the displayed assigned sensors are correct. If the assigned zones consist of fixtures with Integrated Sensors, the sensors from the controlled zone will automatically be displayed. WaveLinx PRO and CAT Ceiling Sensors and Greengate occupancy sensors connected to WaveLinx PRO Universal Switchpacks and WaveLinx CAT Sensor Input Modules may need to be manually assigned.

To add a sensor, expand the **Available Sensors** which will display any sensors in the area that are available to assign (integrated sensors will not have the option to add). Once the correct sensor is located, tap on **add** + to add a sensor or tap **remove** - to remove a sensor from the occupancy set.²⁶⁷



The occupancy set configuration is now complete.

²⁶⁶ White tuning zones can be assigned to an occupancy set if desired. If not included in an occupancy set, white tuning zones color temperature will not be affected by occupancy sensor commands.

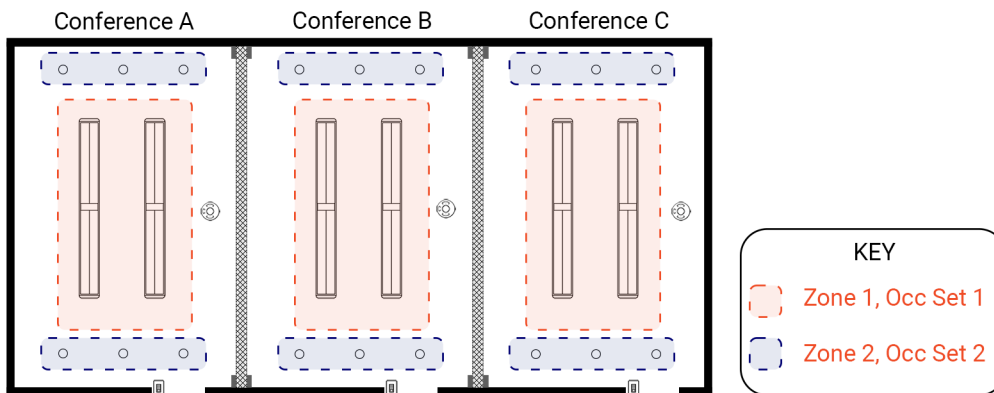
²⁶⁷ Assign sensors to only one occupancy set to avoid confusion.

Creating Additional Occupancy Sets in Partitioned Areas

In partitioned areas, careful thought should be used when using additional occupancy sets. In most cases, a partitioned area should use only one occupancy set. Use additional occupancy sets only when necessary to meet the intended application.

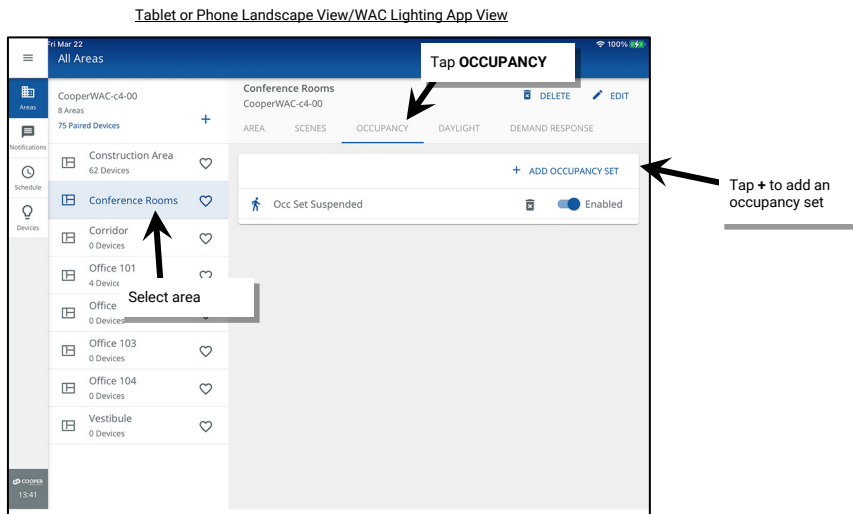
An example application that highlights the use of more than one occupancy sets in a partitioned space is shown below. In this partitioned space, the owner would like suspended lighting to turn OFF after 10 minutes of the space becoming unoccupied. The recessed lighting (zone 1) should remain ON for an additional 5 minutes and turn OFF.

In the given application, a partitioned area is created with three sub areas and two walls. Two zones are created, one for the suspended fixtures and one for the recessed lighting. Two occupancy sets are created, one for each zone. Zones 1 and 2 and Occupancy Set 1 and 2 are assigned to each sub area.



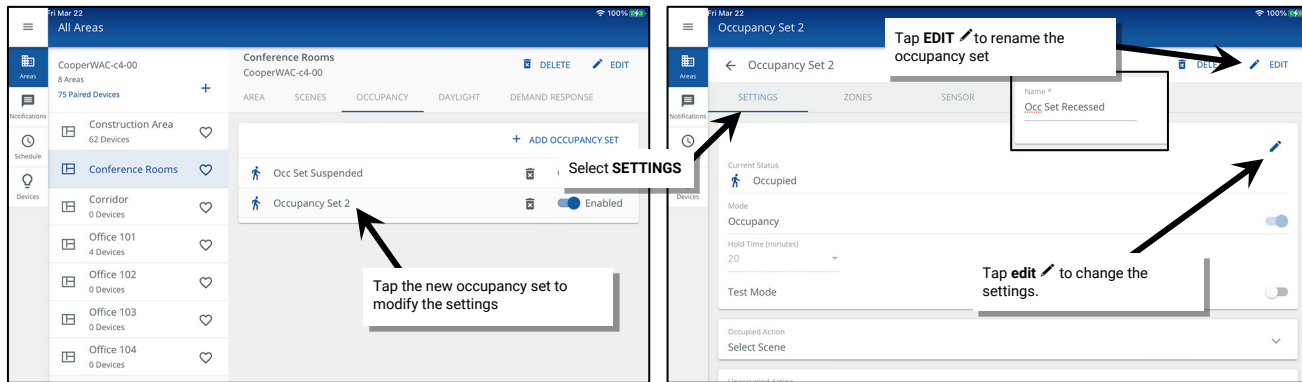
To create a new occupancy set in partitioned area and verify that they are properly assigned to the sub area(s):

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁶⁸ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area and then tap on the **OCCUPANCY** option. Before proceeding, ensure that the existing occupancy set has the correct settings, controlled zone(s), and assigned sensor(s). It is helpful also to rename the occupancy set for easy identification.
- 3: Next, tap **+** to add an occupancy set.

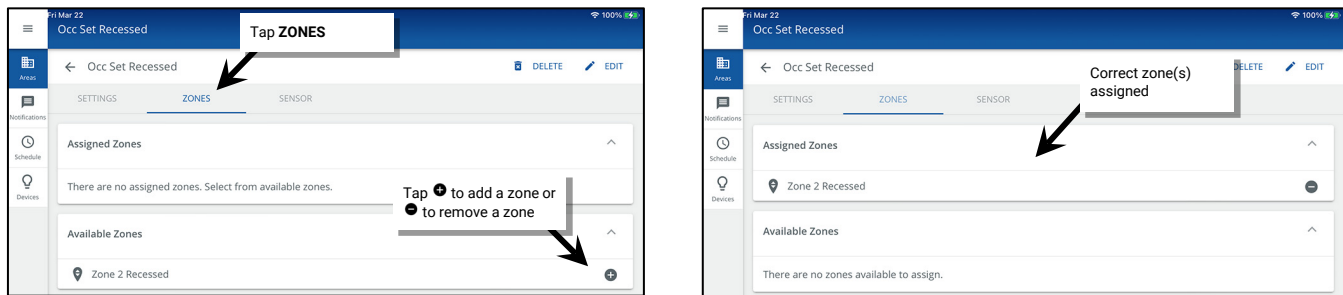


²⁶⁸ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

4. Tap the new occupancy set to open it for configuration.
- 5: (Optional) Tap **EDIT** ✎ at the top of the screen to rename the occupancy set.
- 6: Make sure the **SETTINGS** tab is selected. Define the settings for this occupancy set. See page 212 for an explanation of each of the available settings.

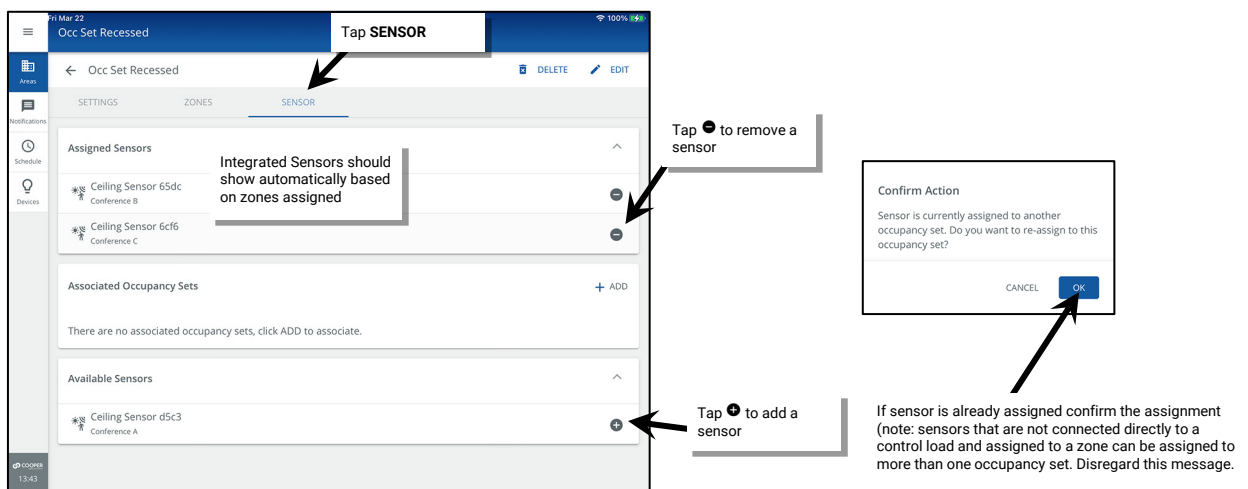


- 7: Tap the **ZONES** tab. Tap on **remove** ○ or **add** ⊕ to select the controlled zone(s) until the controlled zones are showing in **Assigned Zones**.²⁶⁹



- 8: Next, tap the sensors icon. Verify that the displayed assigned sensors are correct. If the assigned zones consist of fixtures with Integrated Sensors, the sensors from the controlled zone will automatically be displayed. WaveLinx PRO and CAT Ceiling Sensors and Greengate occupancy sensors connected to WaveLinx PRO Universal Switchpacks and WaveLinx CAT Sensor Input Modules may need to be manually assigned.

To add a sensor, expand the **Available Sensors** which will display any sensors in the area that are available to assign (integrated sensors will not have the option to add). Once the correct sensor is located, tap on **add** ⊕ to add a sensor or tap **remove** ○ to remove a sensor from the occupancy set.²⁷⁰



Verify that all sub areas have the correct Occupancy Sets assigned. See "Assigning Occupancy Sets to Partitioned Sub Areas" on page 223.

²⁶⁹ White tuning zones can be assigned to an occupancy set if desired. If not included in an occupancy set, white tuning zones color temperature will not be affected by occupancy sensor commands.

²⁷⁰ Assign sensors to only one occupancy set to avoid confusion.

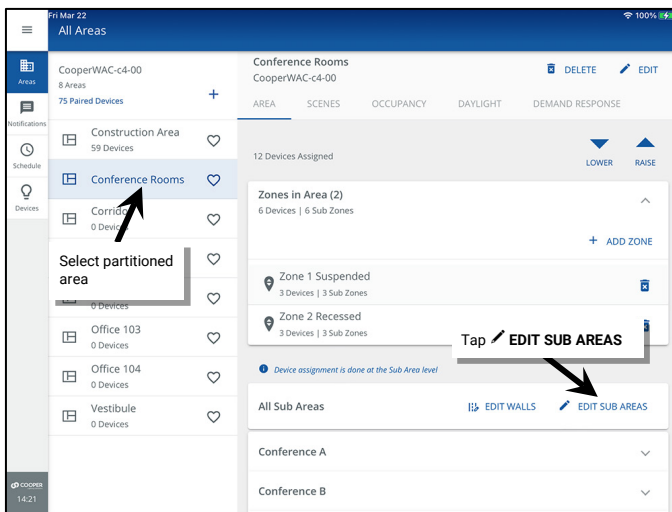
Assigning Occupancy Sets to Partitioned Sub Areas

When the zone is assigned to an Occupancy Set in a partitioned area, if a sub area has a device assigned to that zone, the Occupancy Set is automatically assigned to the sub area. This creates an Occupancy Sub Set for the sub area. Each occupancy sub set controls the independent sub area when partitioned walls are closed. When the walls are open, the Occupancy Sub Sets join to operate the joined areas.

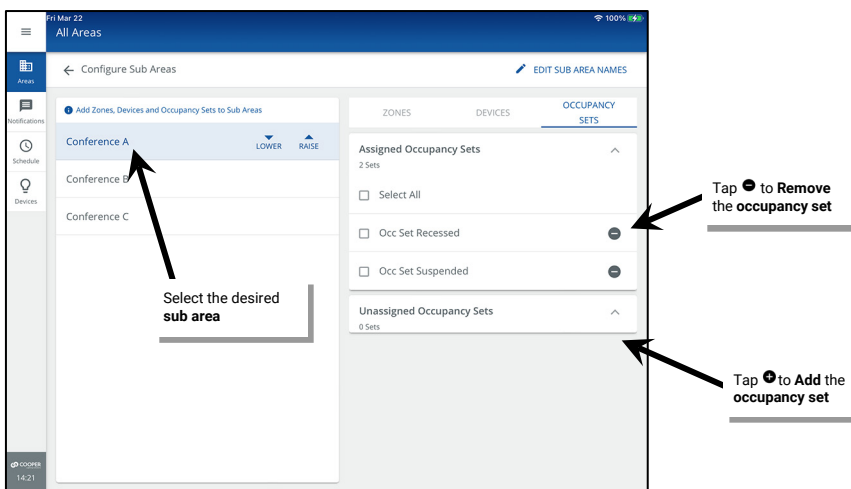
If an occupancy set assignment is removed from a sub area, the occupancy sensors in that sub area will not operate to control that sub area.

To make sure that used occupancy sets are assigned to the sub areas:

- 1: Open the WaveLinx App and login to the WaveLinx Area Controller as the administrator. In the **All Areas** list, tap the partitioned area name.
- 2: In the **All Sub Area** section, tap **EDIT SUB AREAS**.



- 3: Select the sub area to adjust and select the **OCCUPANCY SETS** tab. Tap **+** Add to assign an occupancy set to the sub area. Tap **-** Remove to unassign an occupancy set from the sub area. Make sure that all used occupancy sets are showing in the **Assigned** section.



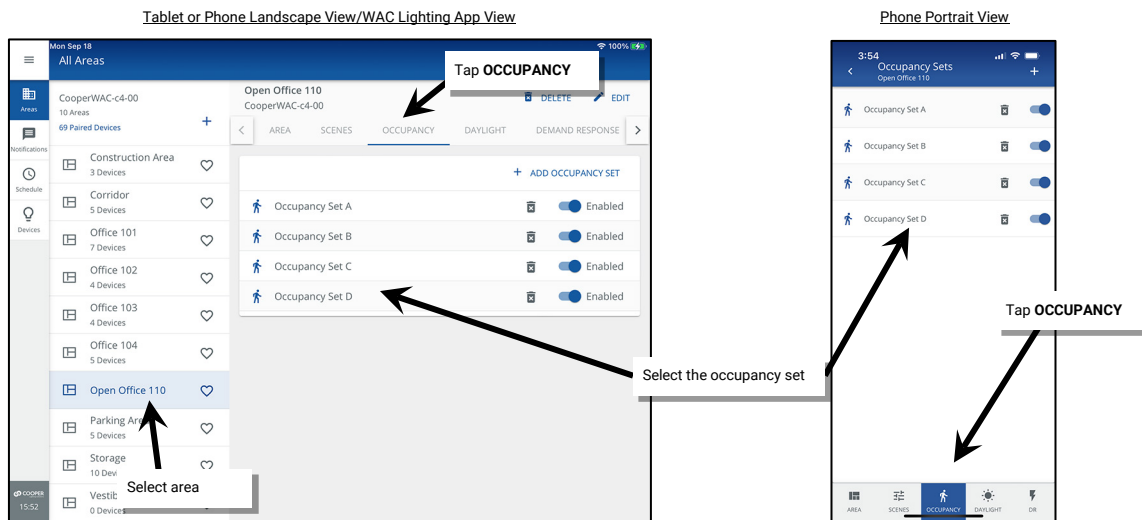
Associating Occupancy Sets for Overlapping or Cascading Control

Associate an occupancy set with other occupancy sets to overlap or cascade control. This is used in specific applications, typically in standard areas. This section will first show the steps of how to create an association and then will present two examples of how an association might be used.

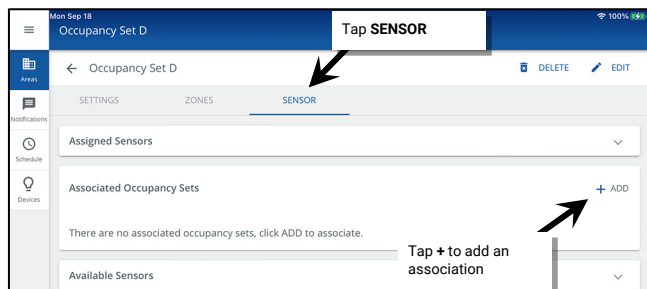
Before proceeding, create all required occupancy sets, making sure to assign the controlled zone and to assign the correct sensors.

To associate the occupancy set:

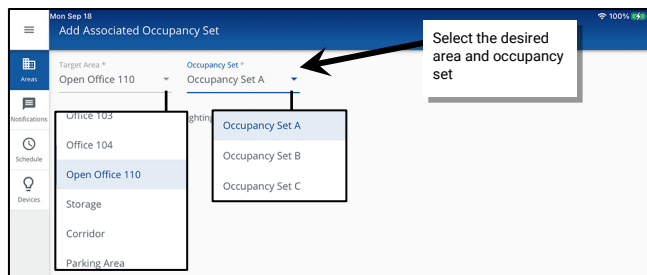
- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁷¹ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor sets, then tap on the **OCCUPANCY** option.
- 3: Tap the desired occupancy set. As a rule, start by modifying the occupancy set that needs to receive signals from other occupancy sets. For instance, if zone D needs to operate from sensors within its own occupancy set D and from sensors in occupancy set A, B and C, then modify occupancy set D.



4. Tap the **SENSOR** tab. Tap **+** in the **Associated Occupancy Sets** section.



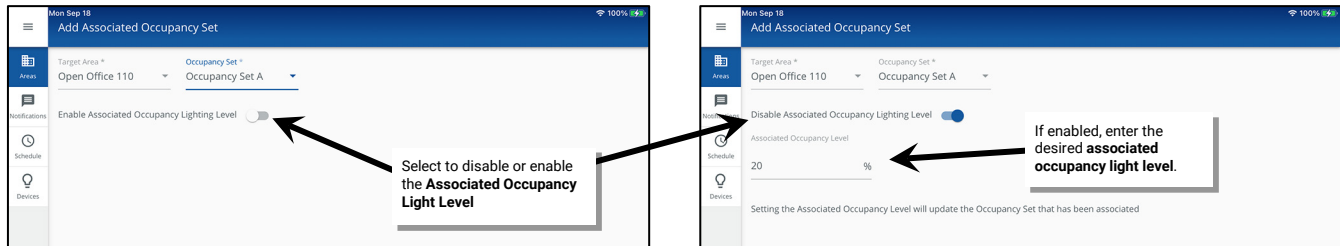
- 5: Select the area and then select the occupancy set that should pass commands to this one. For instance, if zone D/occupancy set D needs to respond to commands from occupancy set A, select occupancy set A.



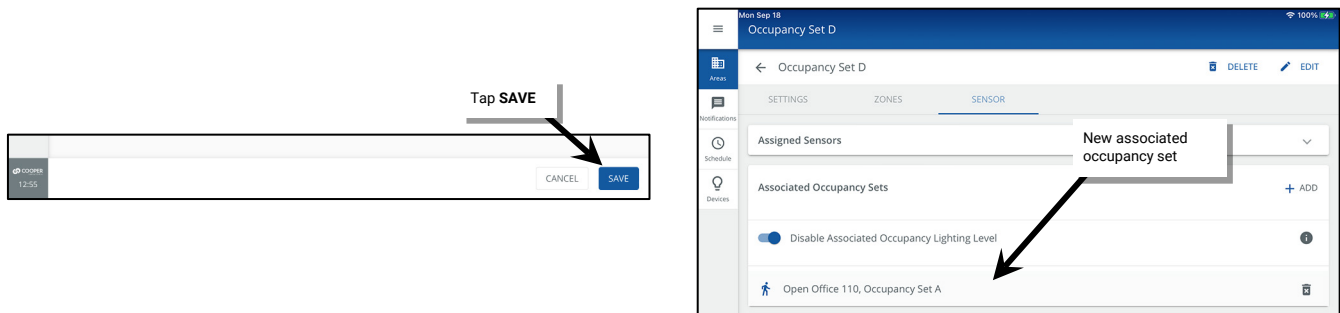
²⁷¹ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

6: Choose the desired **Associated Occupancy Light Level** settings.²⁷² The **Associated Occupancy Light Level** is the light level that the controlled zone(s) should go to when triggered from an associated occupancy set. For instance, in this example we have associated occupancy set A to occupancy set D. If there is currently no motion being detected in occupancy set D but an occupancy sensor in occupancy set A senses motion:

- If the **Associated Occupancy Light Level** is **disabled**: Occupancy set D's controlled zones will go to the occupied light level/scene defined for the occupancy set (occupancy set D).
- If the **Associated Occupancy Light Level** is **enabled**: Enter the desired light level (default 20%). Occupancy set D's controlled zones will go to the defined **Associated Occupancy Light Level** rather than the light level/scene defined for occupancy set D.



7: Tap **SAVE**, and the associated occupancy set should show in the **Sensors** tab.



Note: The **Associated Occupancy Light Level** is a single entry. If the **Associated Occupancy Light Level** is enabled, all associated occupancy sets will issue the same light level when occupancy is detected. The light level defined when associating the first occupancy set will be the default level displayed during other associations. If the light level is changed during a subsequent association, a warning message will be displayed asking if the previously set level should be updated.²⁷²

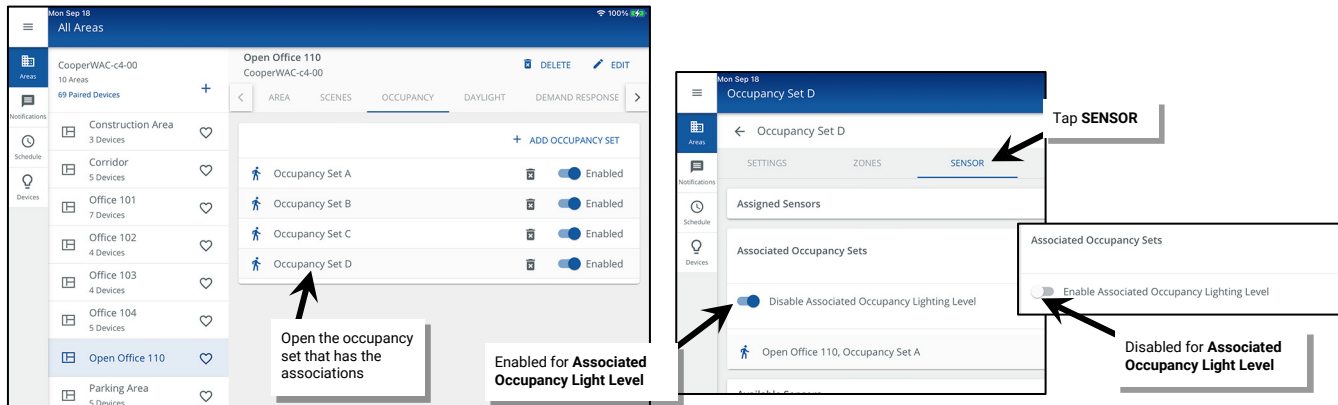


²⁷² **Associated Occupancy Light Level** settings are available when using WAC2 (Gen 2) firmware version 10.0.x.x and higher. This option is not available WAC Gen 2 firmware version 9.x.x.x. WAC Gen 2 firmware 9.x.x.x may be updated. If the WAC Gen 2 v9.x.x.x was using associated occupancy sets prior to the update, the associated occupancy light level will need to be programmed after the update is complete.

Enabling or Disabling the Associated Occupancy Light Level

Once an **Associated Occupancy Light Level** has been assigned, it can be easily changed between enabled or disabled. Open the area's occupancy set, and then navigate to the **Sensor** tab. Use the enable/disable switch at the top of the **Associated Occupancy Sets** list to switch between enabling or disabling the **Associated Occupancy Light Level**.²⁷³

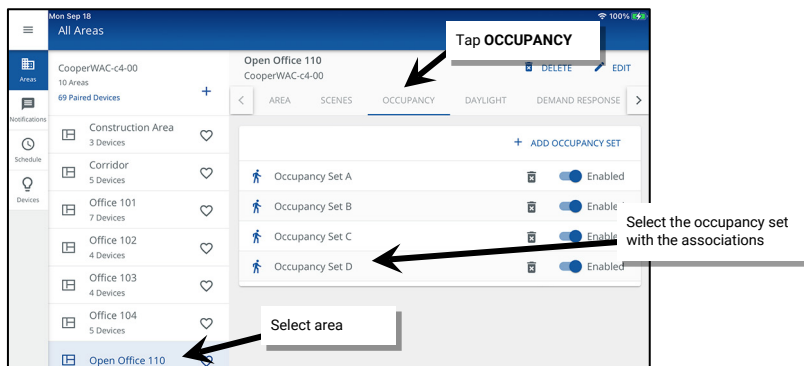
- If disabled, the occupancy set will issue its programmed occupied action if one of the associated occupancy sensors is occupied.
- If enabled, the occupancy set will issue the **Associated Occupancy Light Level** that was assigned when adding the associated occupancy sets.



Changing the Associated Occupancy Light Level

Once an **Associated Occupancy Light Level**²⁷³ has been assigned, it remains at that level unless a manual change is forced. To change the previously assigned **Associated Occupancy Light Level**:

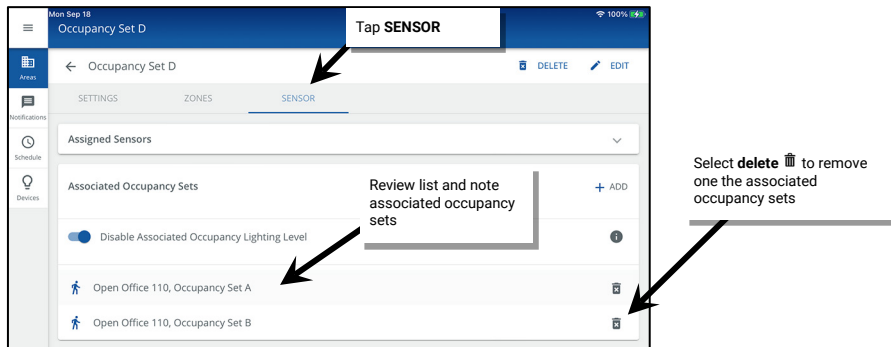
- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁷⁴ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor sets, then tap on the **OCCUPANCY** option.
- 3: Select the occupancy set that has the association(s).



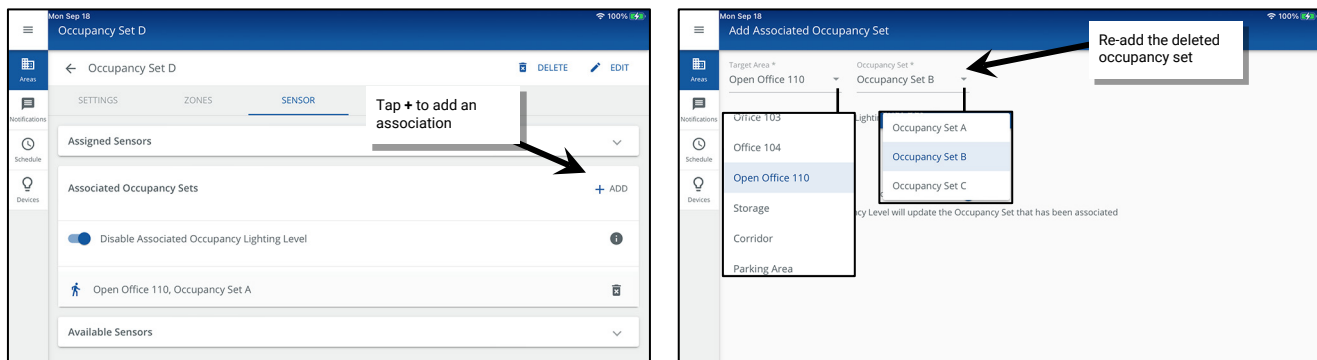
²⁷³ **Associated Occupancy Light Level** settings are available when using WAC2 (Gen 2) firmware version 10.0.x.x and higher. This option is not available in WAC Gen 2 firmware version 9.x.x.x. WAC Gen 2 firmware 9.x.x.x may be updated. If the WAC Gen 2 v9.x.x.x was using associated occupancy sets prior to the update, the associated occupancy light level will need to be programmed after the update is complete.

²⁷⁴ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

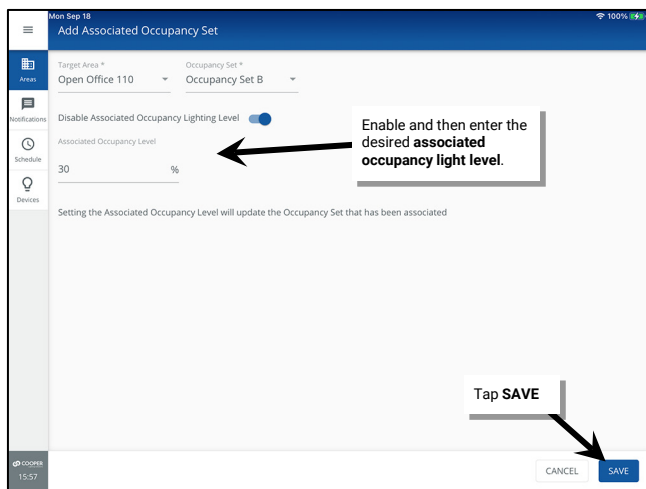
4: Open the **SENSOR** tab and review and note the currently associated sensors. Once noted, delete one of the occupancy set associations.



5: Next, tap + in the **Associated Occupancy Sets** section and add the deleted associated occupancy set back.



6: If not already enabled, enable the **Associated Occupancy Light Level**, define the new desired light level, and then tap **SAVE**.

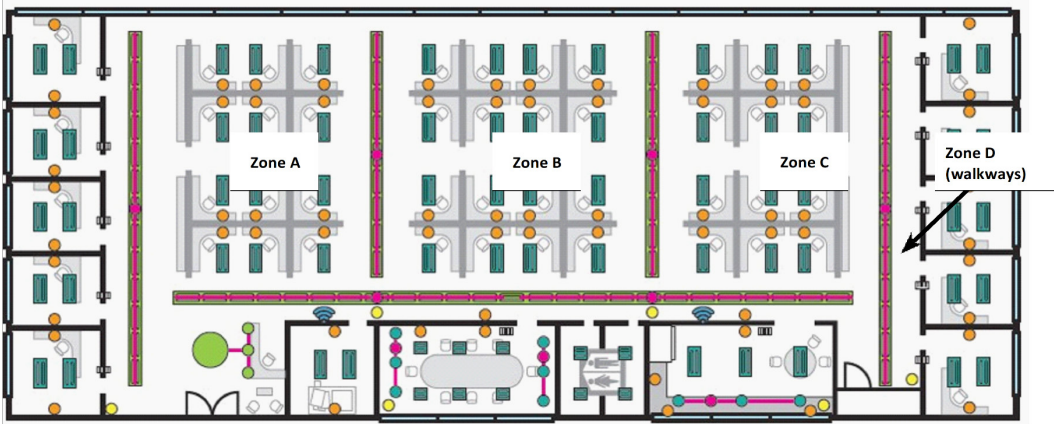


7: If the light level selected is different from the previously assigned level, confirm the change by tapping **YES I'M SURE** when prompted and then review the associated occupancy set list to ensure that the list is now correct.



Application Example 1: Open Office

In this example, an open office has been segmented into distinct occupancy control zones. The walkway path has also been placed in a unique control zone. The walkway path zone should turn ON if anyone enters or remains in the walkway path. If the walkway path is not actively occupied but there are occupants in any zone A, B or C, the walkway path zone should remain ON but dim to a 20% light level.²⁷⁵



Unique occupancy sets have been programmed in the area for each of the zones shown.

Mon Sep 18
All Areas

CooperWAC-c4-00
10 Areas
69 Paired Devices

AREA SCENES OCCUPANCY DAYLIGHT DEMAND RESPONSE

Construction Area
3 Devices

Corridor
5 Devices

Office 101
7 Devices

Office 102
4 Devices

Office 103
4 Devices

Office 104
5 Devices

Open Office 110

Parking Area
5 Devices

26 Devices Assigned

Zones
13 Devices

Zone A

Zone B

Zone C

Zone D

ADD ZONE

Mon Sep 18
All Areas

CooperWAC-c4-00
10 Areas
69 Paired Devices

AREA SCENES OCCUPANCY DAYLIGHT DEMAND RESPONSE

Construction Area
3 Devices

Corridor
5 Devices

Office 101
7 Devices

Office 102
4 Devices

Office 103
4 Devices

Office 104
5 Devices

Open Office 110

Parking Area
5 Devices

ADD OCCUPANCY SET

Occupancy Set A
Enabled

Occupancy Set B
Enabled

Occupancy Set C
Enabled

Occupancy Set D
Enabled

Associations are made between the occupancy sets controlling zone A, B, and C, to the walkway occupancy set D. (Remember, the general rule is to modify the occupancy set that needs to receive signals from other occupancy sets.) In this example, occupancy set D is associated with the other sets. During the association, the **Associated Occupancy Light Level** is set to **Enabled** and defined for a level of 20%.²⁷⁵

Mon Sep 18
Occupancy Set D

← Occupancy Set D

SETTINGS ZONES SENSOR

Assigned Sensors

Associated Occupancy Sets

Disable Associated Occupancy Lighting Level

Open Office 110, Occupancy Set A

Open Office 110, Occupancy Set B

Open Office 110, Occupancy Set C

Available Sensors

Mon Sep 18
Add Associated Occupancy Set

Target Area *
Open Office 110

Occupancy Set *
Occupancy Set C

Disable Associated Occupancy Lighting Level

Associated Occupancy Level
20 %

Setting the Associated Occupancy Level will update the Occupancy Set that has been associated

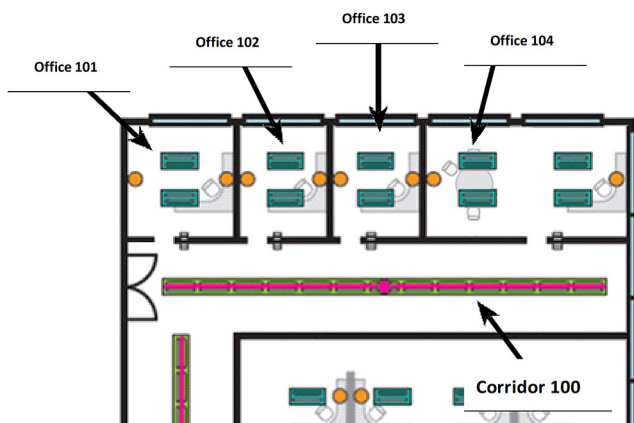
²⁷⁵ Associated Occupancy Light Level settings are available when using WAC2 (Gen 2) firmware version 10.0.x.x and higher.

With this programming, as an occupant enters the walkway zone D, only zone D will initially respond to its occupied command. As the occupant enters cubicle zone A, the lighting will respond in zone A. If the occupant remains in zone A and zone D is no longer sensing occupancy, zone A will remain in its occupied light level while zone D will dim to the **Associated Occupancy Light Level** of 20%. Zone D will remain at this light level unless:

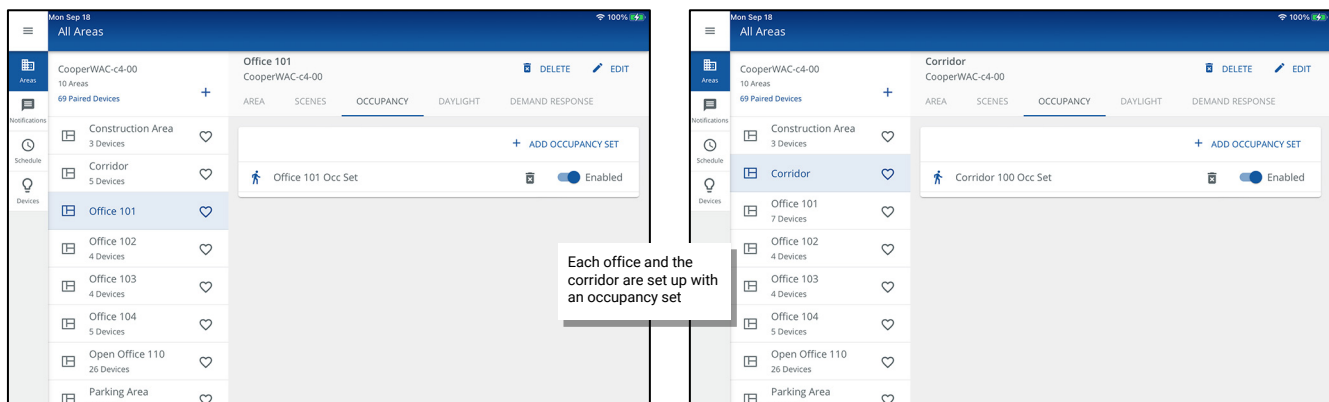
- occupancy is detected on zone D's occupancy sensors, triggering the occupied command for occupancy set D.
- all occupancy sensors in zone A, B, C and D are no longer detecting occupancy; triggering the unoccupied action for occupancy set D (and other occupancy sets).

Application Example 2: Common Area Hold-On Functionality

In this example, one area of the facility consists of private offices and a shared corridor. Each private office has been configured as an area and the shared corridor has been configured as a separate area. The corridor should turn ON if anyone enters the corridor and then should remain ON if there are occupants in any of the private offices. Optionally an **Associated Occupancy Light Level** could be applied to dim the corridor to a lower level if it is not actively occupied but occupants are present in the offices.²⁷⁶

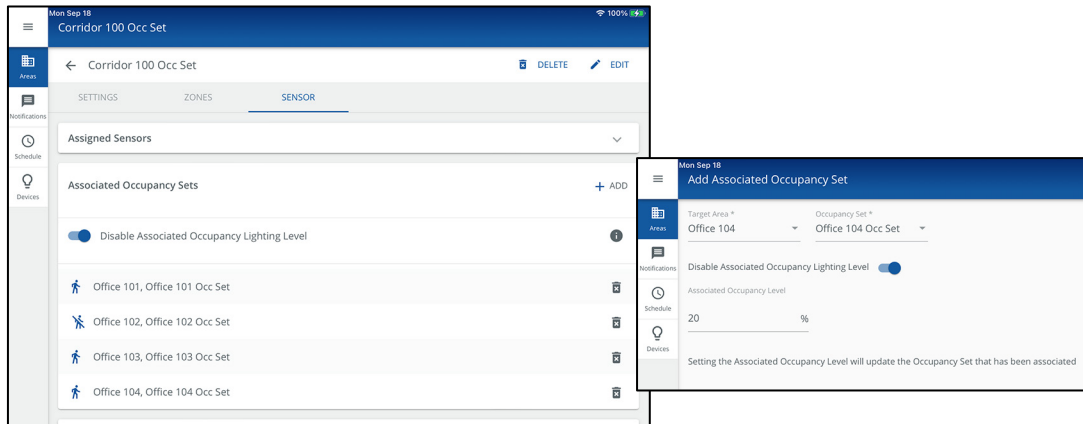


Areas have been created as shown. Each area contains one occupancy set that is defined with a scene command for occupied and unoccupied actions



²⁷⁶ **Associated Occupancy Light Level** settings are available when using WAC2 (Gen 2) firmware version 10.0.x.x and higher. Previous version WAC's will not show the **Associated Occupancy Light Level** option. If an association is made and an associated occupancy set issues a command, the lighting will respond with the programmed **occupied** action.

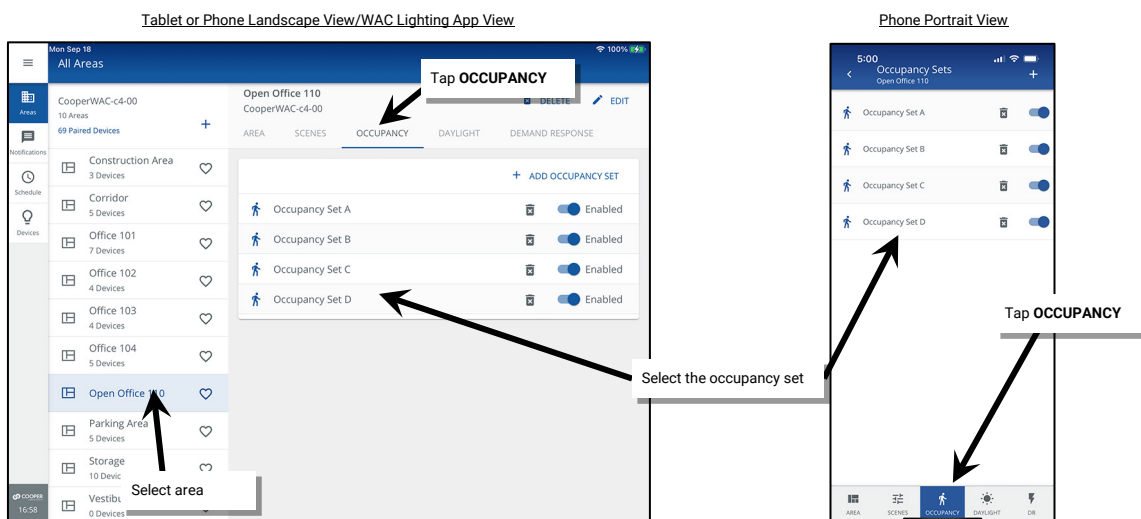
Associations are made between the occupancy sets controlling Offices 101, 102, 103, and 104, to the Corridor 100 occupancy set. (Remember, the general rule is to modify the occupancy set that needs to receive signals from other occupancy sets.) In this example, corridor 100's occupancy set will be associated with the others. Optionally, an **Associated Occupancy Light Level** could be enabled allowing the corridor to remain ON at a dimmed level if there is no direct occupancy in the corridor but there are occupants in the offices.




Removing Associated Occupancy Sets

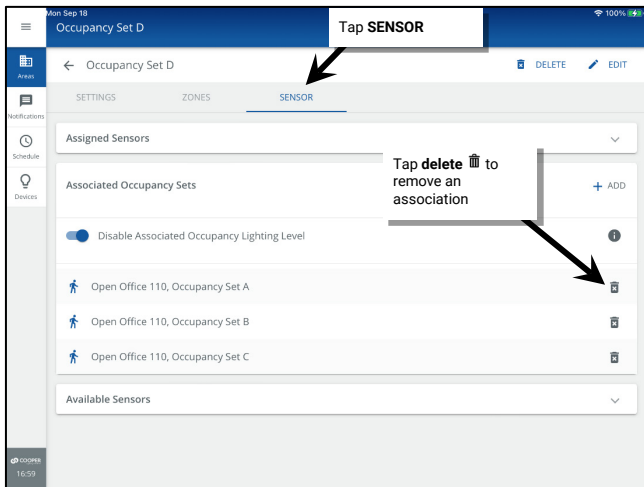
To remove an associated occupancy set:

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁷⁷ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor sets, then tap on the **OCCUPANCY** option.
- 3: Tap the occupancy set that has the associations.



²⁷⁷ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.


4. Tap the **SENSOR** tab. In the **Associated Occupancy Sets** section tap **delete**  in the row of the association to remove.



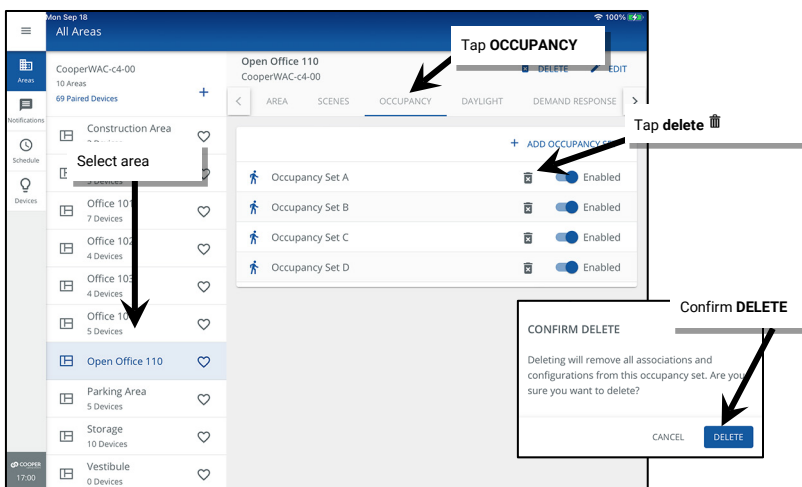
Deleting Occupancy Sets

It is possible to delete an occupancy set. Areas that do not have zones assigned to occupancy sets will respond solely to other devices assigned, i.e., wallstation commands, schedule event commands, and daylight set commands. To temporarily remove occupancy sensor control from an area without deleting the occupancy set, the occupancy set can be disabled. See “Enabling/Disabling Occupancy Set” on page 217 for further information.

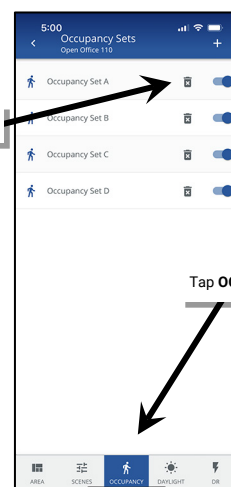
To delete an occupancy set:

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁷⁸ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the occupancy sensor set, then tap on the **OCCUPANCY** option.
- 3: Locate the desired occupancy set and then tap **delete** . Confirm the deletion when prompted.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



²⁷⁸ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Modifying Light Levels for Daylight Sensors

The WaveLinX system supports daylight sensor control for both interior and exterior applications. For outdoor applications, the focus is typically on ensuring that the fixtures turn OFF at dawn and turn ON at dusk, in some cases interacting with motion sensors that adjust light levels after dusk based on motion activity. For indoor applications, the focus is typically on trying to maintain a consistent light level in occupied areas by adjusting the amount of electric light needed based on the amount of daylight present in the space.

In both scenarios, the daylighting functionality may be disabled for fixtures that are not located in daylight zones or for any devices where daylight operation is not desired. Tunable white zones/devices cannot be assigned for daylight control.

Daylighting filters or inhibits the fixture's response to other control commands. A command from a wallstation button or occupancy sensor to go to 100% level will adjust the electric light level output to meet the calibrated daylight level (calibrated light level = 100%). A command from a wallstation button or occupancy sensor to go to 50% will adjust the electric light level to meet 50% of the calibrated daylight level. The actual electric light level output with these commands will vary based on the available amount of daylight and how much electric light needs to be contributed to maintain the commanded target. If the electric light has daylight dimmed to the minimum light level or dimmed to OFF (requires **DIM to OFF** to be enabled), lighting will remain at the minimum level or OFF if occupancy or wallstation commands are received, preventing unnecessary energy waste when adequate daylight is present.

Daylighting operation is not affected by partition walls being opened or closed in a partitioned area and operates independently of partitioning logic.

The WaveLinX system supports two different daylighting approaches, closed loop, and open loop.

- **Closed Loop Daylighting:** With the closed loop approach, the sensor controls only its connected light fixture. A closed loop sensor reads the reflected light level from the surface directly below it including light contributed by the electric light and the daylight that falls within the sensor's view. As daylight contribution increases, the sensor dims the electric light to keep the light level on the surface as consistent as possible. By default, as of WAC version 12.x.x.x and higher, the **DIM to OFF** feature is disabled.^{279,280} This means that the lighting will remain ON at the defined minimum dimming level if the surface light level is above the desired level. If the **DIM to OFF** feature is enabled and bright daylight causes the surface light level to be above the desired level even after the light level has been fully dimmed, after a period the fixture will dim to OFF.²⁸¹ As daylight contribution decreases and the surface light level lowers, the fixture will turn back ON/raise the amount of electric light accordingly. Most WaveLinX PRO and LV Integrated Sensors and WaveLinX PRO Tilemount Sensors can be used for closed loop daylight control.
- **Open Loop Daylighting:** WaveLinX PRO and CAT Ceiling Sensors can be used for open loop control in interior spaces along with most WaveLinX PRO and LV Ambient, PRO Industrial Integrated Sensors and PRO Tilemount Sensors.²⁸² The WaveLinX PRO Outdoor Lighting Control Module and WaveLinX PRO Outdoor Integrated Sensors can be used for open loop daylight control in exterior spaces.²⁸³ Sensor placement is critical with the open loop approach. With open loop daylight control, the sensor is placed in a spot that is optimal for sensing daylight contribution while minimizing the sensor's view of the electric light in the controlled area or self-calibrates during the setup process to learn to filter out the attached fixture's electric light output. A correlation is then made between the daylight level viewed by the sensor and the desired electric light level output, adjusting how much the sensor dims the electric light in response to daylight (adjusting the gain). The sensor adjusts the electric lighting as daylight contribution increases and decreases. By default, as of WAC version 12.x.x.x and higher, the **DIM to OFF** feature is disabled.^{279,280} The lighting will remain ON at the defined minimum dimming level if the daylight is very bright. If the **DIM to OFF** feature is enabled and enough daylight is present, the lighting will turn OFF.²⁸⁴

Because the sensor views or interprets daylight contribution and is less affected by changes in the electric light, the sensor can control multiple zones of fixtures. In interior applications, one sensor can control different zones at different light levels. This is a common approach where primary daylight zones next to the windows dim more aggressively than secondary daylight zones located further away. Assigning a zone to an open loop daylight set will automatically disable closed loop daylighting for any WaveLinX PRO and LV Integrated Sensors or WaveLinX PRO Tilemount Sensors that are connected to fixtures in that zone. If using open loop control in a partitioned space, ensure that the partition wall position does not cause shadow such that some fixtures in the daylight zone see diverse levels of daylight contribution. If this is an issue, divide into smaller daylight zones with a zone on each side of the partition with a sensor located within each partition space.

²⁷⁹ WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

²⁸⁰ Ambient Integrated Sensor model SWPD1 (IS) and Low-Voltage Fixture Integrated Sensors (IS-LV) will automatically have **DIM to OFF** enabled and will not offer the ability to disable this feature.

²⁸¹ When the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will turn lighting OFF. Lighting will be turned back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated light level for longer than 30 seconds.

²⁸² WaveLinX Integrated Sensors, Low-Voltage Fixture Integrated Sensors and Tilemount Sensor use for open loop control is contingent on the use of WAC2 (Gen 2) v10.0.x.x and higher firmware. Low-Voltage Integrated Sensors do not support this feature.

²⁸³ WaveLinX Outdoor Integrated Sensors assignment for open loop control is contingent on the use of WAC2 (Gen 2) v10.0.x.x and higher updated device firmware.

²⁸⁴ For WaveLinX Integrated and Tilemount sensors, when the measured light exceeds 150% of the calibrated gain for more than 30 minutes, the sensor will turn lighting OFF. Lighting will be turned back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated gain for longer than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated gain for longer than 30 seconds.

For WaveLinX Outdoor Lighting Control Modules, Lighting will turn OFF if the light level has exceeded 65 lux for a period of 180 seconds (3 minutes). Lighting will turn ON if the light level falls below 16 lux for a period of 30 seconds.

Modifying Closed Loop Daylighting Control

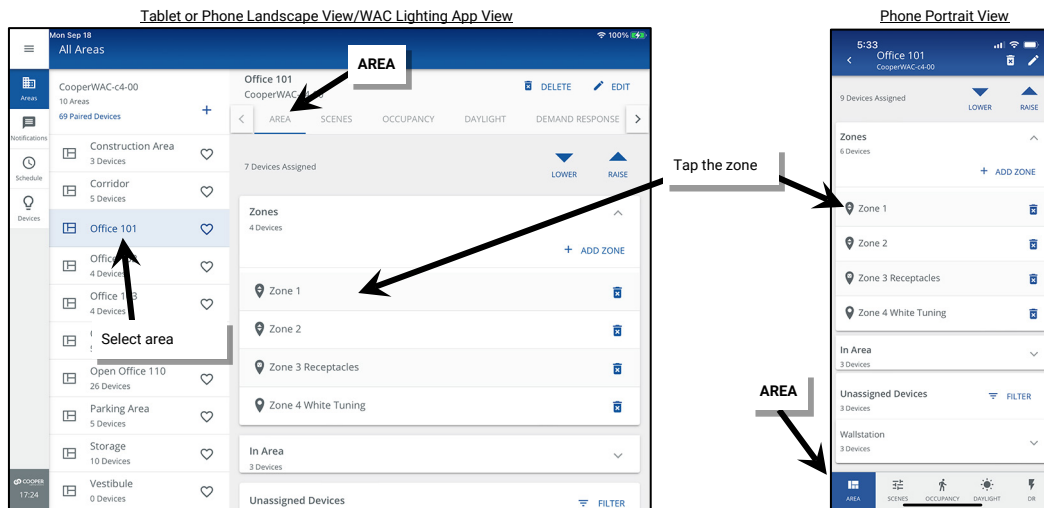
This section focusses on the use of closed loop sensor control for WaveLinx PRO Ambient, Industrial, and Outdoor Integrated Sensors, WaveLinx LV Fixture Integrated Sensors, and WaveLinx PRO Tilemount Sensors. This includes details on how to:

- Identify and rename the daylight set being used for a specific device
- Enable or disable daylighting for closed loop sensors
- Calibrate ALL closed loop sensors in the area
- Calibrate an individual closed loop sensor
- Enable or disable **DIM to OFF** for closed loop sensors

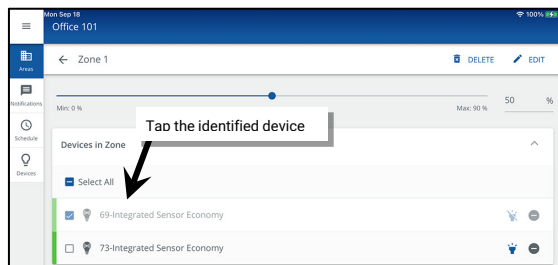
Identifying and Renaming the Daylight Set Being Used for a Specific Device

Before disabling or calibrating devices, make certain to identify the daylight set being used to control a specific device. The daylight set can be renamed to be easily identified in the WaveLinx App.

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁸⁵ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the device and then tap on the zone that the device is located within.

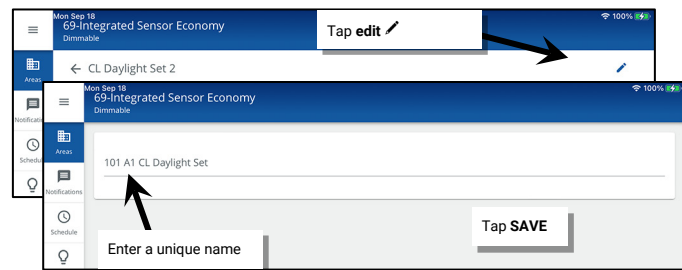
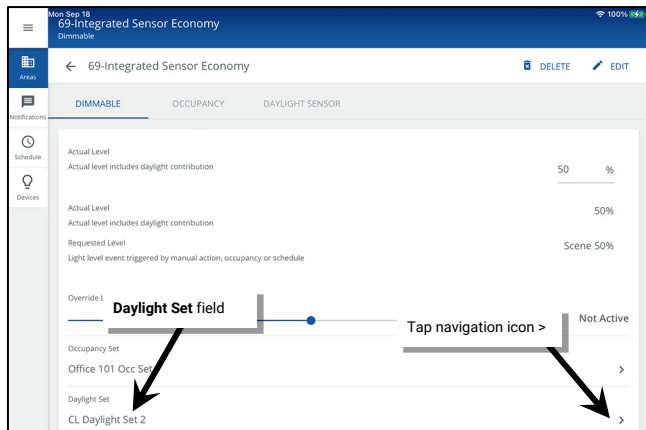


- 3: If there are multiple fixtures in the zone, identify the correct device using the device's identification method. For partitioned areas, the devices assigned sub area will be listed under the device name to help with identification. Refer to the device reference sheets starting on page 14 for details on the identification methods for that specific device. Once the device is identified, tap on the device to open it.



²⁸⁵ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

- 4: In the device's settings page, tap the **Daylight Set** right arrow > to open the daylight set and then tap **EDIT** ✎ to rename the daylight set with a unique descriptive name (or note the current name). Tap **SAVE**.



- 5: Repeat for all closed loop daylight devices in the area.

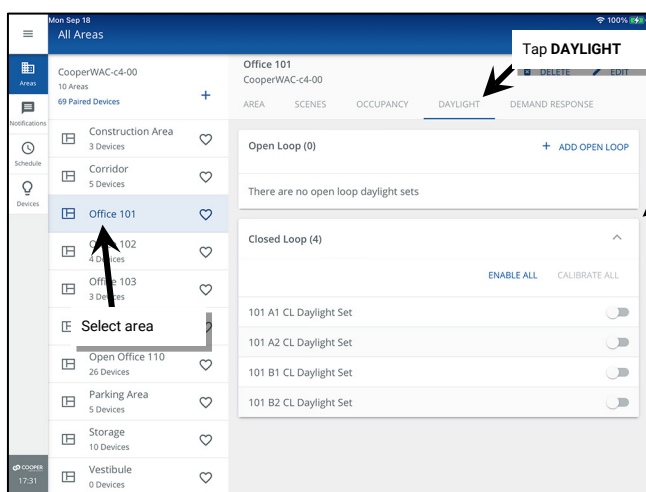
Enabling or Disabling Daylighting for Closed Loop Sensors

Daylighting can be enabled or disabled for closed loop sensors.²⁸⁶ For a WAC Gen2 with version 14.x.x.x, the default programming disables closed loop daylighting until daylighting is configured. Manually enable the sensor's daylight set to allow daylight dimming to begin.

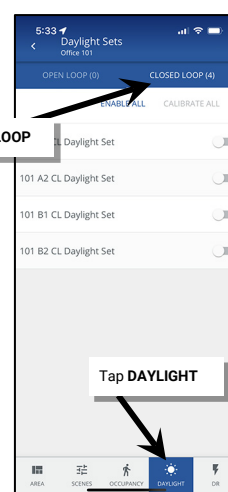
Before proceeding, identify each sensor's daylight set using the instructions starting on page 233.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁸⁷ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the desired area, and then select the **DAYLIGHT** tab. Expand or tap the **CLOSED LOOP** section.

Tablet or Phone Landscape View/WAC Lighting App View



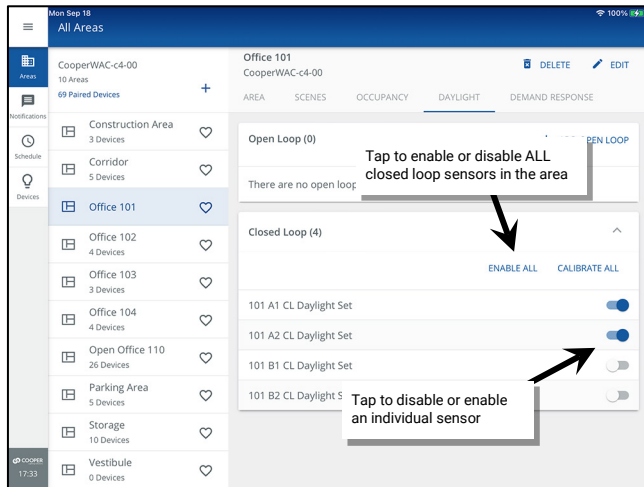
Phone Portrait View



²⁸⁶ The WaveLinX PRO IR Remote can also be used for adjusting this feature. Refer to the WaveLinX PRO IR Remote User Guide for details on using this feature.

²⁸⁷ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

- 3: In the list of closed loop sets, tap the slider next to the identified daylight set to switch between enabled (blue) and disabled (gray). If all closed loop sets should be affected use the **Disable All/Enable All** selection (this will automatically change to the **Disable All** function if all daylight sets are enabled).



Calibrating all Closed Loop Daylight Sensors in an Area

In the WaveLinx system, WaveLinx PRO Ambient, Industrial, and Outdoor Integrated Sensors, WaveLinx LV Fixture Integrated Sensors, and WaveLinx PRO Tilemount Sensors can use closed loop daylighting to directly control the physically connected load. Each daylight sensor is automatically assigned to a unique daylight set.

Each sensor has default factory settings that provide closed loop daylighting to a reasonable light level. Daylight sensor operation begins once the daylight set is enabled.

The default factory settings cannot account for all factors that affect the light level measured at the sensor. The sensor location is not at the surface but at the fixture and therefore its reading of reflected light levels is affected by many variables, including the mounting height and the reflective properties of the surface.

For many applications, no calibration is necessary. **Calibration of sensors is recommended only in the cases where the performance of factory set parameters is unacceptable including:**

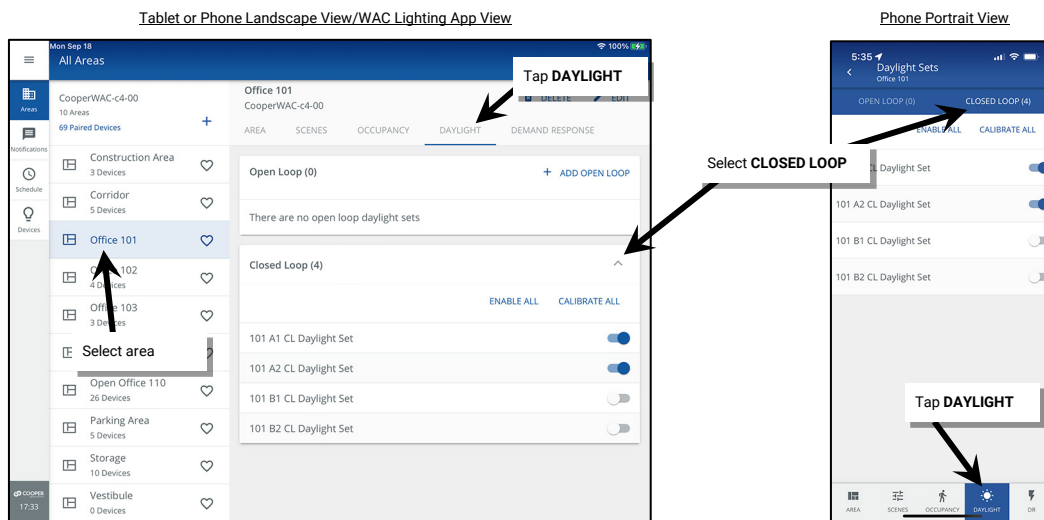
- The light level at the surface is consistently too low or too high during periods of moderate daylight.
- The lighting does not turn OFF during periods of bright sunshine (sunrise for outdoor applications).
- The lighting does not turn ON during dark periods (sunset for outdoor applications).

To calibrate the sensors:

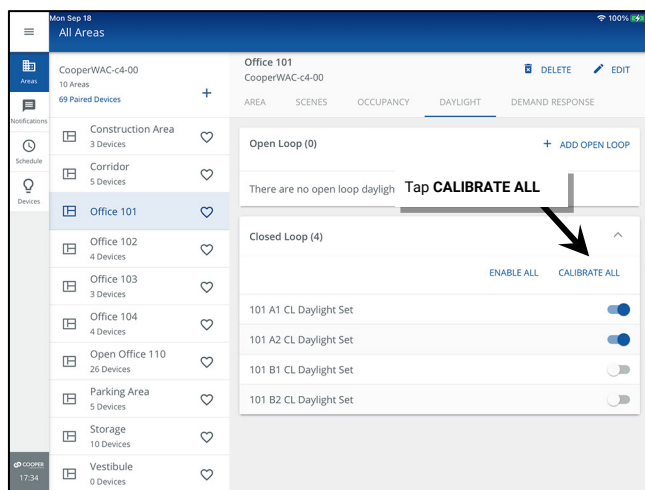
If calibration is necessary, **for best results, calibrate and adjust the target level of all the sensors within one area at the same time using the WaveLinX App's Calibrate All function.** In this method, all the sensors within the space (area) will be calibrated together, accounting for the possible effects of light overlap from adjacent fixtures. If necessary, individual sensor calibration can be used to fine-tune settings.²⁸⁸

IMPORTANT: Before calibration, review the recommendations for when and how daylight calibration should be performed for the device type being used. See the “WaveLinX Device Reference Sheets” beginning on page 14.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁸⁹ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the daylight sets, and then select the **DAYLIGHT** tab. Expand or tap the **CLOSED LOOP** section.



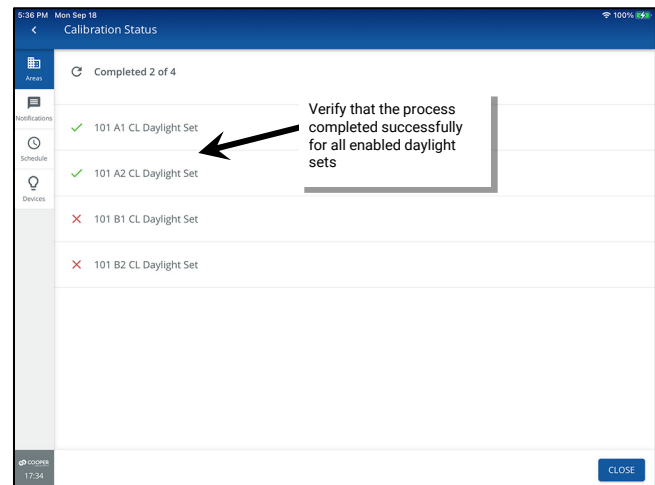
- 3: Tap the option to **CALIBRATE ALL**. All **enabled** closed loop daylight set lighting devices will go to their brightest light output.



²⁸⁸ The WaveLinX PRO IR Remote can also be used for adjusting this feature. Refer to the WaveLinX PRO IR Remote User Guide for details on using this feature.

²⁸⁹ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

- 4: Use the slider bars to adjust the electric light to the correct level for each controlled device as advised in the **Daylight Calibration Details** section of device's reference sheet.
- 5: Next, enter the light meter's average surface reading into the **Work Surface** field, changing the units to lux or foot-candles (fc) as needed (The reading should be similar under each fixture if fixtures are properly adjusted). This allows the WaveLinX App's displayed sensor reading to more closely approximate the values that would be read at the work surface.
- 6: Tap **CALIBRATE**. The WaveLinX App will show whether calibration was successful for all sensors. If failures are reported for sensors that are enabled, repeat the calibration procedure.



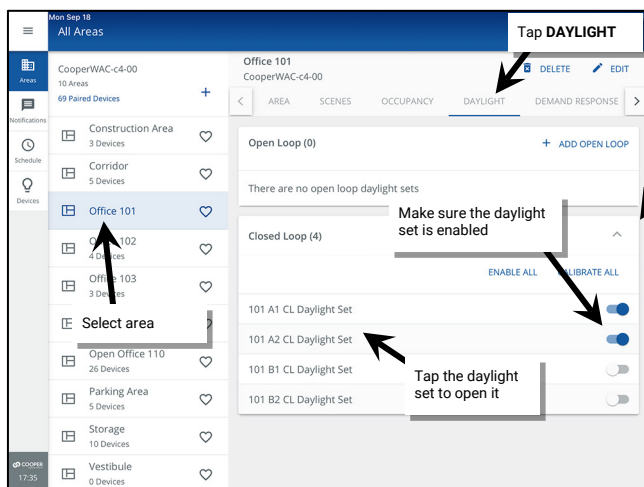
Calibrating a Single Closed Loop Daylight Sensor

It is also possible to fine-tune the closed loop settings for an individual sensor.²⁹⁰

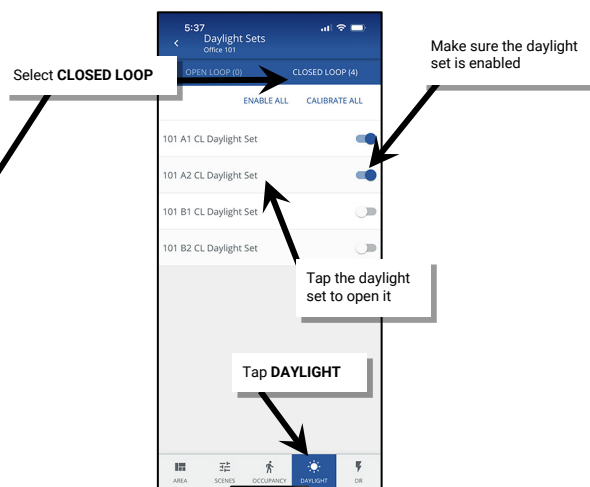
IMPORTANT: Before calibration, review the recommendations for when and how daylight calibration should be performed for the device type being used. See the “WaveLinX Device Reference Sheets” beginning on page 14.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App²⁹¹ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the daylight set, and then select the **DAYLIGHT** tab. Open or tap on the **CLOSED LOOP** section, make certain that the daylight set is enabled, and then tap the row for the desired daylight set.

Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



²⁹⁰ The WaveLinX PRO IR Remote can also be used for adjusting this feature. Refer to the WaveLinX PRO IR Remote User Guide for details on using this feature.

²⁹¹ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

- 3: Use the slider bar to adjust the electric light to the correct level for the controlled device as advised in the **Daylight Calibration Details** section of device's reference sheet.
- 4: Next, enter the light meter's average surface reading into the **Work Surface** field, changing the units to lux or foot-candles (fc) as needed. This allows the WaveLinX App's displayed sensor reading to more closely approximate the values that would be read at the work surface. If desired, enable or disable the daylight set to **DIM to OFF** (see "Enabling/Disabling DIM to OFF Capability for Closed Loop Daylight Sets" on page 238 for further details).^{292,293}
- 5: Tap **CALIBRATE**. The WaveLinX App should briefly display a success message.



Quick Links for Common Questions

- After I calibrated the sensors, I noticed that the light output is different for each fixture. Why is this occurring? See the answer on page 363.
- The lights over my desk appear to adjust to different dimming levels even though the daylight does not appear to change. Why is this happening? See the answer on page 363.
- My wallstation or occupancy sensor only seems to work at night. Why is this occurring? See the answer on page 364.
- My exterior lighting does not all respond ON or OFF at the same time. Why is this occurring? See the answer on page 363.

Enabling/Disabling DIM to OFF Capability for Closed Loop Daylight Sets

As of WaveLinX Area Controller version 12.x.x.x and higher, the ability for daylighting to **DIM to OFF** is selectable.^{294,295} **DIM to OFF** is disabled by default. This means that the lighting will remain ON at the defined minimum dimming level if the light level is above the calibrated level.

If **DIM to OFF** is manually enabled and bright daylight causes the surface light level to be above the desired level even after the light level has been fully dimmed, after a period the fixture will dim to OFF.²⁹⁶ As daylight contribution decreases and the surface light level lowers, the fixture will turn back ON/raise the amount of electric light accordingly.

The **DIM to OFF** feature can be enabled/disabled for any closed loop daylight set:

²⁹² WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

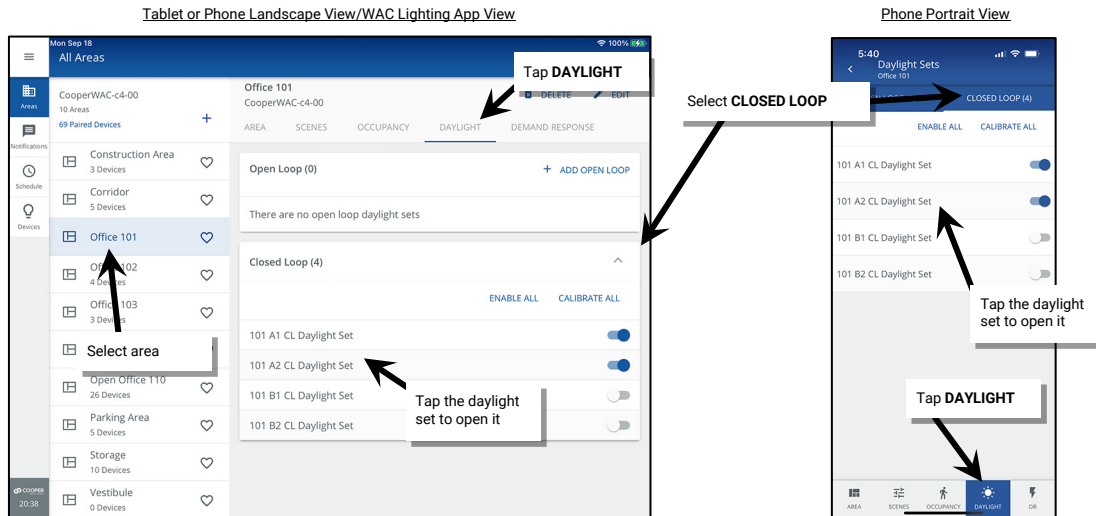
²⁹³ Ambient Integrated Sensor model SWPD1 (IS) and Low-Voltage Fixture Integrated Sensors (IS-LV) will automatically have **DIM to OFF** enabled and will not offer the ability to disable this feature.

²⁹⁴ WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

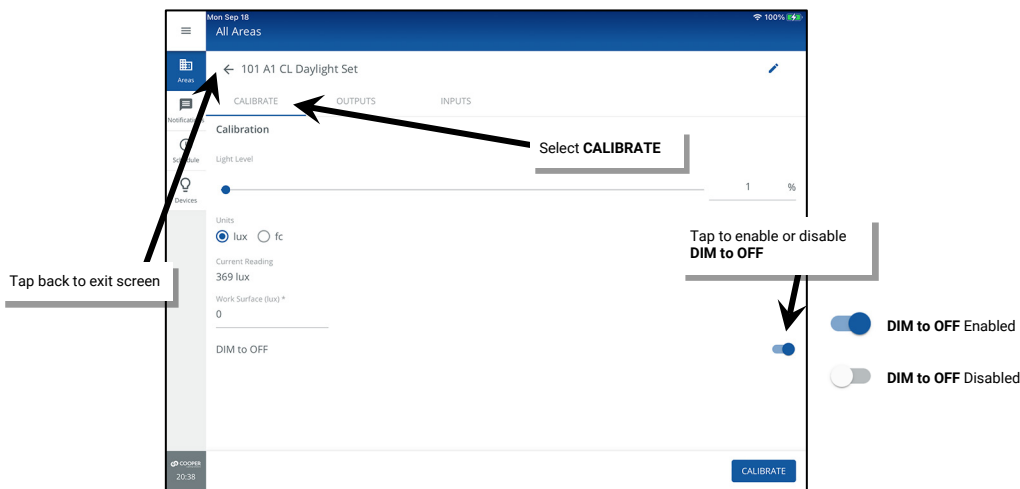
²⁹⁵ Ambient Integrated Sensor model SWPD1 (IS) and Low-Voltage Fixture Integrated Sensors (IS-LV) will automatically have **DIM to OFF** enabled and will not offer the ability to disable this feature.

²⁹⁶ When the measured light level exceeds 150% of the calibrated light level for more than 30 minutes, the sensor will turn lighting OFF. Lighting will be turned back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated light level for more than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated light level for longer than 30 seconds.

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App²⁹⁷ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the daylight set, and then select the **DAYLIGHT** tab. Open or tap on the **CLOSED LOOP** section, make certain that the daylight set is enabled, and then tap the row for the desired daylight set.



- 3: At the bottom of the **CALIBRATE** screen, tap the **DIM to OFF** toggle button to enable (ON) or disable (OFF) the **DIM to OFF** capability.
- 4: Tap the back button at the top of the screen to exit the screen. The setting will be updated. Repeat for additional daylight sets if needed.
DO NOT TAP CALIBRATE UNLESS ALSO CALIBRATING THE SENSOR AT THIS TIME.



²⁹⁷ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Configuring Open Loop Daylighting Control

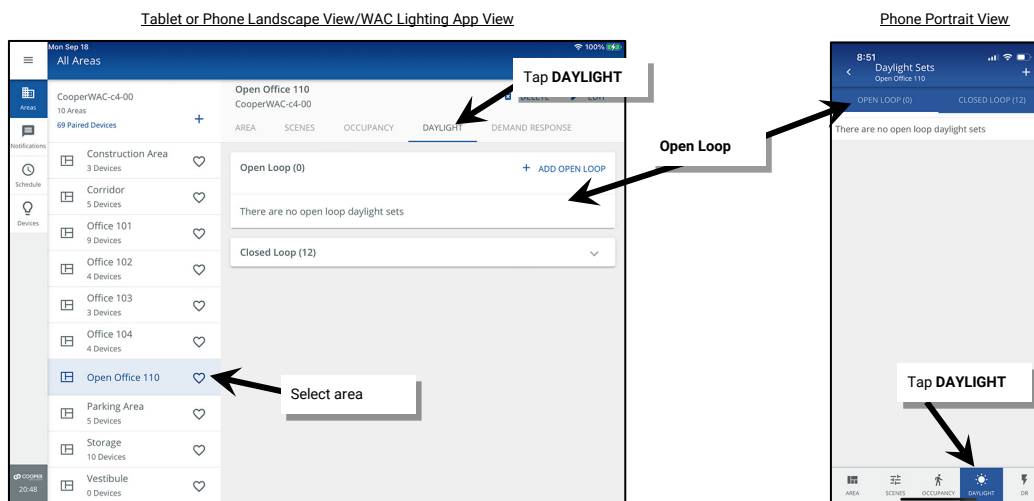
This section focuses on the use of open loop daylighting control. In the WaveLinX system, open loop daylighting is not part of the default programming and must be specifically configured. This section focusses on the configuration of open loop control by WaveLinX PRO and CAT Ceiling Sensors, WaveLinX PRO Ambient, Industrial and Outdoor Integrated Sensors, WaveLinX PRO Tilemount Sensors and the WaveLinX PRO Outdoor Lighting Control Module.²⁹⁸ This includes details on:

- Creating and naming an open loop daylight set
- Assigning the zones that should be controlled by the daylight set²⁹⁹
- Assigning the sensor to the open loop daylight set
- Adjusting the amount of lighting response
- Enable or disable **DIM to OFF** for an open loop daylight set
- Testing daylight sensor operation
- How to control zones at different light levels from the same daylight sensor

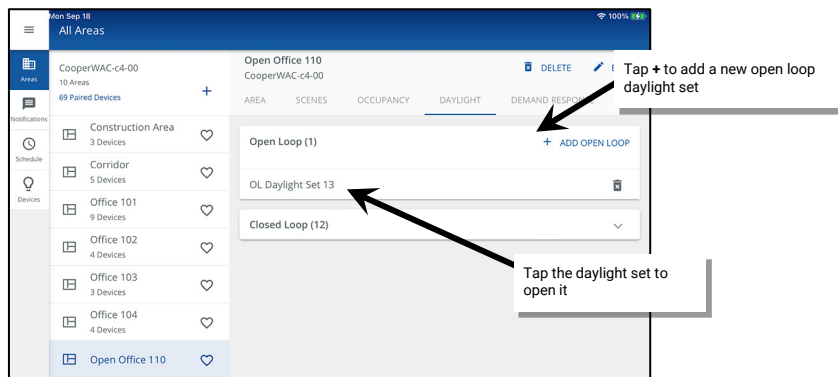
Step 1: Creating and Naming an Open Loop Daylight Set

One area can have up to 6 open loop daylight sets. To use open loop daylight control, first create an open loop set.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³⁰⁰ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that will be controlled by the open loop daylight set, and then select the **DAYLIGHT** tab and make sure the **Open Loop** section is visible.




- 3: Tap **+** to add an open loop daylight set, and then tap the new daylight set to open it.

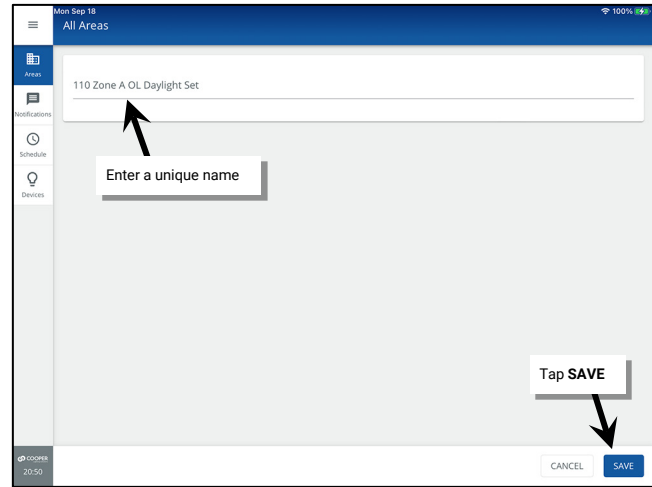
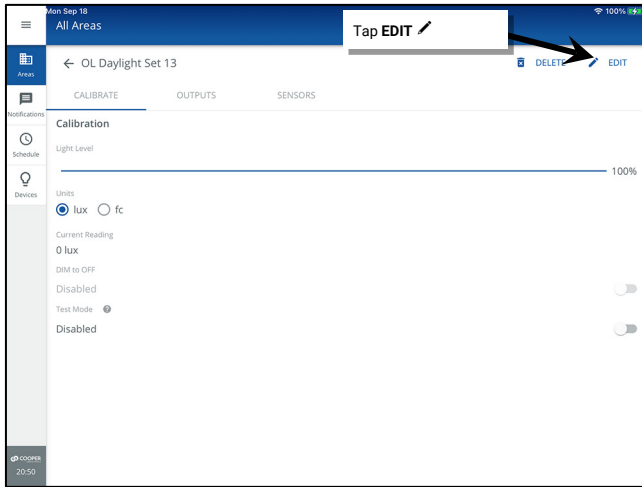


²⁹⁸ WaveLinX Integrated Sensor and Tilemount Sensor assignment for open loop control is contingent on the use of WAC2 (Gen 2) v10.0.x.x and updated device firmware. Low-Voltage Integrated Sensors do not support this feature.

²⁹⁹ If fixtures in the zones that are assigned to open loop daylight sets contain Integrated or Tilemount Sensors, closed loop daylighting will automatically be disabled for these sensors. White tuning zones/devices cannot be assigned to an open loop daylight set.

³⁰⁰ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

4: Tap **EDIT**  to rename the daylight set with a unique descriptive name. Tap **SAVE**.

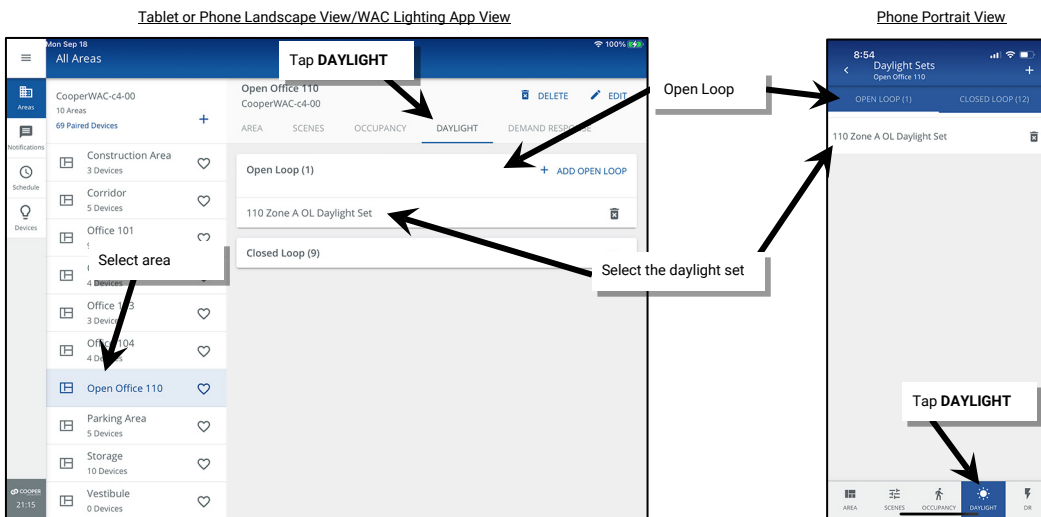


Continue to the next steps to assign the controlled zones, and to assign and adjust the lighting response to the sensor.



Step 2: Assigning the Zones to the Open Loop Daylight Set

Once the open loop daylight set is created, assign the zones that need to respond to the daylight signals. Although individual fixtures may be assigned, use the zones whenever possible to simplify programming. If dealing with a partitioned space, sub zones are not available for assignment. If the sub zone will be controlled by a different sensor or open loop daylight set than other sub area sub zones, the individual fixtures for the sub zone should be assigned.

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App³⁰¹ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that will be controlled by the open loop daylight set, and select the **DAYLIGHT** tab.
- 3: In the **Open Loop** section, select the previously created open loop daylight set.

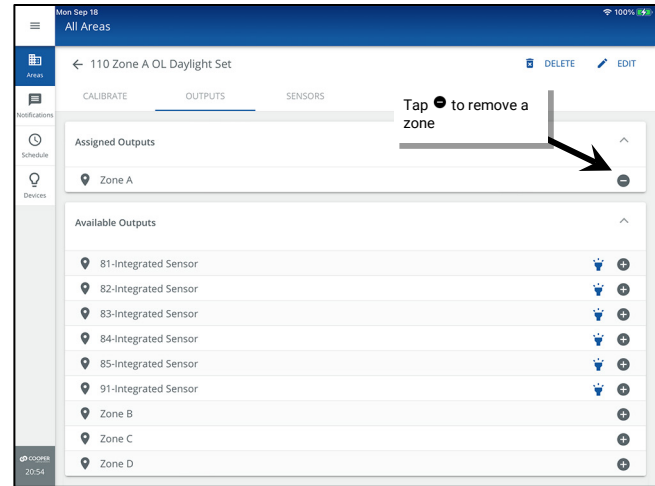
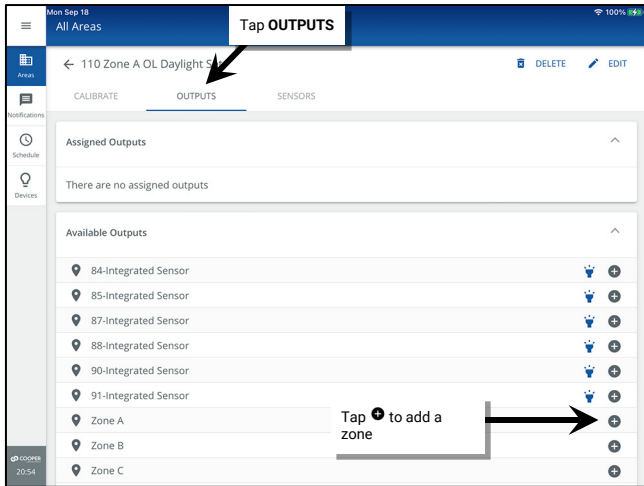


4: Select the **OUTPUTS** tab and scroll to the bottom of the **Available Outputs** list where the zones are listed.

5: Tap **add**  to add the zone(s) that should be controlled by this daylight set.³⁰² Although individual fixtures may be assigned, use the zones whenever possible to simplify programming. To remove an assigned zone or output, in the **Assigned Outputs** section, tap on **remove** .

³⁰¹ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

³⁰² If more than one zone is assigned to the same daylight set, the assigned zones will daylight dim in the same manner. Zones defined with the white tuning type and their associated devices will not appear in this screen to prevent unintentional assignment.

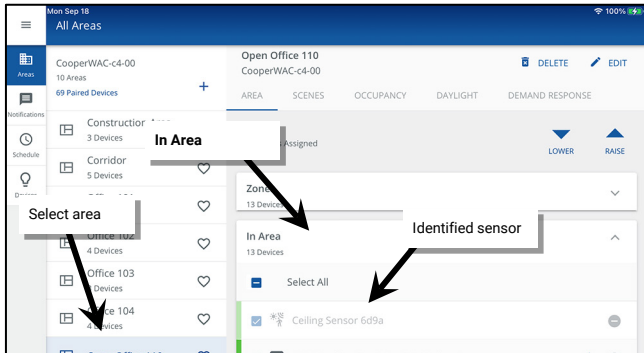


Continue to the next steps to assign and adjust the lighting response to the sensor.

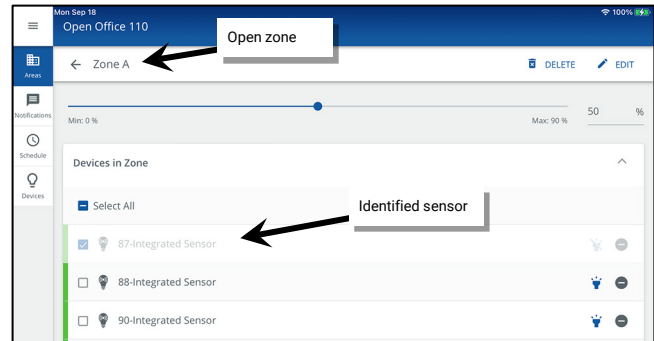
Step 3: Assigning a Sensor to the Open Loop Daylight Set

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³⁰³ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the device. If multiple sensors are within the area, only one will be used for the open loop daylight set. Identify the correct device using the device's identification method. Refer to the device reference sheets starting on page 14 for details on the identification methods for that specific device. WaveLinX PRO Integrated Sensors, Tilemount Sensors and WaveLinX PRO Outdoor Lighting Control Modules will be identified within the zone to which they are assigned.^{304,305} WaveLinX PRO and CAT Ceiling Sensors will be identified within the **In Area** section. Once identified, make note of the device's name/descriptor.

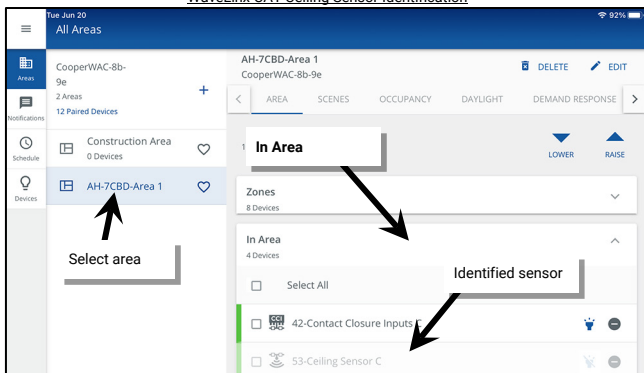
WaveLinX PRO Ceiling Sensor Identification



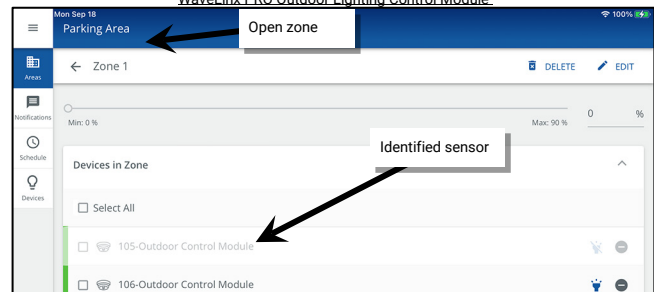
WaveLinX PRO Integrated Sensor or Tilemount Sensor Identification



WaveLinX CAT Ceiling Sensor Identification



WaveLinX PRO Outdoor Lighting Control Module

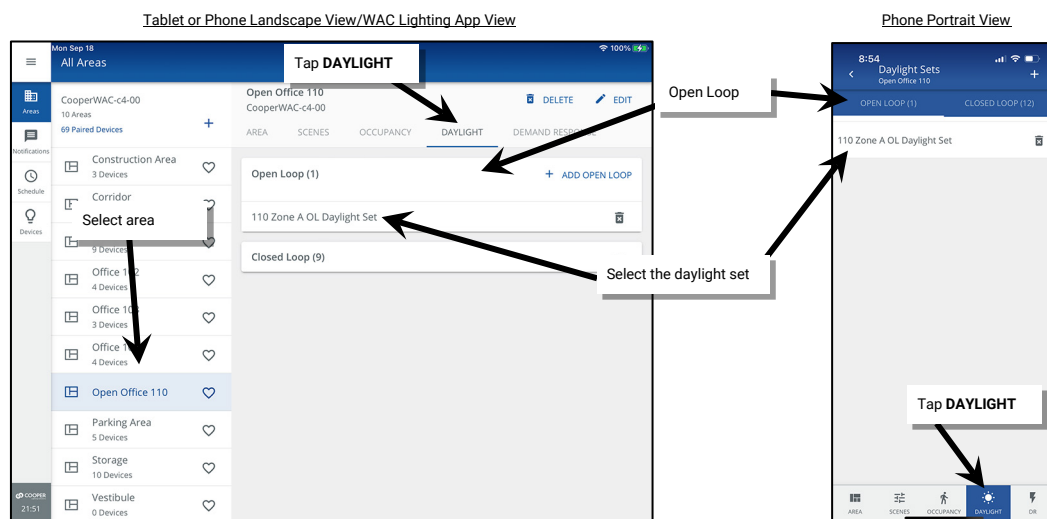


³⁰³ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.


³⁰⁴ WaveLinX Integrated Sensor and Tilemount Sensor assignment for open loop control is contingent on the use of WAC2 (Gen 2) v10.0.x.x and higher updated device firmware. Low-Voltage Integrated Sensors do not support this feature.

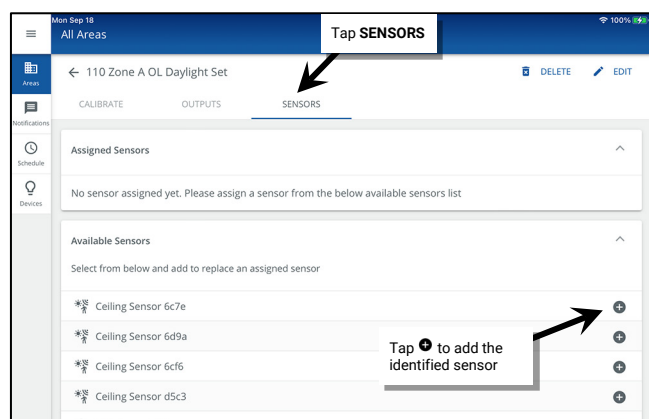
³⁰⁵ Integrated and Tilemount Sensors can alternatively be reverse identified within the open loop daylight set's **Sensors** tab.

3: Next, select the **DAYLIGHT** tab and in the **Open Loop** section, select the previously created open loop daylight set.



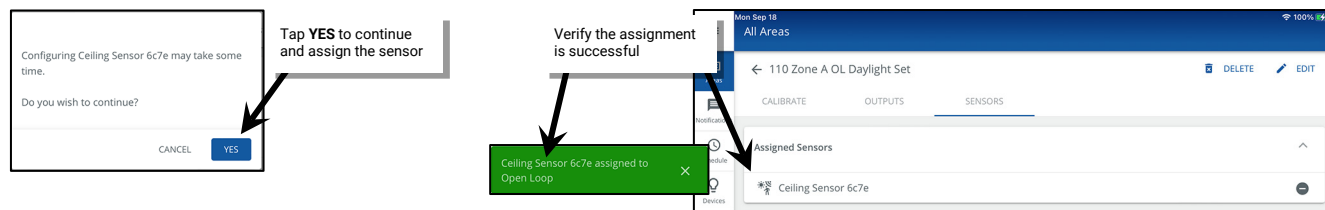
4: Select the **SENSORS** tab and scroll to the bottom of the **Available Sensors** list.

5: Tap on **add**  to add the previously identified sensor.³⁰⁶



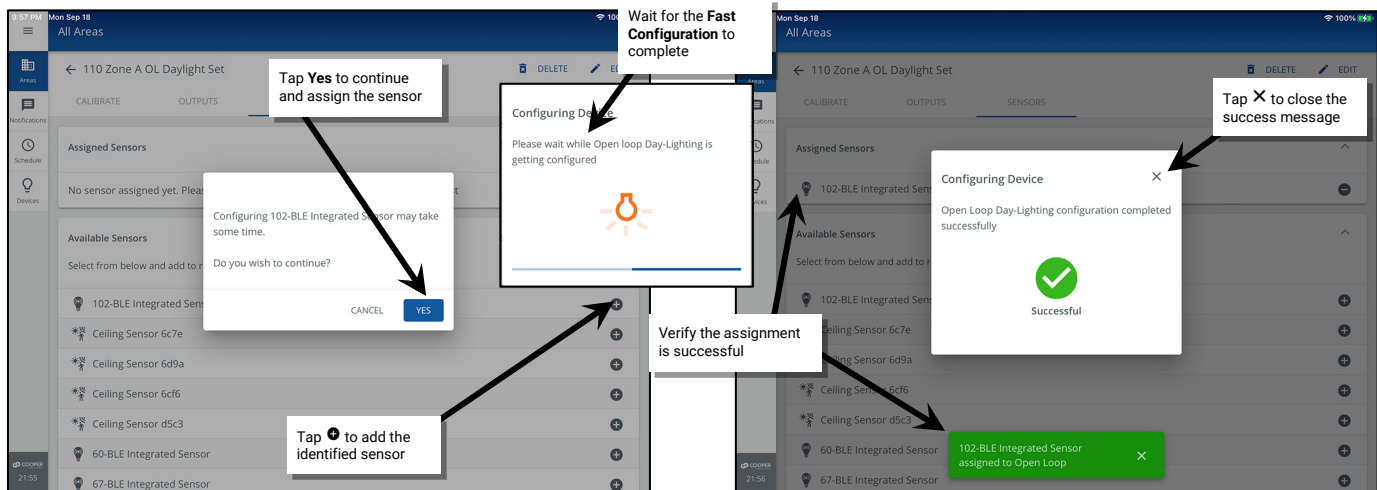
6: The next screens and steps will vary depending on the type of sensor selected:

- **WaveLinx PRO and CAT Ceiling Sensor or WaveLinx PRO Outdoor Control Module:** When prompted, select **YES** to continue and confirm that the sensor is successfully assigned.

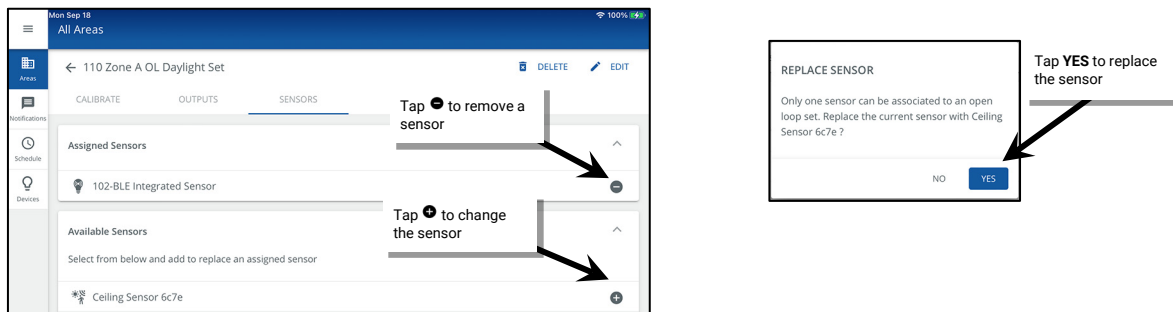


³⁰⁶ Only one sensor may be assigned to an open loop daylight set. If a sensor is added when one is already assigned, the original sensor will be unassigned.

- WaveLinx PRO Ambient, Industrial or Outdoor Integrated Sensor or WaveLinx PRO Tilemount Sensor:**³⁰⁷ When prompted, select **Yes** to continue. The WaveLinx App will show that the device is configuring. During this **Fast Configuration**, the fixture connected to the sensor will turn OFF for 10 seconds and then will turn ON to 100% for 10 seconds before reverting to its previous light level as the sensor measures the fixture's max light output and the amount of light it contributes to the sensor's view to maximize the accuracy of the daylight response. The WaveLinx App will then confirm that the configuration is complete. Tap **X** to close the configuration message and review the sensor's assignment.



Note: To change the assigned sensor, in the **Assigned Sensors** section tap **remove** and then follow the steps in this section to assign a different sensor, or simply add the new sensor and when prompted, tap **YES** to acknowledge the replacement of the sensor.



³⁰⁷ WaveLinx Integrated Sensor and Tilemount Sensor assignment for open loop control is contingent on the use of WAC2 (Gen 2) v10.0.x.x and higher updated device firmware. Low-Voltage Integrated Sensors do not support this feature.

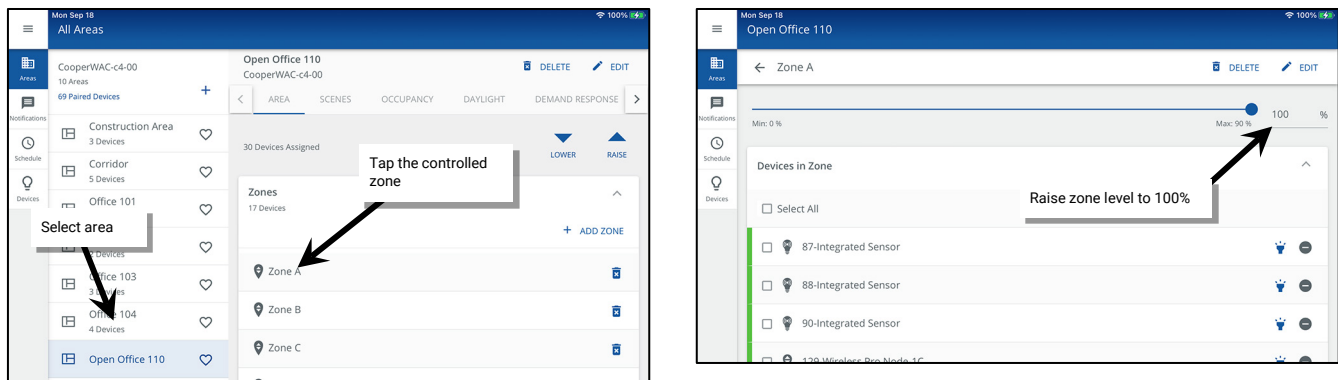
Step 4: Adjusting the Amount of Lighting Response

This step is not necessary for the WaveLinX Outdoor Lighting Control Module. Once the open loop daylight set has the zone(s) and sensor assigned, the WaveLinX Outdoor Lighting Control Module will begin operating with hardcoded settings.³⁰⁸

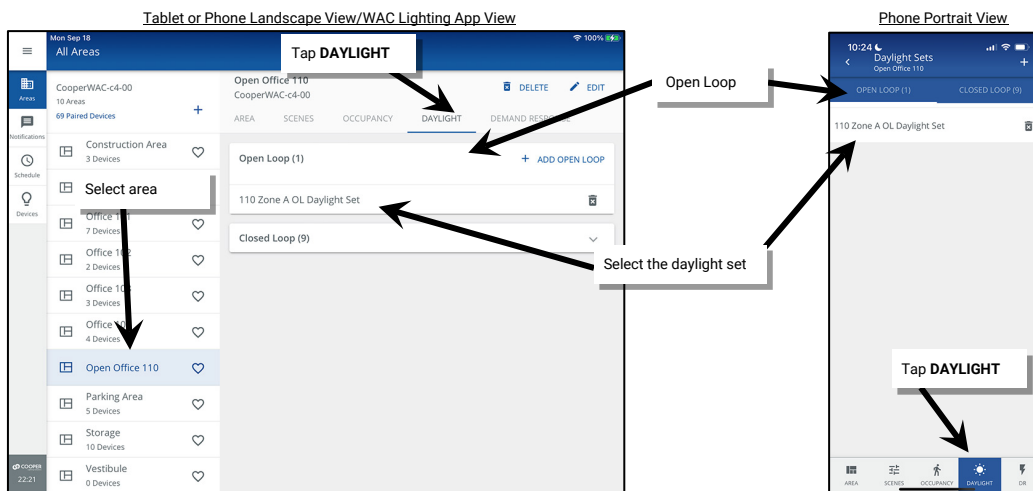
For all other open loop daylight sensor types: Once the open loop daylight set has the zone(s) and sensor assigned, adjust the zone(s) lighting response to daylight.³⁰⁹

IMPORTANT: Before adjusting the lighting response, review the recommendations for when and how open loop daylight adjustments should be performed for the device type being used. See the “WaveLinX Device Reference Sheets” beginning on page 14.

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³¹⁰ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: Using a wallstation or the WaveLinX App, turn ON the controlled zone(s) and raise the light level to the highest light output.



- 3: In the **All Areas** list, select the area that will be controlled by the open loop daylight set, and select the **DAYLIGHT** tab.
- 4: In the **Open Loop** section, select the previously created open loop daylight set.



³⁰⁸ The WaveLinX Outdoor Lighting Control Module does not require calibration. It is hardcoded for ON at dusk / OFF at dawn operation based on optimal performance factors for outdoor application. Lighting will turn OFF if the light level has exceeded 65 lux for a period of 180 seconds (3 minutes). Lighting will turn ON if the light level falls below 16 lux for a period of 30 seconds. The calibration screen for this sensor will not allow modification.

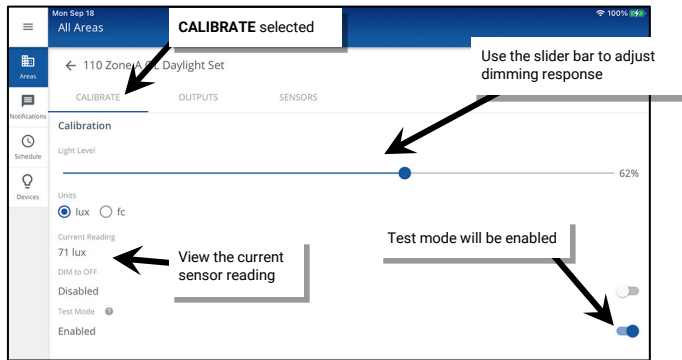
³⁰⁹ The WaveLinX PRO IR Remote can also be used for adjusting this feature. Refer to the WaveLinX PRO IR Remote User Guide for details on using this feature.

³¹⁰ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

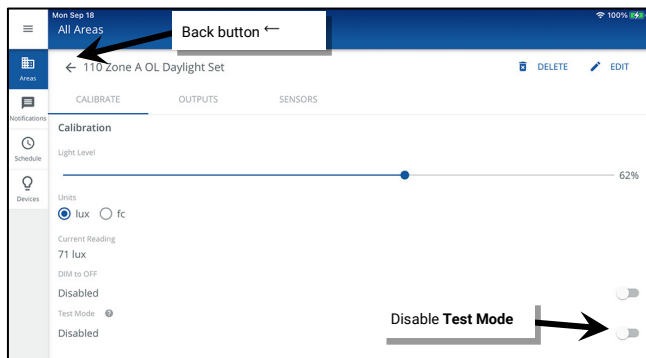
5: Make sure the **CALIBRATE** tab is selected and then use the slider to adjust the daylight sensor gain and modify the zone's dimming response. The system will automatically enter test mode when adjustments are made to accelerate the dimming response.³¹¹ Wait approximately 10 seconds between adjustments to allow the light level to stabilize. Adjust the slider as needed until the light level is in the desired range using a light meter at the work surface to verify.

- Lower the slider level to lower the electric light level and increase sensitivity to daylight.
- Raise the slider level to increase the electric light level and decrease sensitivity to daylight.

The screen allows visibility of the current sensor reading in either lux or foot-candles for quick reference.



6: Once the adjustment is complete, enable or disable the daylight set to **DIM to OFF** (see “Enabling/Disabling DIM to OFF Capability for Open Loop Daylight Sets” on page 246 for further details).^{312,313} Then disable **Test Mode** or allow it to automatically time out after 10 minutes. Tap the back button to exit the calibration screen. Adjusted light level settings are automatically saved.



Enabling/Disabling DIM to OFF Capability for Open Loop Daylight Sets

As of WaveLinX Area Controller version 12.x.x.x and higher, the ability for daylighting to **DIM to OFF** is selectable.^{314,313} **DIM to OFF** is disabled by default. This means that the lighting will remain ON at the defined minimum dimming level if the light level is above the calibrated level.

If **DIM to OFF** is manually enabled and bright daylight causes the lighting to be above the desired level even after the lighting has been fully dimmed, after a period the fixture will dim to OFF.³¹⁵ As daylight contribution decreases, the fixture will turn back ON/raise the amount of electric light accordingly.

The **DIM to OFF** feature can be enabled/disabled for any open loop daylight set:

³¹¹ The daylight set will automatically exit test mode after 10 minutes or test mode can be manually disabled once testing is complete.

³¹² WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

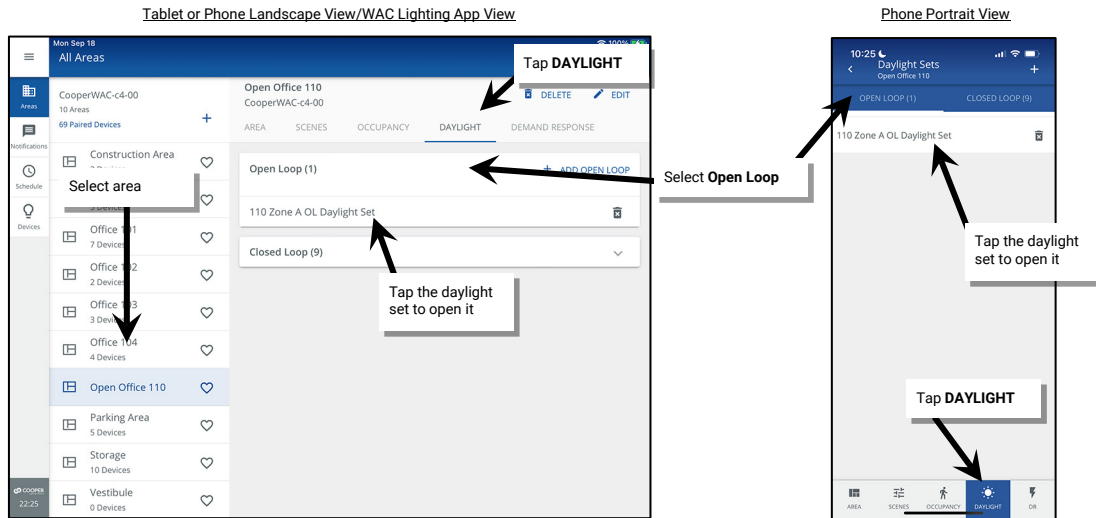
³¹³ Ambient Integrated Sensor model SWPD1 (IS) and Low-Voltage Fixture Integrated Sensors (IS-LV) will automatically have **DIM to OFF** enabled and will not offer the ability to disable this feature.

³¹⁴ WAC versions prior to version 12.x.x.x will not have the ability of disabling the **DIM to OFF** feature. **DIM to OFF** is automatic when daylighting is enabled.

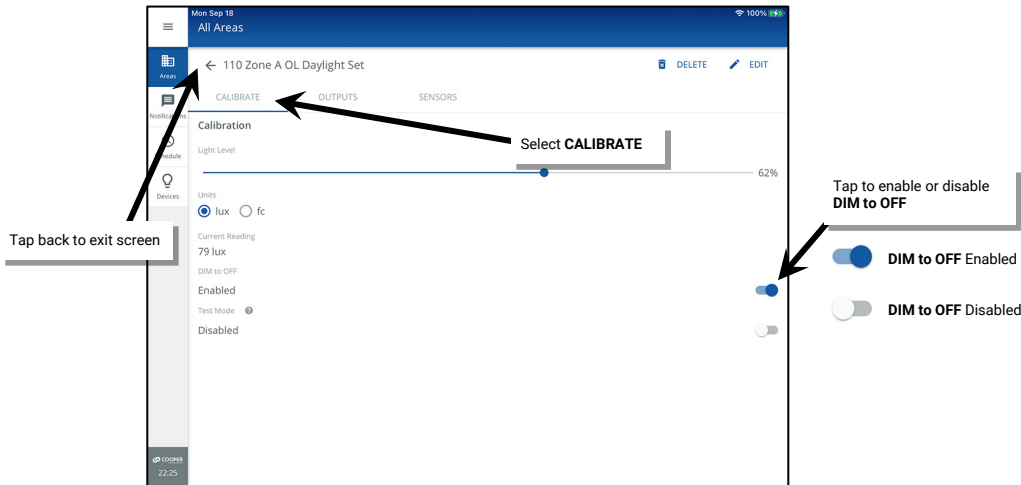
³¹⁵ For WaveLinX Integrated and Tilemount sensors, when the measured light exceeds 150% of the calibrated gain for more than 30 minutes, the sensor will turn lighting OFF. Lighting will be turned back ON when one of the two conditions occurs. Condition 1: The measured light level falls between 100% and 50% of the calibrated gain for longer than 10 minutes. Condition 2: The measured light level falls below 50% of the calibrated gain for longer than 30 seconds.

For WaveLinX Outdoor Lighting Control Modules, Lighting will turn OFF if the light level has exceeded 65 lux for a period of 180 seconds (3 minutes). Lighting will turn ON if the light level falls below 16 lux for a period of 30 seconds.

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App³¹⁶ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that contains the daylight set, and then select the **DAYLIGHT** tab. Tap on the **Open Loop** section, and then tap the row for the desired daylight set.



- 3: At the bottom of the **CALIBRATE** screen, tap the **DIM to OFF** toggle button to enable (ON) or disable (OFF) the **DIM to OFF** capability.
- 4: Tap the back button at the top of the screen to exit the screen. The setting will be updated. Repeat for additional daylight sets if needed.



³¹⁶ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Manually Activating Test Mode for an Open Loop Daylight Set

The open loop daylight sensor response can be tested manually by placing the sensor into test mode.^{317,318} During test mode:

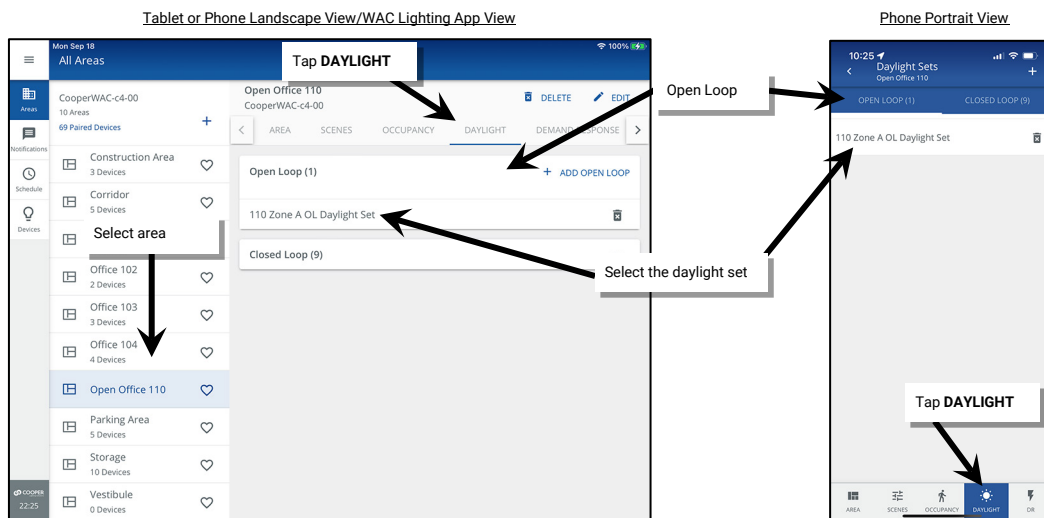
- The daylight fade rate is lowered to 10 seconds.
- If **DIM to OFF** is enabled, the time delay for the OFF to occur is also reduced in test mode. When the measured light level exceeds 150% of the programmed gain for more than 30 seconds, the sensor will turn lighting OFF. Lighting will be turned back ON when one of two conditions occurs.
 - Condition 1: The measured light level falls between 100% and 50% of the programmed gain for more than 20 seconds.
 - Condition 2: The measured light level falls below 50% of the programmed gain for longer than 5 seconds.

The faster response allows the sensor operation to be quickly verified on site. Shine a laser pointer or bright focused flashlight into the sensor lens or cover the sensor to verify the lighting response.

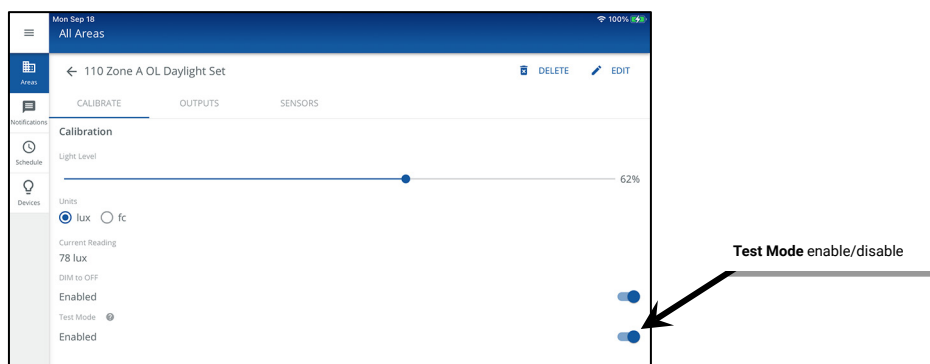
The daylight set will automatically exit test mode after 10 minutes or test mode can be manually disabled once testing is complete.

To manually activate test mode:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³¹⁹ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: In the **All Areas** list, select the area that will be controlled by the open loop daylight set, select the **DAYLIGHT** tab, and tap on the daylight set to open it.



- 3: Tap the slider to switch between enabling and disabling **Test Mode**.



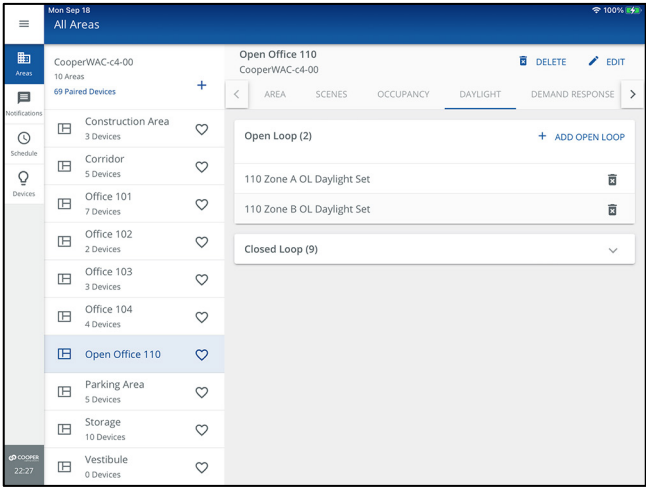
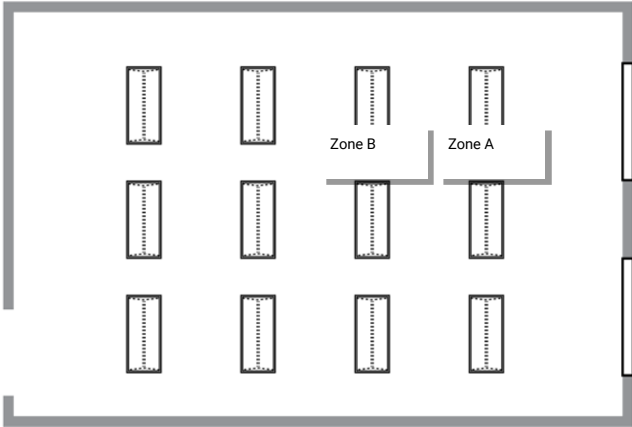
³¹⁷ The WaveLinX Outdoor Lighting Control Module will not allow test mode to be enabled as its settings are hardcoded for ON at dusk / OFF at dawn operation based on optimal performance factors for outdoor application. Lighting will turn OFF if the light level has exceeded 65 lux for a period of 180 seconds (3 minutes). Lighting will turn ON if the light level falls below 16 lux for a period of 30 seconds.

³¹⁸ The WaveLinX PRO IR Remote can also be used for adjusting this feature. Refer to the WaveLinX PRO IR Remote User Guide for details on using this feature.

³¹⁹ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

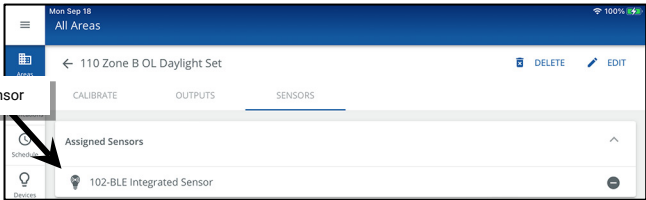
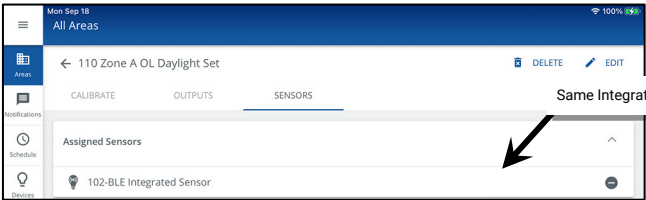
Controlling Zones at Different Light Levels from the Same Open Loop Sensor

One area can have up to six open loop daylight sets. A different sensor can be assigned to each open loop daylight set, or one sensor can be assigned to multiple daylight sets. This section shows one common application in which one sensor is assigned to two open loop daylight sets. In this example, there are two daylighting zones in the space, the lighting closest to the window is Zone A. The secondary row of lighting further into the space is Zone B. Per the requested operation, both zones will perform open loop daylighting from the same sensor. Zone A needs to dim more aggressively than Zone B due to its proximity to the window.



Two open loop daylight sets are programmed in the area.

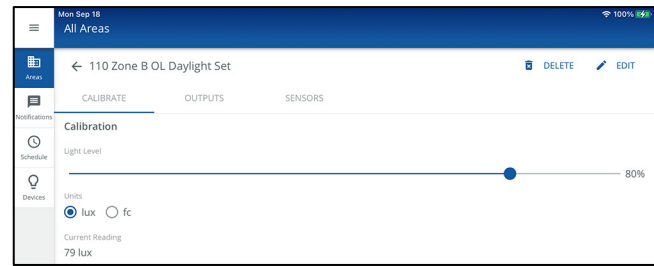
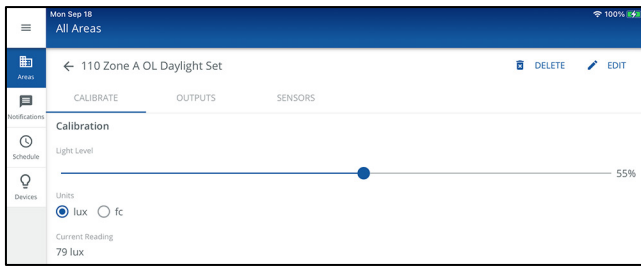
Open Loop Daylight Set 1 controls Zone A. Open Loop Daylight Set 2 controls Zone B. The same sensor device is assigned to both daylight sets.³²⁰ If the sensor assigned is an Integrated or Tilemount Sensor, the sensor will perform **Fast Configuration** when assigned to the first daylight set. It will not repeat **Fast Configuration** when assigned to additional daylight sets. During **Fast Configuration**, the fixture connected to the sensor will turn OFF for 10 seconds and then will turn ON to 100% for 10 seconds before reverting to its previous light level.



Same Integrated Sensor

³²⁰ WaveLinx Integrated Sensor and Tilemount Sensor assignment for open loop control is contingent on the use of WAC2 (Gen 2) v10.0.x.x and higher updated device firmware. Low-Voltage Integrated Sensors do not support this feature.

Each daylight set is adjusted for the optimal light level based on the incoming daylight with Zone A adjusted for a more aggressive gain level than Zone B which is further from the window.



Quick Links for Common Questions

- After I programmed the open loop daylight sets, the work surface light level is not consistent over the controlled zone. Why is this occurring? See the answer on page 363.
- The lights over my desk appear to adjust to different dimming levels even though the daylight does not appear to change. Why is this happening? See the answer on page 363.
- My wallstation or occupancy sensor only seems to work at night. Why is this occurring? See the answer on page 364.
- My exterior lighting does not all respond ON or OFF at the same time. Why is this occurring? See the answer on page 363.

Adding Schedules to the Control Strategy

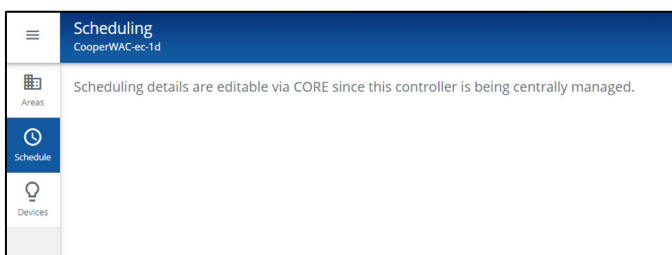
The default programming in WaveLinX does not include any schedule events. Schedule events may be added if they are needed for the control strategy. Schedule events through the WaveLinX App are automatically set to recur every week on the day(s) selected.

From the WaveLinX App, the schedule allows for up to 16 timed events to be added. Each event can be assigned multiple actions. For instance, an event at 06:00 may need to issue scene commands to multiple areas of the facility. Each scene command would be programmed as an action for the 06:00 event.

A schedule event may be used for the following functions:

- To issue scene or zone level commands at a specific time of day or astronomic clock sunrise or sunset time.³²¹
- To modify the behavior of an occupancy set during the defined time.
- To disable or enable an occupancy set from triggering motion events during the defined time.
- To activate or deactivate a special After Hours Occupancy Mode that allows occupancy sets to issue a different unoccupied level when activated and return to the defined occupancy set unoccupied level when deactivated.³²²
- To disable or enable wallstations during the defined time.
- To disable or enable a manual override timer during the defined time.

For sites using the WaveLinX CORE, the WaveLinX CORE Lighting Application allows for advanced scheduling recurrences and additional schedules and events. If schedules are administered in the WaveLinX CORE Lighting Application, the WaveLinX Mobile App or WaveLinX WAC Lighting App³²³ will display a message that schedule changes should be made through the WaveLinX CORE applications.



³²¹ If a schedule event that issues a scene or zone level command is assigned to an area that has occupancy sensors, at the time of the event if the area is occupied, the lighting and receptacle loads will go to the commanded schedule event levels. If the area is not occupied, the lighting and receptacle loads will remain at the unoccupied commanded levels.

³²² **After Hours Occupancy Mode** will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

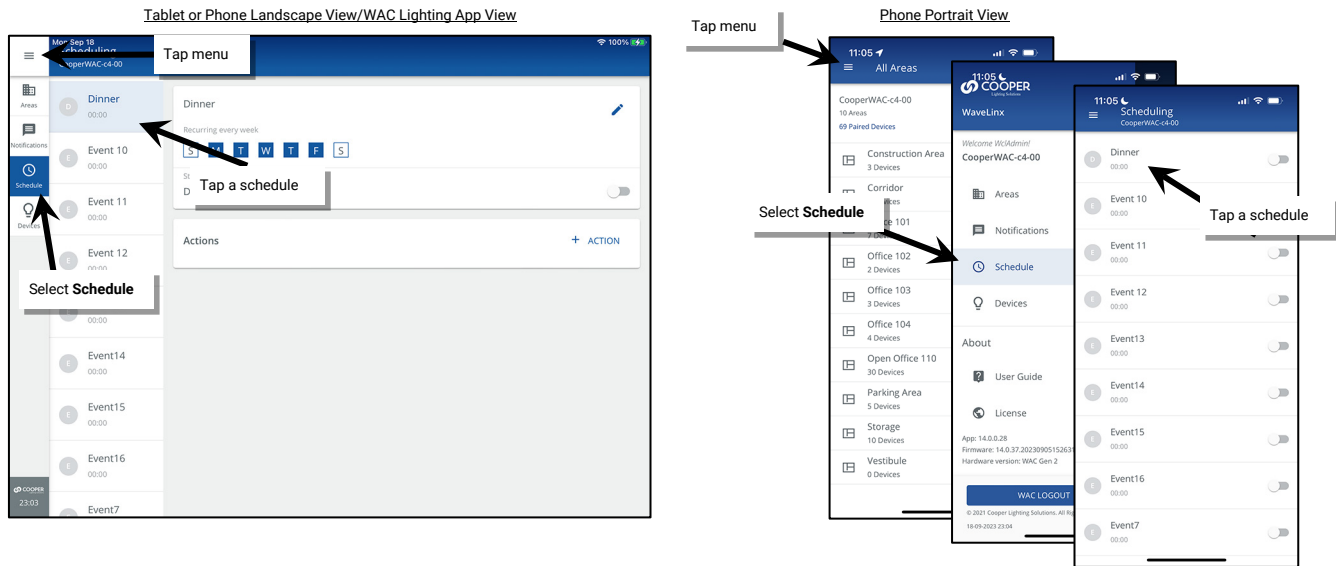
³²³ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Adding a Schedule Event

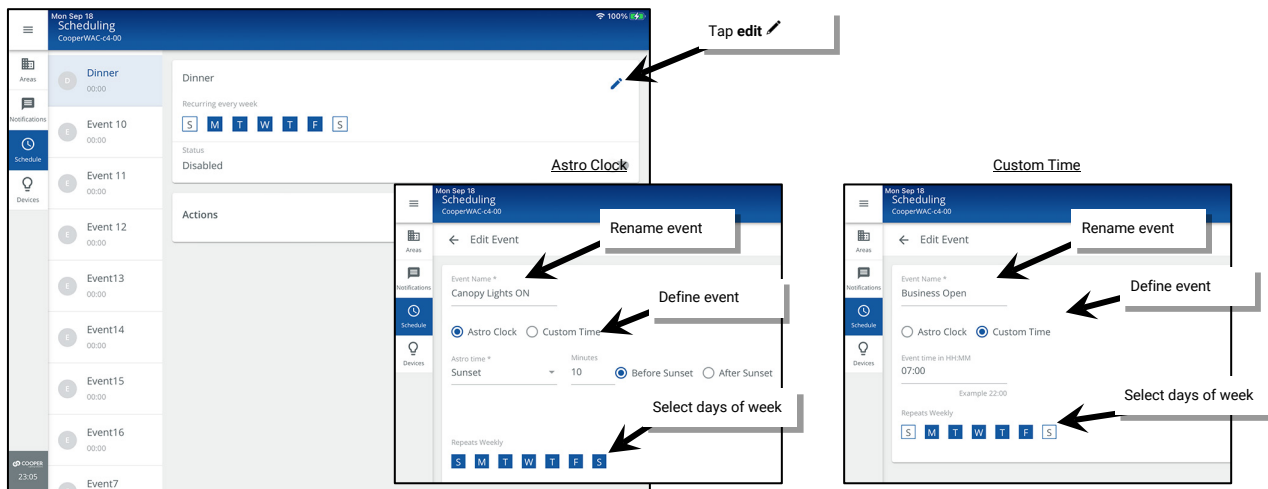
Before using Schedule Events, set the WaveLinx Area Controller clock if it was not set during the initial setup. See “Setting the System Location, Time, Date and Time Zone” on page 294 for this procedure.

To enable and modify a schedule event:

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App³²⁴ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: From the **menu** ≡, select **Schedule**.
- 3: The 16 available schedule events will be displayed in alphabetical order (default names may be changed during configuration). Select an event that is not currently being used (gray icon indicates the event is not enabled).



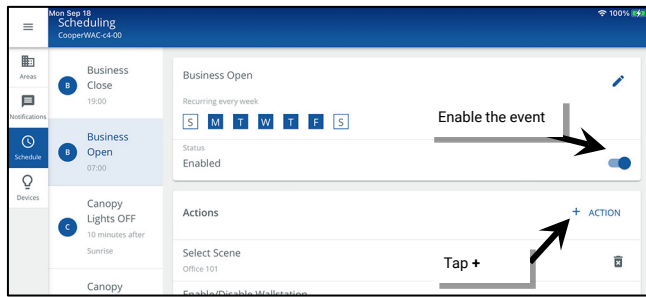
- 4: Tap the event **EDIT** ✎ icon. Then, enter a descriptive name, select the event type (astro clock or custom time), and enter the event parameters and days of week. Tap **SAVE** to continue.



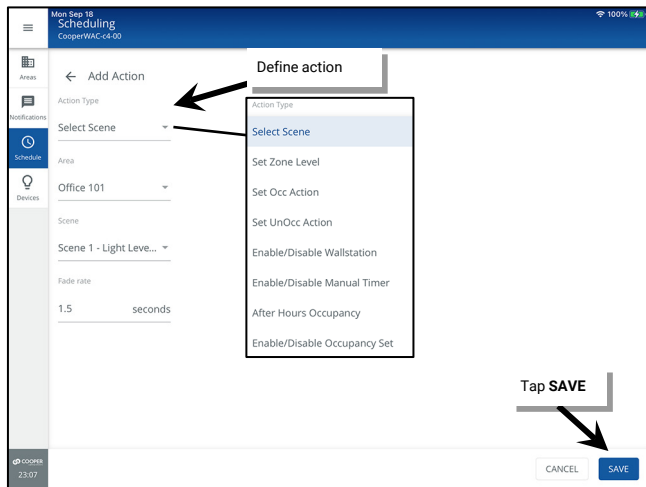
- For **Astro Clock** events, choose **Sunrise** or **Sunset** and add or subtract an offset time to cause the command to issue before or after the calculated sunset or sunrise time. For example, to have lighting turn ON 10 minutes prior to sunset, enter 10 minutes, and select the before option.
- For **Custom Time** events, enter the time in 24-hour, military time format. For example, 2:00 in the afternoon would appear as 14:00.
- Select the desired days of week for the schedule event to run. If the day of week is highlighted blue, the event will run on that day.

³²⁴ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

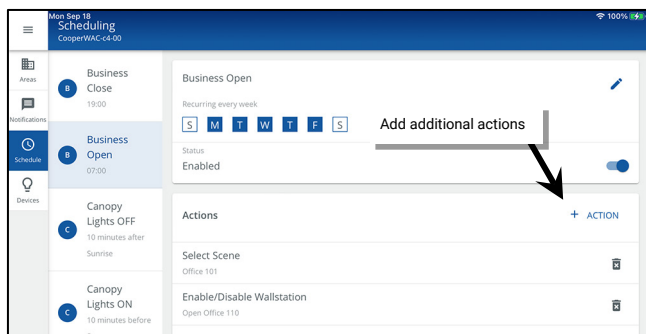
5: **IMPORTANT: Enable the event.** Tap the disable/enable button to enable the schedule event and then tap + to add an action.



6: Select the desired action type and parameters based on the action type chosen. Tap **SAVE**.



7: If additional actions need to occur at this same time, add additional actions and define the action type parameters.

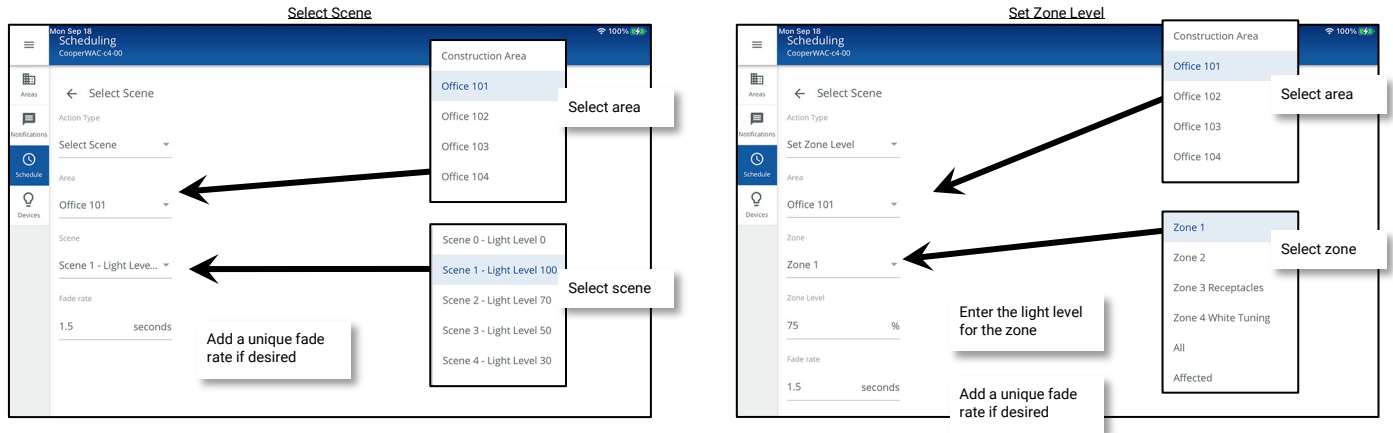


Scene or Zone Level Actions

Schedule events that issue scene or zone level commands will directly command lighting in the affected area(s).

- **Select scene:** Select the area, scene, and a unique fade rate. The event will invoke the selected scene for the selected area.
- **Set zone level:** Select the area, zone, level, and unique fade rate. Zone selection includes individual zones, **ALL** zones in the area, or **AFFECTED** zones. If the **AFFECTED** zones option is selected, zones that have been defined to be ignored from the active scene will not respond to this event.³²⁵ The event will command the selected zone to the defined level.

³²⁵ White tuning zones are automatically exempted from control if the **ALL** or **AFFECTED** zone is selected to prevent inadvertent color temperature shifts when adjusting light levels. The white tuning zone will only respond to this command if it is the only zone selected.



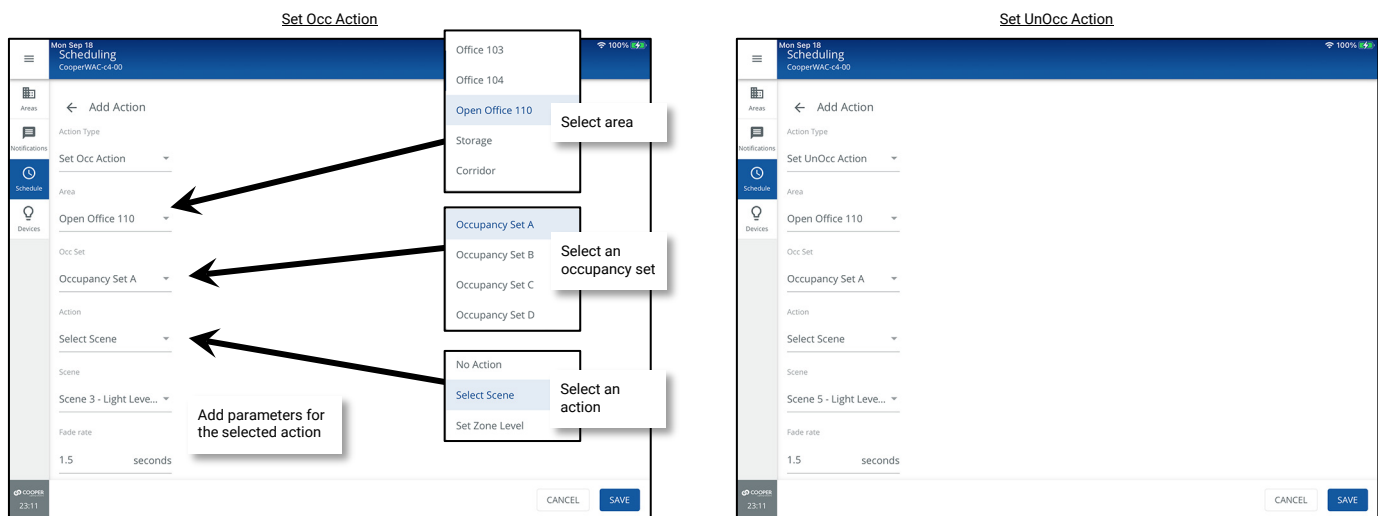
Select scene and set zone level commands from schedule events will interact with other programming assigned to the area.

- **For areas that are controlled with occupancy sets:** If the area is not occupied when the scene or zone level event occurs, the lighting and receptacle loads will remain at the unoccupied light level. If the area is occupied at the time of the scheduled event, the lighting and receptacle loads will go to the schedule commanded level.
- **For areas that have daylight sets:** Daylighting filters the fixture's response to other control commands. A schedule event command to go to 100% will adjust the electric light level output to meet the originally calibrated daylight level. A schedule command to go to 50% will adjust the electric light level to meet 50% of the originally calibrated daylight level. The actual electric light level output with these commands will vary and adjust based on the available amount of daylight in the space and how much electric light needs to be contributed to maintain the commanded target.
- **For partitioned areas:** Scene and zone level commands will issue to the entire area independent of wall position.
- **For manual overrides:** If wallstations or manual commands from the WaveLinx App are used, lighting will respond to the command manual commands or schedule event commands in the order that they are received (last command received is the commanded light level).

Modify Occupancy Set Behavior (Set UnOcc and Set Occ Actions)

Use the **Set UnOcc Action** or **Set Occ Action** to change the behavior of the occupied and/or unoccupied occupancy commands at a specific time.

- **Set unocc action:** Select **Set UnOcc Action** to change the command that the occupancy set issues when the unoccupied command is issued (no motion activity and hold timers expired). Select the area and then select the command that should be issued for the unoccupied command (No action, select scene, or set zone level). Once the event occurs, if a space becomes unoccupied, the selected occupancy set will issue the command defined in this event action rather than what is defined in the occupancy set.
- **Set occ action:** Select **Set Occ Action** to change the command that the occupancy set issues when the occupied command is issued from motion activity. Select the area and then select the command that should be issued for the occupied command (No action, select scene, or set zone level). Once the event occurs, if the space becomes occupied, the selected occupancy set will issue the command defined in this event action rather than what is defined in the occupancy set.

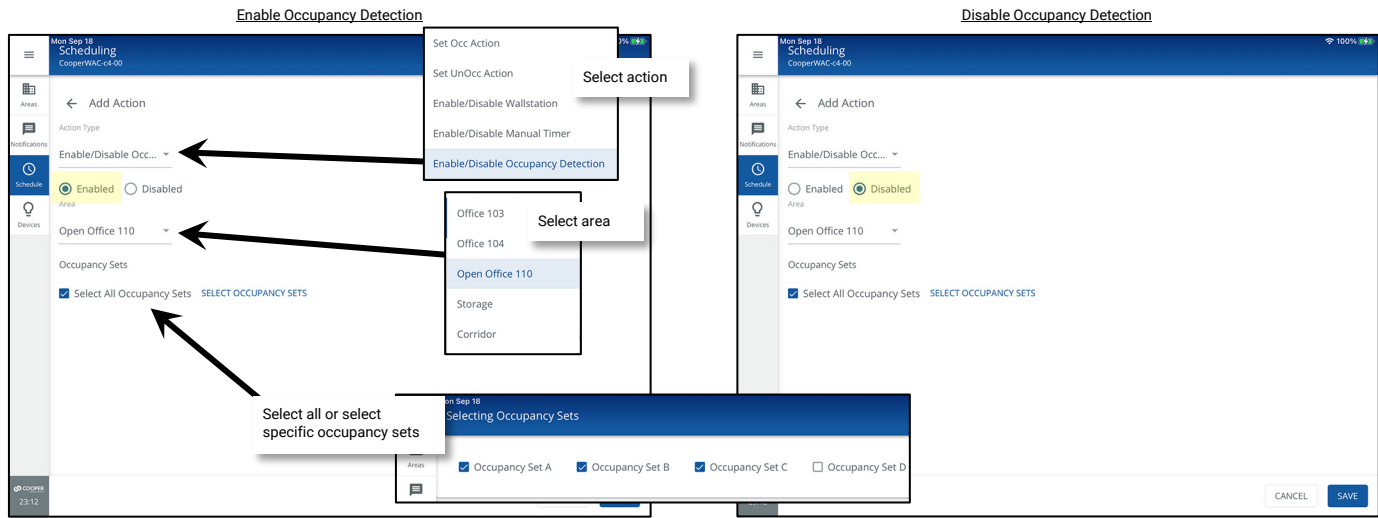


For instance, to set a motion sensor so that the occupied command issues scene 3 during business hours and issues scene 5 after hours, use the **Set Occ Action**. Create a schedule event at the time of the start of business hours and define the action for **set occ action**, issuing scene 3 for the affected area. Create another schedule event at the time of the end of business hours and define the action for **set occ action** issuing scene 5 for the affected area.

Enable/Disable Occupancy Detection Action

Use the **Enable/Disable Occupancy Detection** action to either allow or prevent motion-based occupancy set commands after the specified time.³²⁶

- **Enable/Disable Occupancy Detection:** Select whether the action is to enable or disable the sensor set and then choose the affected area. Pick either the option to affect all occupancy sets or to affect just selected occupancy sets in the area.



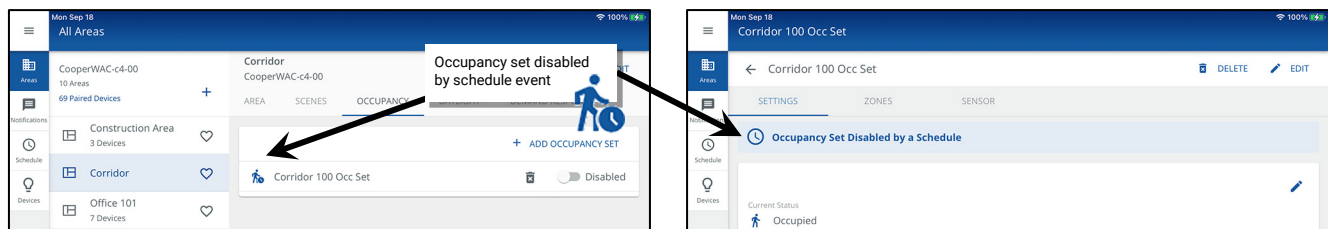
When a **Disable Occupancy Detection** event action occurs and the lighting is already ON due to the area being occupied previously, there will be no change in the current light level. If the lighting is in the unoccupied commanded level due to lack of motion and the **Disable Occupancy Detection** event occurs, the lighting will revert to the last commanded level prior to the unoccupied command. This is true regardless of whether the occupancy set is set to **Occupancy** or **Vacancy** mode.

- Example 1: If the lighting was last issued a level 30% command from a wallstation prior to the unoccupied command, the lighting will revert to the wallstation level 30% light level when the **Disable Occupancy Detection** event occurs.
- Example 2: If the lighting was last issued a level 0% (OFF) command from a wallstation prior to the unoccupied command, the lighting will revert to the wallstation level 0% command and remain OFF when the **Disable Occupancy Detection** event occurs.

The occupancy set will remain disabled until an enabled command is processed. Remember to set an Enable Occupancy Detection event at the time when the occupancy set should revert to motion control.

When the **Enable Occupancy Detection** event occurs, if the area is occupied, lighting will remain at the current level until the space becomes unoccupied. If the area is unoccupied and the hold time has expired when the **Enable Occupancy Detection** event occurs, the occupancy set will issue the programmed unoccupied action.

The WaveLinx Application will indicate the occupancy set is disabled by displaying a clock icon in the occupancy set list and a banner message in the occupancy set screen. LEDs on the sensors will also indicate when they are disabled, flashing white for 1 sec. / OFF for 1 sec. repeatedly until the sensors are enabled.^{327, 328}



³²⁶ This action type is supported in the WAC2 (Gen 2) version 12.x.x.x and higher.

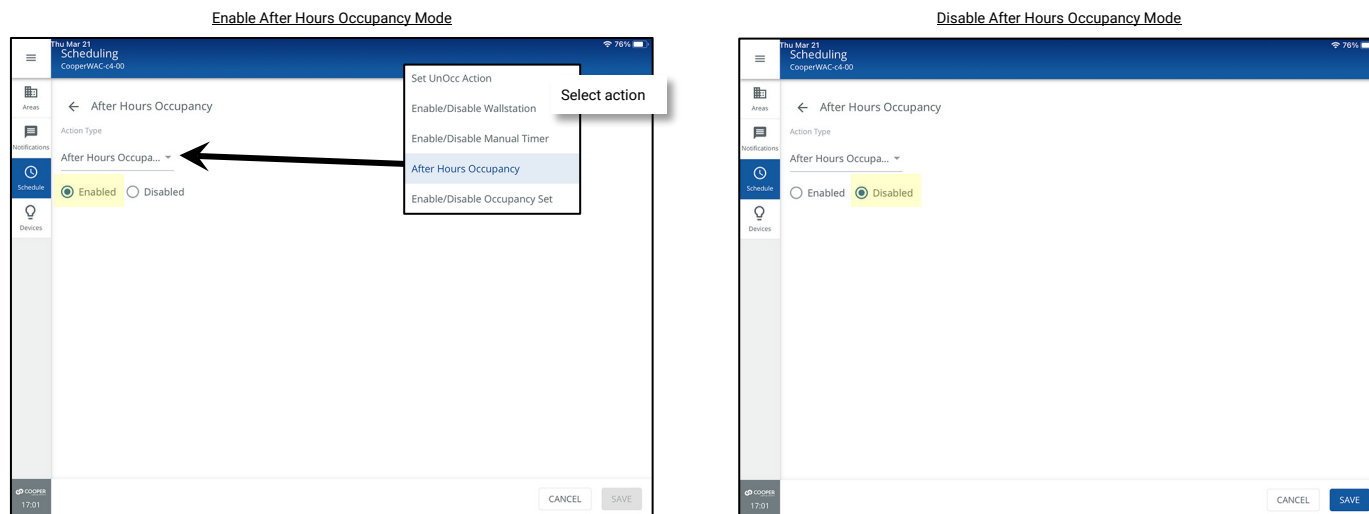
³²⁷ The SWPD1 (IS) ambient integrated sensor and Low-Voltage Integrated Sensor (IS-LV) will not display the disabled LED behavior described.

³²⁸ If a closed loop daylight sensor has dimmed lighting to OFF, the LED will flash white for 700ms / yellow for 300ms / OFF for 1 second and then repeat.

Enable/Disable After Hours Occupancy Action

Use the **Enable/Disable After Hours Occupancy**³²⁹ action to activate or deactivate a special After Hours Occupancy Mode. Each area that should respond to the command must have After Hours Mode enabled and the After Hours unoccupied level defined. When enabled, the mode allows occupancy sets to issue a different unoccupied level at the specified time. When disabled, the unoccupied command returns to the defined occupancy set unoccupied level at the specified time.³³⁰ This allows a quick way of changing the unoccupied command for after-hours operation and revert to the occupancy set programming during normal operation hours.

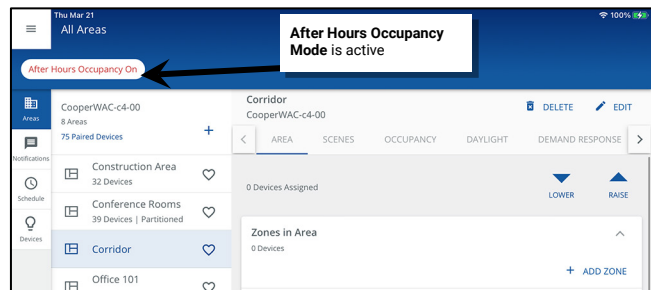
- **Enable/Disable After Hours Occupancy:** Select whether the action is to enable or disable After Hours Occupancy mode.



Only areas that are enabled for the After Hours Occupancy mode will respond with the unoccupied level change.

After hours mode will remain in effect until a disabled After Hours Occupancy command is processed. Remember to set an Enable After Hours Occupancy event action at the time when the occupancy set's unoccupied command should revert to the normal occupancy set programmed level.

When After Hours Occupancy Mode is activated, an **After Hours Occupancy On** message will be displayed at the top of the WaveLinx App.



For details on setting the After Hours Mode for the area(s), see "After Hours Occupancy Mode" on page 188.

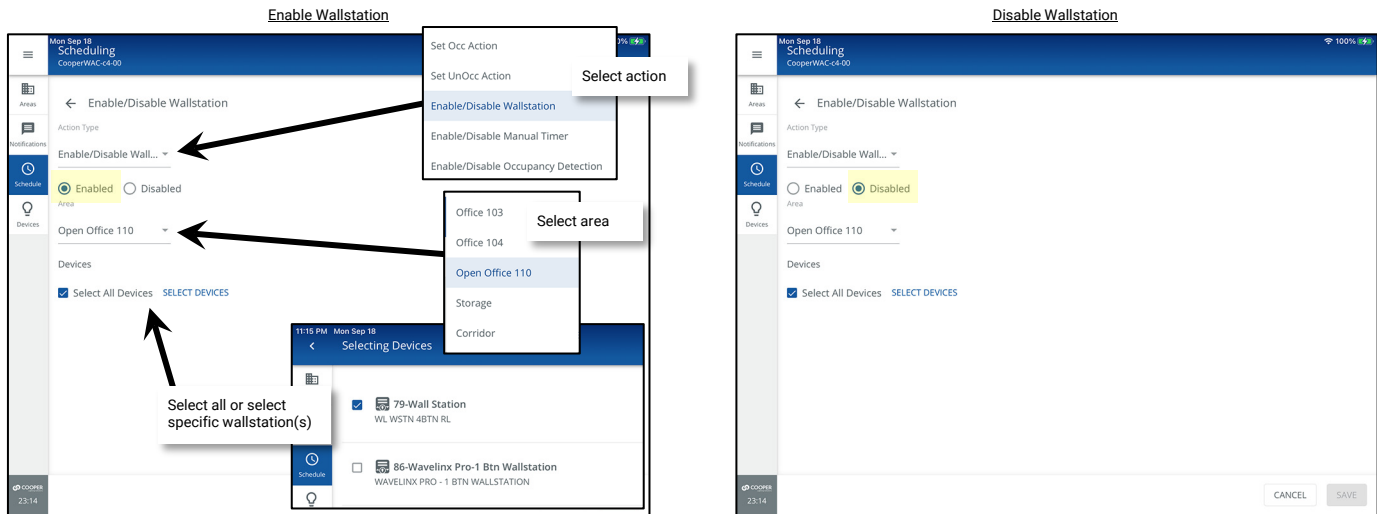
³²⁹ After Hours Occupancy Mode will only show in WAC2 (Gen 2) version 14.1.x.x firmware and higher.

³³⁰ This action type is supported in the WAC2 (Gen 2) version 14.1.x.x and higher.

Enable/Disable Wallstation Action

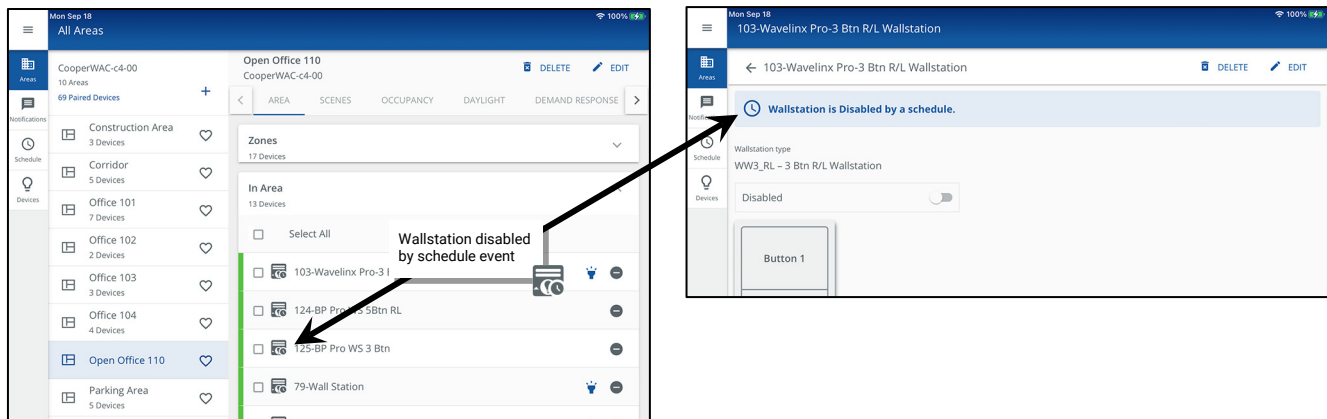
Use the **Enable/Disable Wallstation** action to either allow or prevent manual wallstation commands after the specified time.³³¹

- **Enable/Disable Wallstation:** Select whether the action is to enable or disable the wallstation(s) and then choose the affected area. Pick either the option to affect all wallstations in the area, or to select specific wallstations.



If a **Disable Wallstation** event action is used, the affected wallstation(s) will remain disabled until an enabled command is processed. Remember to set an **Enable Wallstation** event at the time when the wallstation(s) should become operable.

The WaveLinx Application will indicate a wallstation is disabled by displaying a clock icon in the **In Area** device list and a banner message in the wallstation's screen. When the wallstation is disabled, the LED indicator either on the button or at the top of the wallstation will flash white for 1 sec. / OFF for 1 sec. and repeat for 10 seconds whenever a button on the wallstation is pressed.³³²



³³¹ This action type is supported in WAC2 (Gen 2) version 12.x.x.x and higher.

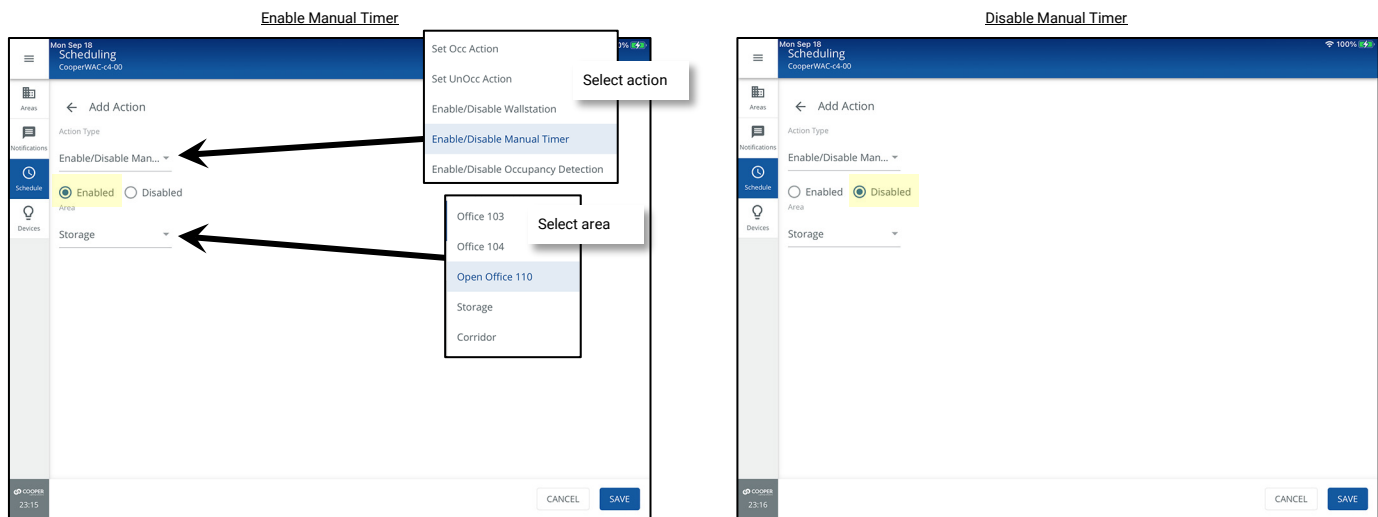
³³² The WaveLinx WB-Series Battery Powered Wallstation, models WB2L, WB3L, WB5 and WB6, will not display the described LED behavior.

Enable/Disable Manual Timer Action

The manual override timer feature is used to automatically shut off a zone that is not controlled by occupancy sensors. When turned on, the lighting will turn off automatically after the defined timer period expires. The lighting may be set to blink to alert occupants that lighting will turn off in 5 minutes unless a wallstation button is pressed. See “Activating the Manual Override Timer Feature:” on page 186 for more information on using this feature.

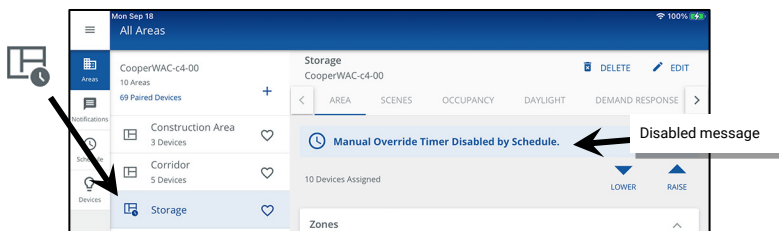
To prevent the automatic shut off timers and warning blinks from operating during a specific time period, use the schedule events action **Enable/Disable Manual Timer**.³³³

- **Enable/Disable Manual Timer:** Select whether the action is to enable or disable the manual override timer and then choose the affected area.



If a **Disable Manual Timer** event action is used, the timer and blink warns will not operate until an enable manual timer event action is processed. Remember to set an **Enable Manual Timer** event action at the time when the automatic timer shutoff should become operable. When the manual override timer is enabled and lighting is ON, the defined timer will restart so that lighting will automatically shut off once the timer expires.

The WaveLinX Application will indicate when the manual override timer is disabled by displaying a clock icon in the area list and banner messages in the main and edit area screens.



Quick Links for Common Questions

- My schedule events are running but they are running at the incorrect time. What could be causing this? See the answer on page 363.
- How do I define the astronomic clock's latitude and longitude and set my time zone? See the answer on page 363.
- I get the message **Scheduling details are editable via WaveLinX CORE since this controller is being centrally managed.** Why is this message appearing? See the answer on page 364.
- My schedule event actions do not always appear to run. Why is this occurring? See a possible answer on page 364.

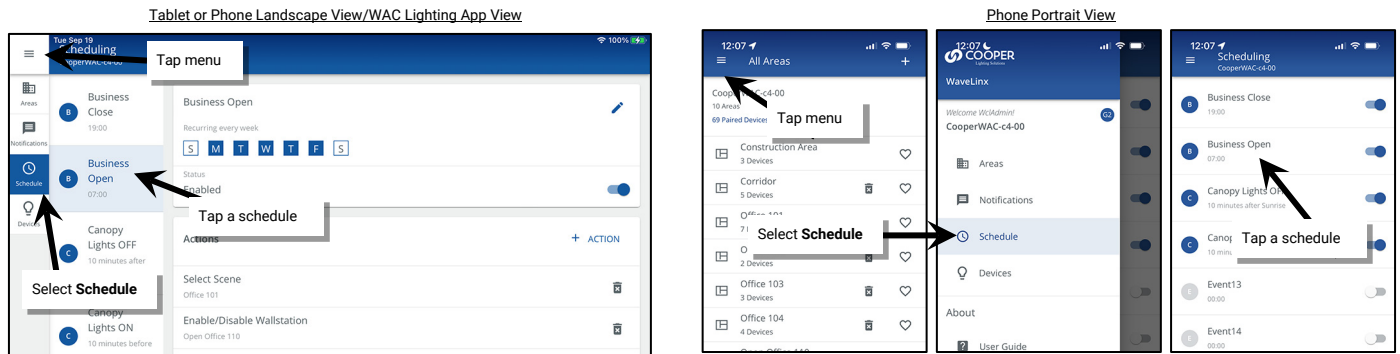
³³³ This action type is supported in the WAC2 (Gen 2) version 12.x.x.x and higher.

Modifying a Schedule Event

Once an event is configured, it can be modified as needed. The steps in this section go through modifying an existing scheduled event. For all these procedures, first open the event that needs to be modified.

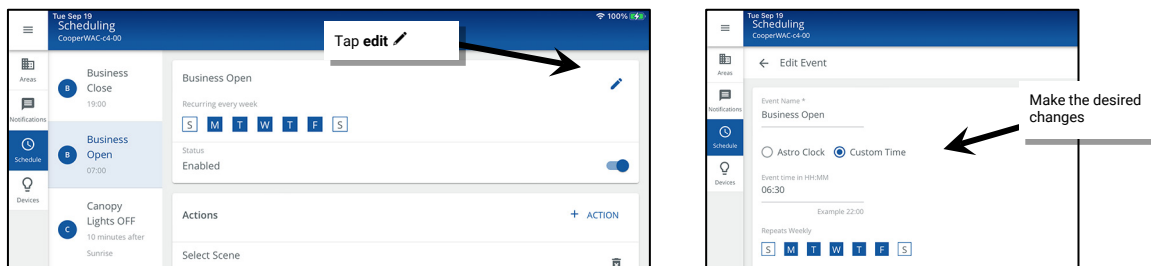
To open the schedule event to be modified:

- 1: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³³⁴ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 2: From the **menu** ≡, select **Schedule** and then tap the schedule to modify.



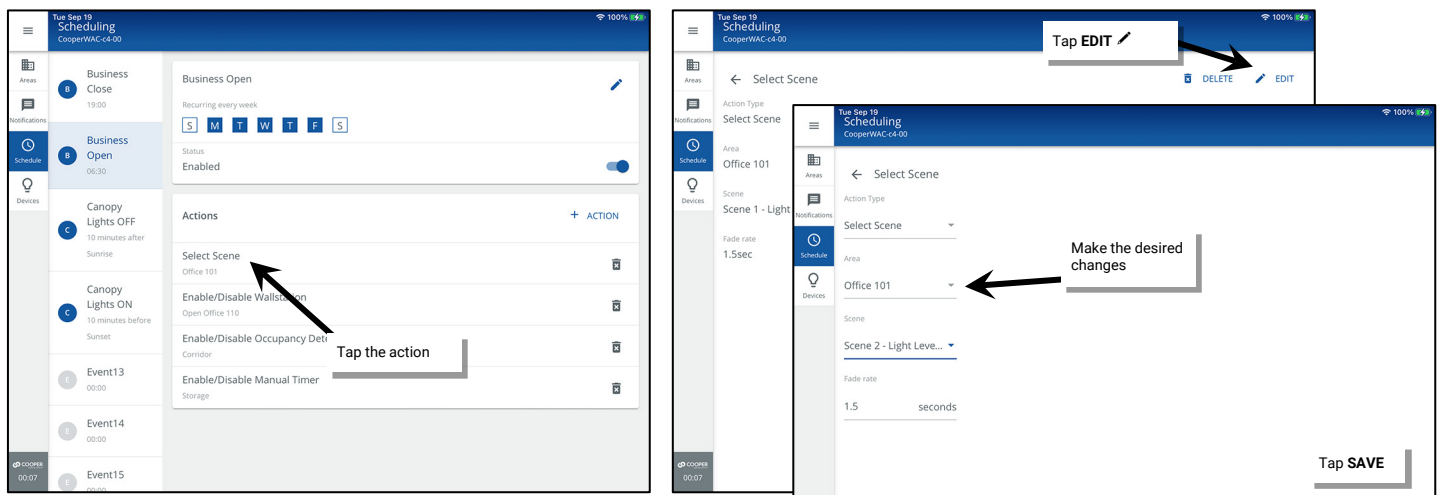
Modifying a Schedule Event Time or Day

To modify an existing schedule event time or day, tap the event's **edit** ✎ icon and make the needed modifications. Tap **SAVE**.




Modifying a Schedule Event Action

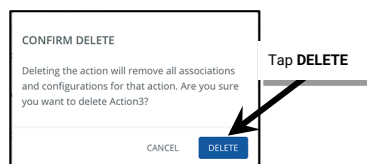
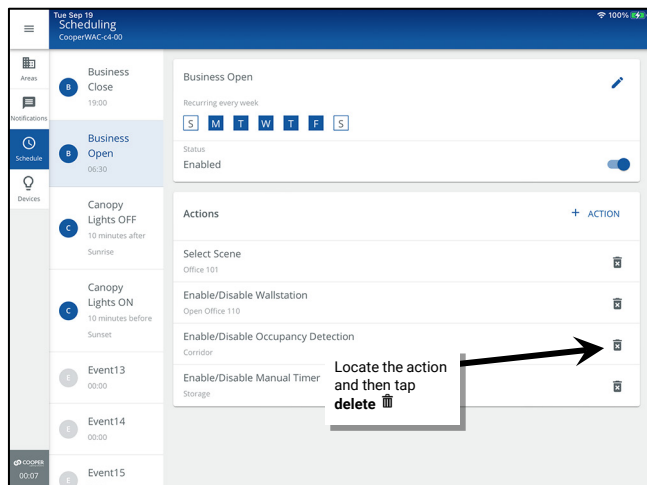
To modify an existing schedule event action, tap the desired action and then select **EDIT** ✎. Make the necessary modifications and then tap **SAVE**.



³³⁴ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Deleting a Schedule Event Action

To delete an existing schedule action, locate the action and then tap **delete** . Confirm the deletion.



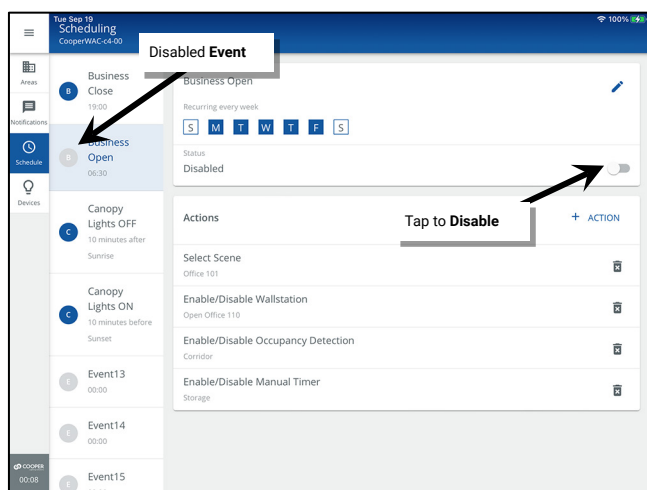
Deleting a Schedule Event

The WaveLinx schedule accessible by the WaveLinx App is hardcoded with 16 events. It is not possible to delete or add events. If an event should no longer function, disable the event, or delete the scheduled actions.

Disabling a Schedule Event

Disabling a schedule event will prevent the actions from executing until the event is re-enabled.

To disable a schedule event, open the desired event and then tap the slider icon to switch the status to **Disabled**. Disabled events will have gray icons in the schedule list.



Re-enable the event by tapping the slider icon to switch the status to **Enabled**. The actions will execute the next time the event occurs.

Modifying and Testing Demand Response Behavior

Once devices are paired with the WaveLinx Area Controller the WaveLinx system operates with default demand response functionality. Upon receipt of the demand response signal (from either an external system through WaveLinx CORE or from a contact input closure to a WaveLinx CAT Contact Input Module), all dimmable zones will reduce their light level by 20%. Commands from other controls will operate within the reduced range until the demand response signal is released. Lighting will then return to the level for the active command.

Demand response signals affect dimmable loads by default. WaveLinx Area Controllers versions 12.1.x.x and higher will also allow the manual assignment of receptacle zones to respond off when demand response signals are received.³³⁵ Assigned receptacle zones will respond by turning all devices OFF when the demand response signal is received, with any reduction level defined for greater than 0%.

Non-dimmable zones (switched) and tunable white zones/devices cannot be assigned to respond to demand response signals and will remain at current light level/color temperature when a demand response signal is received.

This section describes how to adjust the default response, assign the zones that respond, and how to initiate a test to verify the demand response functionality.

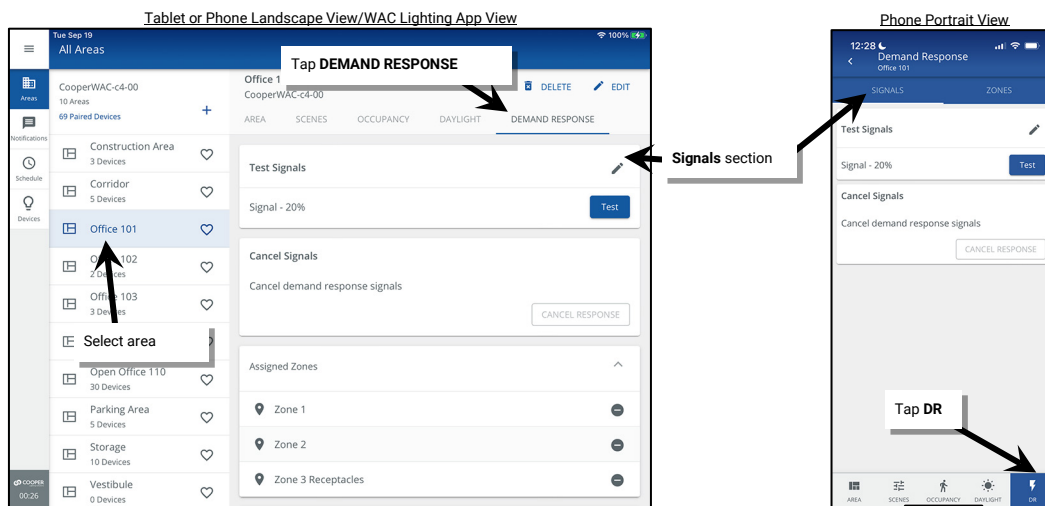
Demand response signals are not affected by partition wall position in a partitioned area.

Modifying the Demand Response Reduction Amount

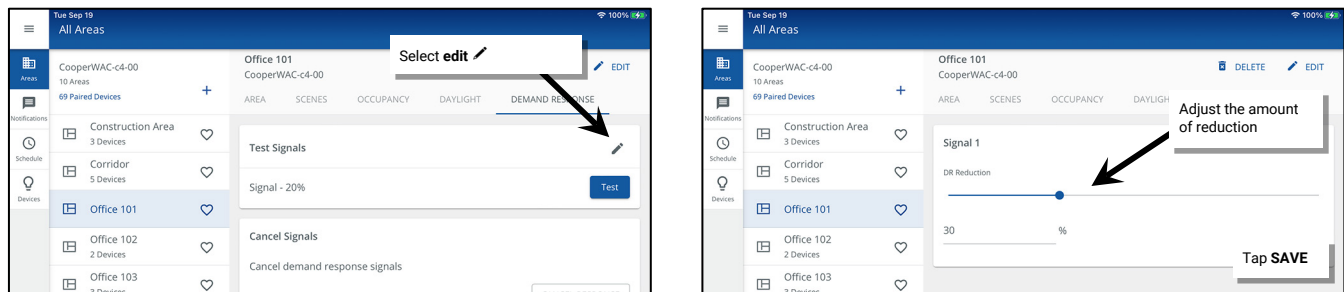
The default 20% demand response reduction for dimmable loads can be modified per area. Assigned receptacle loads will automatically turn OFF with any defined reduction level over 0%.³³⁵

To modify the demand response reduction amount for dimmable loads:

- 1: Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App³³⁶, login to the WaveLinx Area Controller as the administrator user.
- 2: Select the desired area, tap the **DEMAND RESPONSE** option, and locate the **Signal** section.



- 3: Tap **edit** in the **Test Signals** section and then use the slider or number entry fields to enter the desired percentage of reduction. Tap **SAVE**.





³³⁵ Receptacle zones allowing assignment for Demand Response is supported in the WAC2 (Gen 2) version 12.1.x.x and higher.

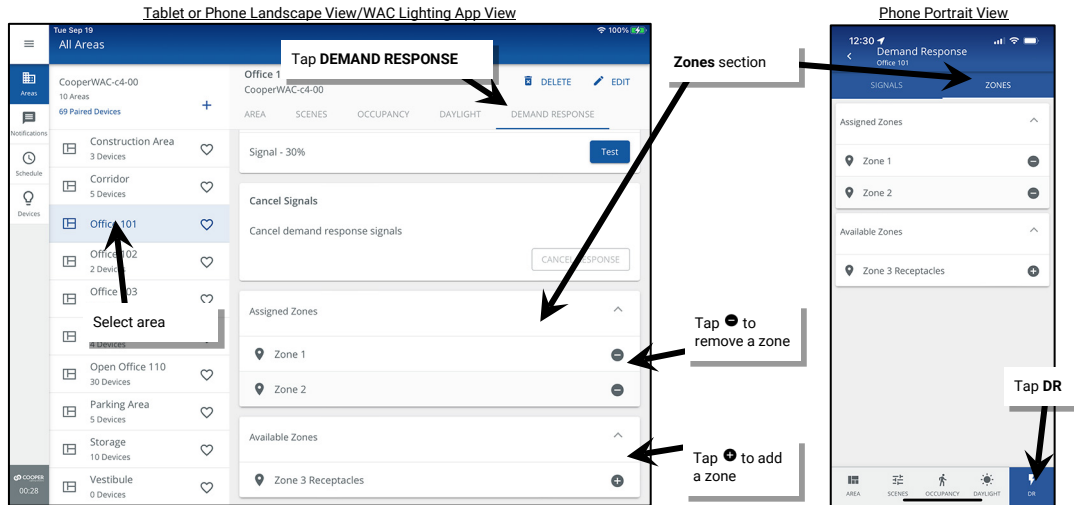
³³⁶ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) min. software version 11.x.x.x and higher.

Modifying the Zones that Respond to Demand Response

Demand response signals are automatically assigned to dimmable zones by default. Manual changes to demand response can be made to remove dimmable zones and/or add receptacle zones to have the controlled receptacles turn OFF when the demand response signal is received.³³⁷ Demand response signals will have no effect on non-dimmable zones (switched) and tunable white zones. In partitioned sub areas, sub zone designation and partition wall positions have no effect on the demand response.

To modify the zones that respond to the demand response signal:

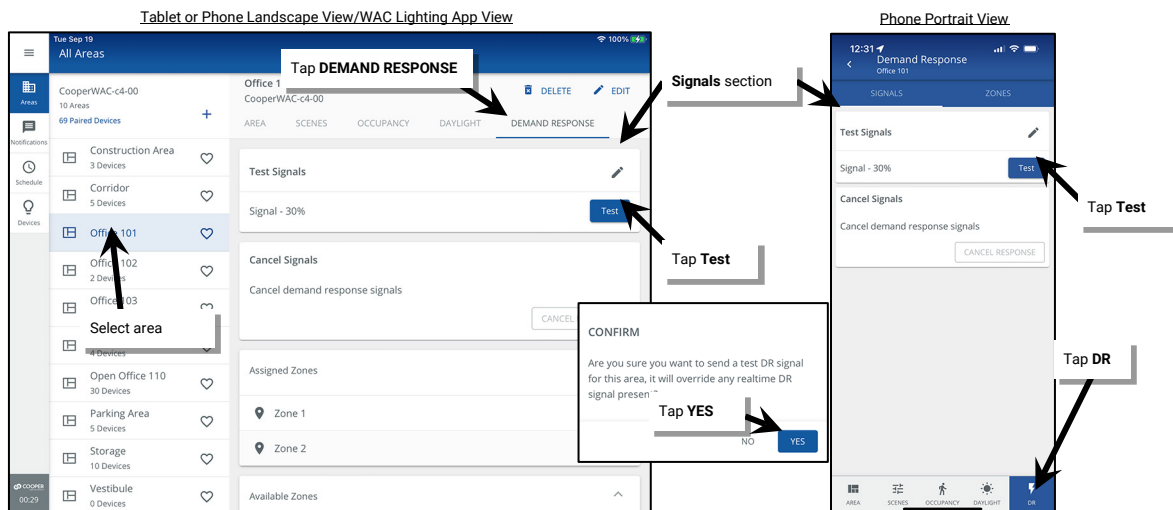
- 1: Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App³³⁸, login to the WaveLinx Area Controller as the administrator user.
- 2: Select the desired area, tap the **DEMAND RESPONSE** option, and locate the **Zones** section.
- 3: The **Assigned Zones** section will show the zones that operate from the occupancy set while other zones in the area will be in the **Available Zones** area. Tap **remove**  to remove a zone or tap **add**  to add a zone.³³⁹



Testing Demand Response

The WaveLinx App contains a built-in test feature for verifying that demand response levels are set correctly. When activated, **ALL areas in that WaveLinx Area Controller** will respond with the defined zone reductions. To test demand response:

- 1: Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App³³⁸, login to the WaveLinx Area Controller as the administrator user.
- 2: Select any area, tap the **DEMAND RESPONSE** option, and locate the **Signal** section.
- 3: Tap the **Test** button and then tap **YES** on the message screen that appears.



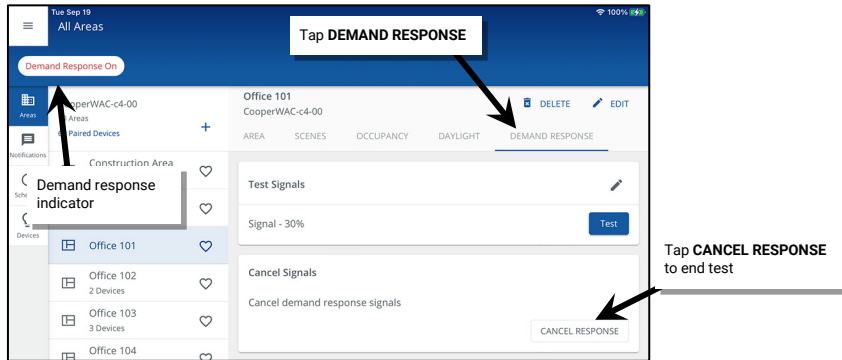
³³⁷ Receptacle zones allowing assignment for Demand Response is supported in the WAC2 (Gen 2) version 12.1.x.x and higher.

³³⁸ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) min. software version 11.x.x.x and higher.

³³⁹ White tuning zones and non-dimmable zones cannot be assigned to reduce with a demand response signal and will not be shown.

During test mode or during an active demand response signal, the WaveLinx App will show a demand response indicator at the top of the screen.

All areas in the WaveLinx Area Controller will respond with the defined demand response behavior limiting commands from other controls to the reduced range. Test mode will automatically time out after 30 minutes or may be manually cancelled by tapping **Cancel Response**. Lighting will then return to the level for the active command.



Quick Links for Common Questions

- I am not using demand response. How do I disable it? See the answer on page 362.
- I want to use demand response. How do I make the connection to my demand response equipment? See the answer on page 363.

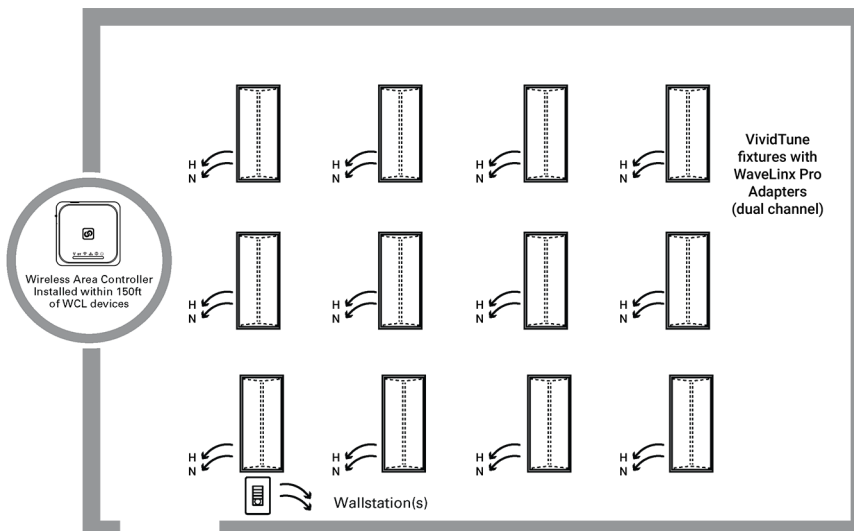
Practical Implementation of White Tuning Control

The WaveLinx system controls tunable white lighting by adjusting the correlated color temperature (CCT). Artificial light sources emit different tones of white light, ranging from warm to cool. In terms of lighting, CCT is measured in degrees Kelvin (K). Warmer, yellower tones of light will have a lower CCT while cooler, bluer tones of light will have a higher CCT. Tunable white lighting fixtures may vary in the supported color temperature range. Refer to the fixture's information for the expected supported range.

Allowing adjustment of color temperature along with the lighting intensity means that lighting can be fully customized to meet the specific needs of the intended task. Tunable white lighting may help maintain alertness and productivity in educational and office environments, assist with recovery and comfort in healthcare facilities, and provide flexibility in retail or other environments that require constant modification to display items in the best light.

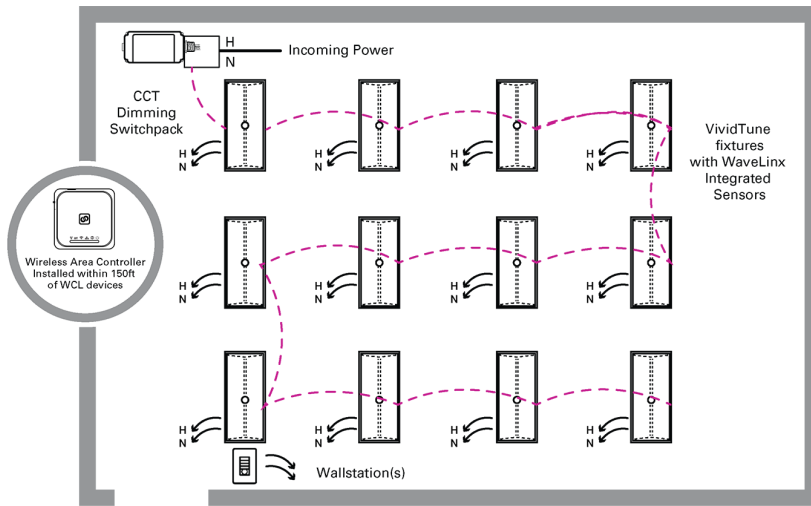
The WaveLinx system controls tunable white lighting using the following devices:

- **WaveLinx PRO Node (dual channel model) or advanced model WaveLinx PRO Integrated Sensor (IS Pro CCT):** The WaveLinx PRO Node's dual channel model and the advanced model WaveLinx PRO Integrated Sensor (IS Pro CCT) support white tuning and intensity control (ON/OFF dimming) within an individual fixture. For the Dual Channel WaveLinx PRO Node, one channel controls the color temperature while the other channel controls the intensity control while the IS Pro CCT also allows for separate controls for dimming and white tuning. Each fixture will have its own Node or an IS Pro CCT allowing for individual control.



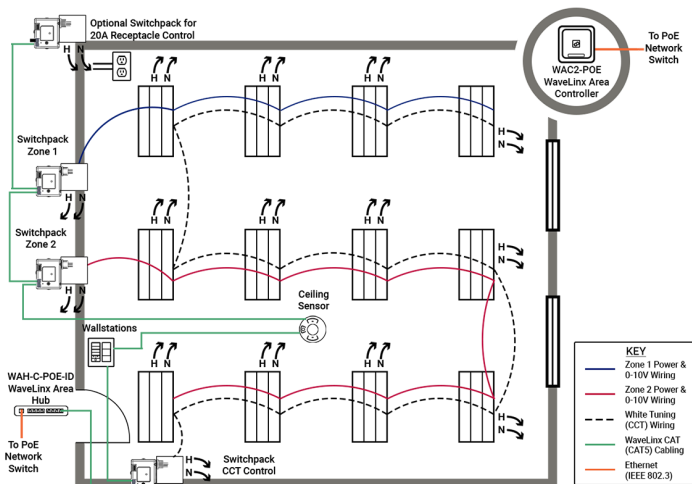
- WaveLinX PRO Universal Voltage Dimming Switchpack:**³⁴⁰ The WaveLinX PRO Universal Voltage Dimming Switchpack (RSP-P-010-347, WSP-MV-010 and WSP-UV-010 [non-emergency model]) supports white tuning when connected to the white tuning control wires of a 0-10V fixture. One switchpack typically controls the color temperature for an entire room of fixtures if they are the same fixture type (the line voltage relay switching lead on the white tuning control switchpack will not be used).

- Some applications may have more than one WaveLinX PRO Universal Voltage Dimming Switchpack connected for white tuning control if fixtures have different supported color temperature ranges, or for ease of routing wiring.
- The intensity control (ON/OFF/dimming) of white tunable fixtures may be done using additional WaveLinX Universal Voltage Dimming Switchpacks. Generally, one switchpack is used for CCT control and one or more are used for ON/OFF/dimming control zones. The intensity control (ON/OFF/dimming) of white tunable fixtures may also be achieved using Integrated Sensors if the fixture offers this option.
- In the below example, each fixture is equipped with a WaveLinX PRO Integrated Sensor. The color temperature (CCT) control wires from each VividTune fixture are connected to a WaveLinX PRO Universal Voltage Dimming Switchpack.



- WaveLinX CAT Dimming Switchpack:** The WaveLinX CAT Dimming Switchpack (RSP-C-010-Z1) supports white tuning when connected to the white tuning control wires of a 0-10V fixture. One switchpack typically controls the color temperature for an entire room of fixtures if they are the same fixture type (the line voltage relay switching lead on the white tuning control switchpack will not be used).

- Some applications may have more than one WaveLinX CAT Dimming Switchpack connected for white tuning control if fixtures have different supported color temperature ranges, or for ease of routing wiring.
- The intensity control (ON/OFF/dimming) of white tunable fixtures may be done using additional WaveLinX CAT Dimming Switchpacks. Generally, one switchpack is used for CCT control and one or more are used for ON/OFF/dimming control zones.
- In the below example, The color temperature (CCT) control wires from each VividTune fixture are connected to one WaveLinX CAT Dimming Switchpack. Additional WaveLinX CAT Dimming Switchpacks control the Power and 0-10V wiring of the zoned fixtures.



³⁴⁰ When using WaveLinX Switchpacks (WSP-MV-010 or WSP-CA-010), installation should be on a junction box and NOT installed on fixture wiring compartment.

Setting Up for Success

VividTune is a color tuning solution already built-in to many Cooper Lighting Solutions fixture models. VividTune fixtures support operation from the dual channel WaveLinX PRO Node and support the use of the advanced Integrated Sensor (IS Pro CCT). Both allow for seamless control of intensity and white tuning in the same device. VividTune fixtures also support operation from a combination of WaveLinX PRO Integrated Sensors to control lighting intensity and the use of a separate WaveLinX PRO Universal Voltage Dimming Switchpacks to control the color temperature or an entirely externally wired solution using either WaveLinX PRO Universal Voltage Dimming Switchpacks or WaveLinX CAT Dimming Switchpacks.

During initial setup, follow the steps in the sections below for a successful implementation of white tuning:

If using WaveLinX PRO Node (dual channel) OR if using advanced model WaveLinX PRO Integrated Sensors (IS Pro CCT)	If using WaveLinX PRO Integrated Sensors and a CCT Control Switchpack or externally wired solution using WaveLinX PRO Universal Dimming Switchpacks or WaveLinX CAT Dimming Switchpacks
<ul style="list-style-type: none"> • Create the dimming zone(s) needed for the area. (p. 134) • Create the white tuning zone(s) needed for the area. (p. 134) • Identify each dual channel WaveLinX PRO Node or advanced model WaveLinX PRO Integrated Sensors (IS Pro CCT) and when adding them, select the dimming zone for the intensity control and the white tuning zone for the white tuning control. (p. 150) • Add other devices to the area as needed and proceed with programming. 	<ul style="list-style-type: none"> • Create the dimming zone(s) needed for the area. (p. 134) • Create the white tuning zone(s) needed for the area. (p. 134) • Identify all fixture integrated sensors or the WaveLinX Switchpacks controlling the on/off and dimming functions in the room and assign them to the dimming zone(s). (p. 146) • Configure the WaveLinX PRO Universal Voltage Dimming Switchpack or WaveLinX CAT Dimming Switchpack that is controlling the White Tuning(p. 154): <ul style="list-style-type: none"> • Identify the switchpack controlling the color temperature and assign it to the AREA. • Edit the switchpack in the area, changing the type to white tuning and defining the color temperature range for the fixture. • Assign the white tuning switchpack to the white tuning zone. • Add other devices to the area as needed and proceed with programming.

Understanding WaveLinX White Tuning Zone Behavior

The WaveLinX system has specific characteristics for how white tuning zones natively operate and how programming should be applied:

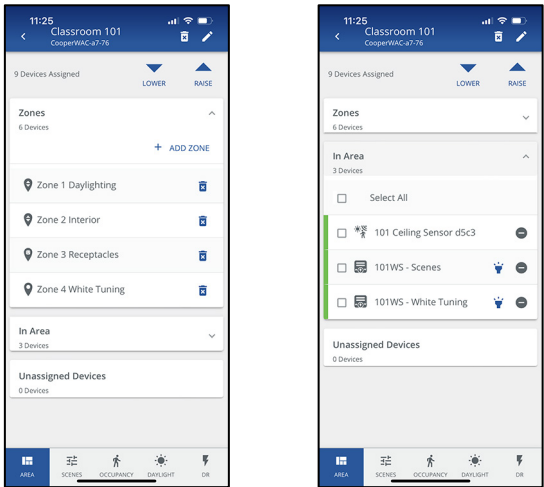
- A single area will typically have one white tuning zone. It is rare (although possible) to desire to have fixtures within the same space at different color temperatures at the same time.
- If there are different supported color temperature ranges amongst fixtures within the same space, the white tuning zone can be limited to a range that is supported amongst all the devices. For instance, if one device supports a range of 2700K-6500K and another device supports a range of 3000K-5000K, first, set the individual devices to their actual ranges. Then, at the white tuning zone, set the zone to a range of 3000K to 5000K. By limiting the zone to a range that all the devices support, the lighting will have a uniform color temperature response, despite the different device ranges.
- White tuning zones may be programmed to respond to scenes along with dimmable and non-dimmable lighting loads. Scenes may be used to control intensity and to change color temperature to meet a specific application.
- White tuning zones may be ignored from scenes to allow for separation of the intensity control and the color tuning control. This can aid in preventing unintentional color temperature shifts when lighting intensity is adjusted.
- WaveLinX allows commands to be issued to lighting zones with zone level, zone raise, and zone lower commands. Zone commands can be issued to a specific zone, to **ALL** zones in an area, or to **AFFECTED** zones in the area. If a zone command is issued to **ALL** or **AFFECTED** zones, white tuning zones automatically ignore the command and will remain at the previous color temperature. A white tuning zone will respond to a zone command if it is specifically programmed to control only the white tuning zone. This helps ensure that color temperature changes occur only when intended.
- White tuning zones are automatically excluded from being controlled by daylighting and demand response strategies. They may optionally be programmed to respond to occupancy sensor commands.

The following sections highlight some practical applications on implementing white tuning control.

Application 1: Separate Manual Controls for Intensity and White Tuning

One approach to implementing lighting and white tuning control is to provide manual controls that separate the lighting intensity from the white tuning. Dimming and ON/OFF response might be controlled by standard occupancy and daylighting strategies in addition to traditional manual wallstation scene and raise/lower controls. White tuning is controlled from a different manual wallstation that allows the occupant to adjust to the color temperature to meet their needs. This is a common application in classrooms and conference rooms.

Here is a sample of how this might be programmed in the WaveLinX system:



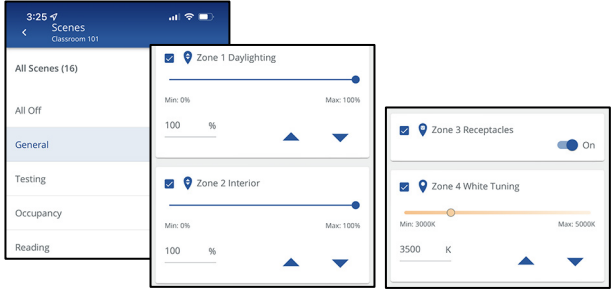
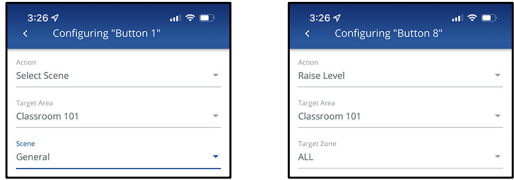
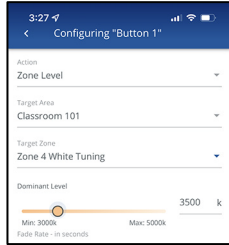
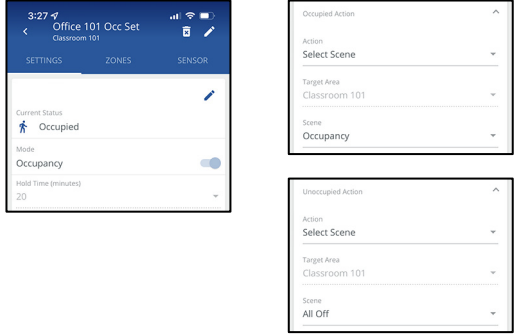
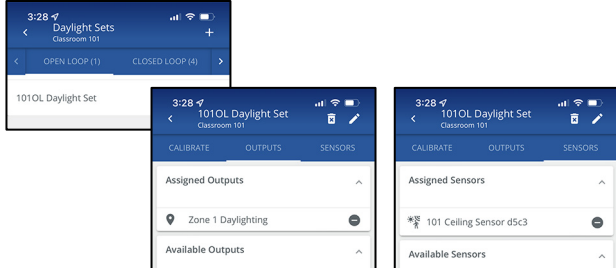
Zones:

- Zone 1: Dimmable: Daylight Zone
- Zone 2: Dimmable: Interior Zone
- Zone 3: Receptacle Zone (Optional)
- Zone 4: White Tuning Zone

Controls:

- Battery Powered WaveLinX Ceiling Sensor for occupancy and daylight control
- Wallstation 1: Scene and raise lower control for intensity
- Wallstation 2: Zone control for white tuning

Items	Programming Assigned	
Zones 1 -3	<ul style="list-style-type: none">• Devices are assigned to these zones according to their location.	<div><div>Zone 1 Daylighting</div><div>Zone 2 Interior</div><div>Zone 3 Receptacles</div></div>
Zone 4 White Tuning Zone	<ul style="list-style-type: none">• Set for White Tuning• Set to support the white tuning range of the connected fixtures. For this example, the fixture range is 3000K – 5000K.	<div><div>Name</div><div>Zone 4 White Tuning</div><div>Select Zone Type</div><div>TunableWhite</div><div>Minimum Level in k</div><div>3000</div><div>k</div><div>Maximum Level in k</div><div>5000</div><div>k</div></div>
White Tuning Control	<ul style="list-style-type: none">• Set device(s) to a white tuning type.• Set to the white tuning range of the connected device(s). For this example, the fixture range is 3000K – 5000K.• Assign the device(s) to white tuning zone 4.	<div><div>Actual Level</div><div><div></div><div>3500</div><div>K</div></div><div>Actual Level</div><div>3500 K</div><div>Occupancy Set</div><div>None</div><div>Type</div><div>White Tuning</div><div>CHANGE TYPE</div><div>Minimum Level</div><div>3000 K</div><div>Maximum Level</div><div>5000 K</div></div> <div><div>3:22</div><div>Zone 4 White Tuning</div><div>White Tuning Zone</div><div><div></div><div>3500</div><div>k</div></div><div>Min: 3000 k</div><div>Max: 5000 k</div><div>Devices in Zone</div><div><div>Select All</div><div><div>Ch2</div><div>S-WL Pro Adapter - 2C</div><div></div></div><div><div>Ch2</div><div>S-WL Pro Adapter - 2C</div><div></div></div></div></div>

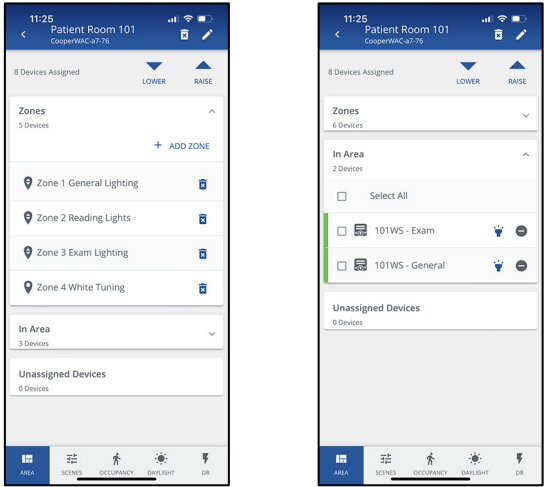
Items	Programming Assigned
<p>Scene Programming</p>	<ul style="list-style-type: none"> Scenes are programmed for each of the intensity levels issued by the scene wallstation and occupancy sensor. For each scene, white tuning zone 4 is ignored (unchecked). <p>Optionally, the occupancy sensor may control the white tuning zone to reset to a specified color temperature when the space is initially occupied. The white tuning zone must be assigned to the occupancy set and a color temperature level defined for zone in the occupied scene.</p> 
<p>Wallstation 1: Scene and Raise/Lower Control</p>	<ul style="list-style-type: none"> Set each button to issue the desired scene command Set the raise/lower buttons to control ALL or AFFECTED zones of the area. White tuning zones will automatically ignore these commands. 
<p>Wallstation 2: White Tuning Control</p>	<ul style="list-style-type: none"> Set each button to issue a zone level command to the white tuning zone and set the desired color temperature (in Kelvin). 
<p>Occupancy Sensor</p>	<ul style="list-style-type: none"> The occupancy sensor set is configured to issue scene commands for the occupied and unoccupied actions. Optionally, the sensor could be set for vacancy mode to issue only an unoccupied action. <p>Optionally, the occupancy sensor may control the white tuning zone. The white tuning zone must be assigned to the occupancy set and a color temperature level defined for zone in the occupied scene.</p> 
<p>Daylight Control</p>	<ul style="list-style-type: none"> The WaveLinx PRO Ceiling Sensor is assigned to an open loop daylight set. The daylight zone is assigned for daylight control and calibrated for the location. <p>An Integrated or Tilemount Sensor can be assigned to perform open loop daylighting instead of the WaveLinx PRO Ceiling Sensor used in this example.³⁴¹</p> <p>Closed loop daylighting may also be used instead of open loop If using Integrated or Tilemount Sensors. Refer to "Calibrating all Closed Loop Daylight Sensors in an Area" on page 235 for detailed setup instructions.</p> 

³⁴¹ WaveLinx Integrated Sensor and Tilemount Sensor assignment for open loop control is contingent on the use of WAC2 (Gen 2) v10.0.x.x and higher updated device firmware. Low-Voltage Integrated Sensors do not support this feature.

Application 2: White Tuning Controlled by Automatic Timed Events

Another strategy for implementing lighting and white tuning control is to automate color temperature progression while allowing manual control of the lighting intensity. In this application, occupancy sensors, daylight sensors and manual controls could be used to adjust the intensity levels. White tuning is controlled automatically by daily scheduled events that automatically adjust the color temperature. Healthcare facilities may use this approach to potentially promote healing by mimicking daylight color temperature progression while office or education locations may use the approach to potentially enhance productivity during peak hours.

Here is a sample of how this might be programmed in the WaveLinX system:



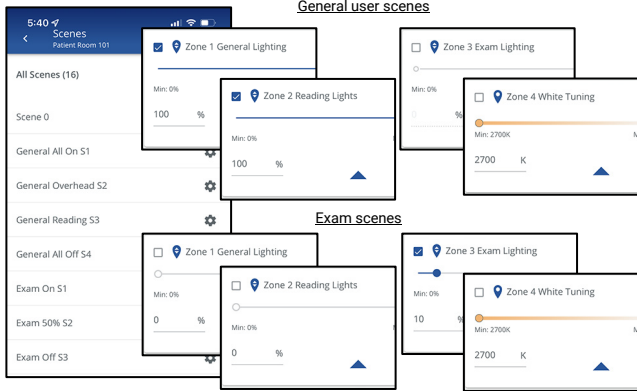
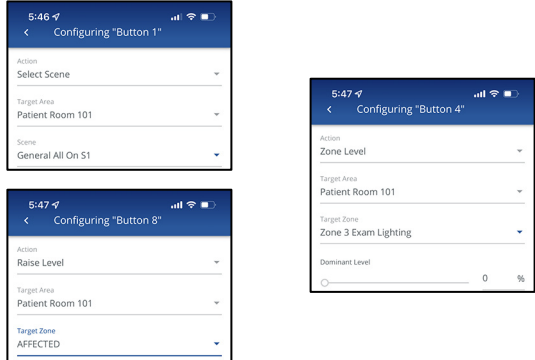
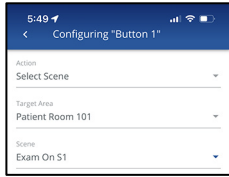
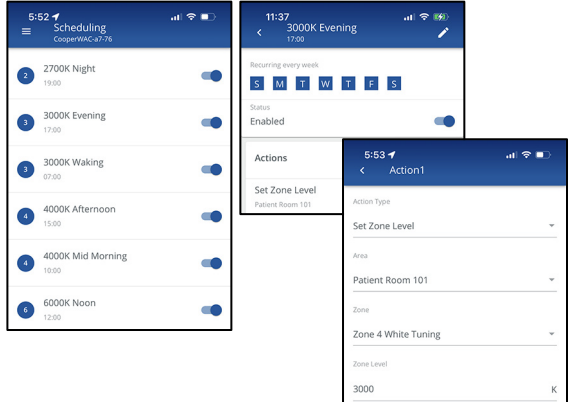
Zones:

- Zone 1: General Lighting Zone
- Zone 2: Reading Lights
- Zone 3: Exam Lighting
- Zone 4: White Tuning Zone

Controls:

- Wallstation 1: General user control: scene and raise lower control of general and reading lights
- Wallstation 2: Exam lighting control. (Could optionally control general and reading lighting as well as exam lighting)
- Schedule Events: Color temperature control

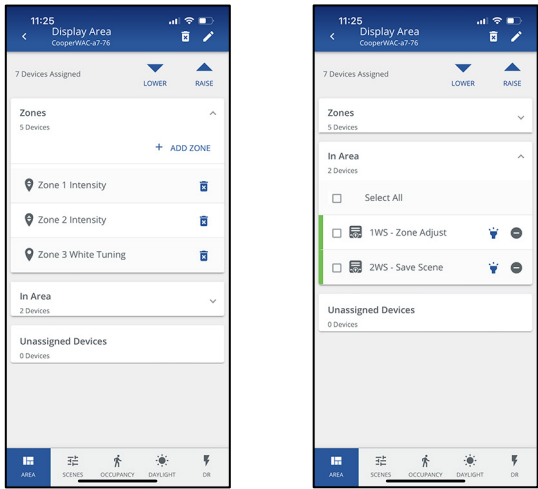
Items	Programming Assigned	
Zones 1 -3	<ul style="list-style-type: none">• Devices are assigned to these zones according to their location.	<div><div>Zone 1 General Lighting</div><div>Zone 2 Reading Lights</div><div>Zone 3 Exam Lighting</div></div>
Zone 4 White Tuning Zone	<ul style="list-style-type: none">• Set for White Tuning• Set to support the white tuning range of the connected fixtures. For this example, the fixture range is 2700K- 6500K.	<div><div>5:34 Edit Zone Details CCT</div><div>Zone 4 White Tuning</div><div>Select Zone Type TunableWhite</div><div>Minimum Level in k 2700 k</div><div>Maximum Level in k 6500 k</div></div>
White Tuning Control	<ul style="list-style-type: none">• Set device(s) to a white tuning type.• Set to the white tuning range of the connected device(s). For this example, the fixture range is 2700K – 6500K.• Assign the device(s) to white tuning zone 4.	<div><div>Actual Level 3500 K</div><div>Actual Level 3500 K</div><div>Occupancy Set None</div><div>Type White Tuning CHANGE TYPE</div><div>Minimum Level 2700 K</div><div>Maximum Level 6500 K</div></div> <div><div>5:35 Zone 4 White Tuning White Tuning Zone</div><div>Min: 2700 k Max: 6500 k</div><div>Devices in Zone</div><div>Select All</div><div>Ch.2 S-WL Pro Adapter - 20°</div><div>Ch.2 S-WL Pro Adapter - 20°</div></div>

Items	Programming Assigned
<p>Scene Programming</p>	<ul style="list-style-type: none"> Scenes are programmed for each of the intensity levels issued by the general user wallstation and the exam lighting wallstation. For the general user wallstation scenes, ignore zone 3 exam lighting. For the exam lighting wallstation scenes, ignore the General or Reading zones. For all scenes, ignore white tuning zone 4. 
<p>Wallstation 1: General User Control</p>	<ul style="list-style-type: none"> The wallstation is set to issue the general user scene commands. One button could be used to issue a zone level 0% command to the exam lighting, allowing the general user to turn OFF the exam lights if they have been left ON. The raise/lower controls are set to control AFFECTED zones of the area to allow raise and lower of the general and reading lighting. Exam lights have been ignored from the general user scenes and will ignore the raise/ lower controls when these scenes are active. White tuning zones will automatically ignore these commands 
<p>Wallstation 2: Exam Lighting Control Station</p>	<ul style="list-style-type: none"> Set each button to issue the scenes programmed for the exam lighting. 
<p>Time Schedule Events</p>	<ul style="list-style-type: none"> Time schedule events are programmed every few hours to issue zone level commands to the white tuning zone. For example, events may progressively shift the color temperature: <ul style="list-style-type: none"> 7:00am: Zone Level 3000K 10:00am: Zone Level 4000K 12:00pm: Zone Level 6000K 3:00pm: Zone Level 4000K 5:00pm: Zone Level 3000K 7:00pm: Zone Level 2700K 

Application 3: White Tuning and Intensity Scenes with Flexible Adjustment

To meet the needs of a changing environment, the WaveLinX system allows for quick adjustments to intensity and white tuning levels in strategies where both the intensity and the color temperature are controlled as part of the same scenes. Quickly change the levels of each zone and save them to scenes using either the WaveLinX App, or with wallstations zone raise and lower commands and save scene commands. This type of control is ideal in environments such as a retail space where lighting needs to be changed frequently to display products in the best possible light.

Here is an example of how this might be programmed in the WaveLinX system:



Zones:

- Zone 1: Intensity Control
- Zone 2: Intensity Control
- Zone 3: White Tuning Zone

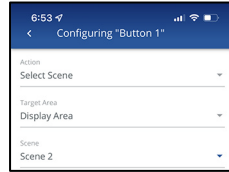
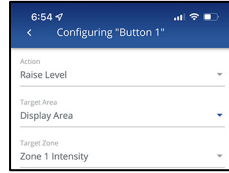
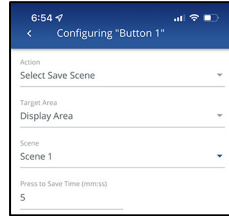
Controls:

There may be any number of controls throughout the space to issue commands to the lighting via scene-based control methods

Adjustment Controls (if not using the WaveLinX App)

- Wallstation 1: Zone Adjustment Control
- Wallstation 2: Save Scene Control

Items	Programming Assigned	
Zones 1 -2	<ul style="list-style-type: none">• Devices are assigned to these zones according to their location.	<div><div>Zone 1 Intensity</div><div>Zone 2 Intensity</div></div>
Zone 3 White Tuning Zone	<ul style="list-style-type: none">• Set for White Tuning• Set to support the white tuning range of the connected fixtures. For this example, the fixture range is 2700K- 6500K.	<div><div>6:49 Edit Zone Details CCT</div><div>Zone 3 White Tuning</div><div>Select Zone Type TunableWhite</div><div>Minimum Level in k 2700 k</div><div>Maximum Level in k 6500 k</div></div>
White Tuning Control	<ul style="list-style-type: none">• Set device(s) to a white tuning type.• Set to the white tuning range of the connected device(s). For this example, the fixture range is 2700K – 6500K.• Assign the device(s) to white tuning zone 3.	<div><div>Actual Level 3500 K</div><div>Actual Level 3500 K</div><div>Occupancy Set None</div><div>Type White Tuning</div><div>Minimum Level 2700 K</div><div>Maximum Level 6500 K</div></div> <div><div>6:50 Zone 3 White Tuning White Tuning Zone</div><div>Min: 2700 k Max: 6500 k</div><div>Devices in Zone</div><div>CH2 S-WL Pro Adapter - 2C</div><div>CH2 E-WL Pro Adapter - 2C</div></div>
Scene Programming	<ul style="list-style-type: none">• Scenes are programmed for each of the desired intensity/color temperature levels to be issued by control devices.• For each scene, Zone 3 White Tuning is included and programmed for the desired color temperature	<div><div>6:52 Scenes Display Area</div><div>All Scenes (16)</div><div>Scene 0</div><div>Scene 1</div><div>Scene 2</div><div>Scene 3</div><div>Scene 4</div><div>Scene 5</div></div> <div><div>Zone 1 Intensity</div><div>100 %</div><div>Zone 2 Intensity</div><div>100 %</div><div>Zone 3 White Tuning</div><div>Min: 2700K</div><div>6500 K</div></div>

Items	Programming Assigned	
Control Devices	<ul style="list-style-type: none"> Any devices or events that issue commands are programmed to issue the appropriate scene. 	
Wallstation 1: Zone Adjustment Control	<ul style="list-style-type: none"> Two buttons will be used for every zone. In this example, there are three zones. This requires the use of a 6-button station. Each pair of buttons is programmed to issue a raise or lower to one of the three zones. 	
Wallstation 2: Scene Adjustment Control	<ul style="list-style-type: none"> Each scene that requires modification will need one button on the wallstation. In this application, five scenes are being used so a 5-button station would be used. Program each button to issue the action type Select Save Scene, to one of the scenes being used. 	
How to use the adjustment wallstations	<ul style="list-style-type: none"> First, quickly press and release (less than 5 seconds) the Select Save Scene button for the scene being adjusted. This will issue the scene command. Next, use the individual zone raise and lower buttons to adjust each zone to the desired lighting intensity and color temperature. Making sure to use the button that is associated with the scene being reprogrammed, press, and hold the Select Save Scene button for at least 5 seconds. This will save the new levels to the scene. 	

Modifying Power Sensing Devices for Emergency Device Operation

Some WaveLinx hardware is UL924 approved for control of emergency fixtures. This allows the emergency fixtures to operate like any other fixture in the space unless there is an interruption of normal power. Upon detection of loss of normal power, the device enters Emergency Mode, forcing the emergency fixture to full brightness until normal power returns.

Modifying WaveLinx CAT Emergency Power Sensing Devices

In WaveLinx CAT operation, a WaveLinx CAT Dimming Switchpack wired to a normal power circuit can be programmed to send out a periodic signal that the UL924 Emergency control device listens for. WaveLinx version 14.1.x.x and above allows setup of the normal device Power Sensing signal from the WaveLinx Mobile App.

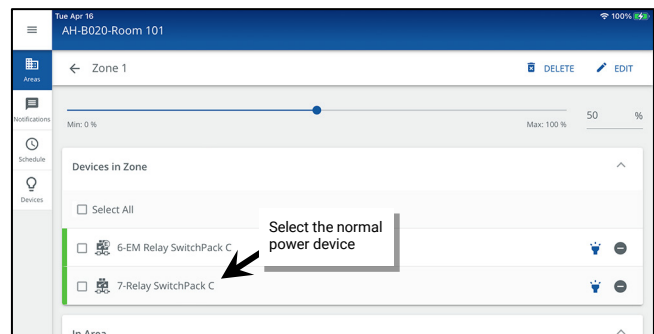
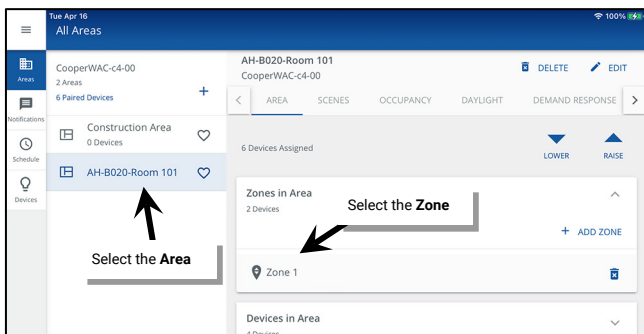
Enabling/Disabling Power Sensing in the WaveLinx CAT Dimming Switchpack (RSP-C)

In the WaveLinx CAT architecture, **one** WaveLinx CAT Dimming Switchpack (RSP-C) is used to send the Power Sensing signal to the WaveLinx CAT Emergency Dimming Switchpack(s) (ESP-C) on the same CAT bus.

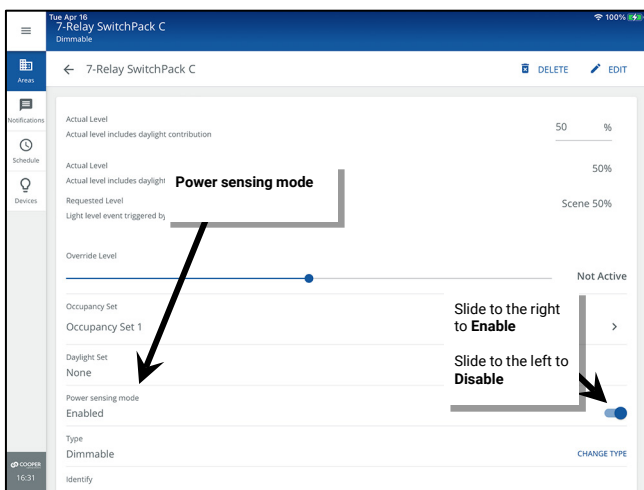
The RSP-C switchpack must be physically connected to the same CAT bus as the ESP-C switchpack(s) through the same Area Hub port. It cannot be connected through another port or Area Hub. The RSP-C switchpack does not need to be assigned to the same WaveLinx area as the ESP-C switchpack.

To enable or disable power sensing in a WaveLinx CAT Dimming Switchpack:

- 1: Determine which normal power WaveLinx CAT Dimming Switchpack will be the device to send the Power Sensing signal.
- 2: In the **All Areas** list, select the standard or partitioned area that the normal power WaveLinx CAT Dimming Switchpack is assigned to. Tap on the device's **zone** and locate and then tap the device to open it.



- 3: Scroll down to **Power sensing mode** and then slide the switch to the right to **Enable** (blue) or to the left to **Disable** (gray).



Operation of the WaveLinx CAT Emergency Dimming Switchpack (ESP-C)

Out-of-the-box, WaveLinx UL924 Emergency control devices will remain in the emergency state until a Power Sensing device is assigned.

For proper operation, wire the WaveLinx CAT Emergency Dimming Switchpack (and its connected load) to an emergency circuit. Wire the power sensing WaveLinx CAT Dimming Switchpack to a normal circuit. Both devices must be connected to the same WaveLinx CAT bus. Only one WaveLinx CAT Dimming Switchpack on the CAT bus should be placed in Power Sensing mode. The Power Sensing signal will be monitored by

all Emergency Dimming Switchpacks on the same CAT bus.

Once a WaveLinx CAT Dimming Switchpack is enabled for Power Sensing Mode, it begins to broadcast a power signal beacon across its attached CAT bus.

If the power signal beacon is present, the WaveLinx CAT Emergency Dimming Switchpack will operate in normal mode, responding to commands in the WaveLinx system like any other device. In the event of a power loss or communications disruption on the CAT bus that causes the loss of the power signal beacon, the WaveLinx CAT Emergency Dimming Switchpack will go to Emergency Mode. The attached load will turn ON to 100% output until the power signal beacon returns.

Once the power signal beacon returns, the WaveLinx CAT Emergency Dimming Switchpack will return to normal mode operation, resuming the last light level.

Using the WaveLinx Apps to Control Lighting

The WaveLinx Mobile App and the WaveLinx WAC Lighting App³⁴² allow the administrator to control paired WaveLinx PRO devices, WaveLinx LV devices, and discovered WaveLinx CAT devices from the app. In addition, the WaveLinx Mobile App allows the administrator or facility occupants to have personal control of the lighting in their area. Administrators can also use onboard app controls in partitioned areas to simulate the wall open and close signals. Use this section to:

- Connect the WaveLinx Mobile App to a WaveLinx Area Controller as a personal control user.
- Assign a favorite area to open automatically for each personal control user.
- Control devices from the WaveLinx Mobile App or WaveLinx WAC Lighting App in standard areas and in partitioned areas
- Simulate wall open and close signals in partitioned areas.^{343, 344}

Connect the WaveLinx Mobile App to a WaveLinx Area Controller as a Personal Control User

The use of Personal Control Users is geared toward the WaveLinx Mobile Application use. While it is possible to login as a personal control user (tenant) account using the WaveLinx WAC Lighting App, initial access to the WAC webpage to launch the lighting app requires the use of the administrator login and password.

Personal Control Users have limited access to features. Note that partitioned areas may not be accessible for personal control users.

The WaveLinx Area Controller supports up to 31 concurrent user connections. However, only one administrator account may be logged in at a time. The below procedure describes connecting with the default personal control user account. Additional users and passwords may be defined to allow users to have unique usernames and passwords for system access. Please see “Adding a New User Account” on page 296 for details on creating personal user (tenant) accounts.

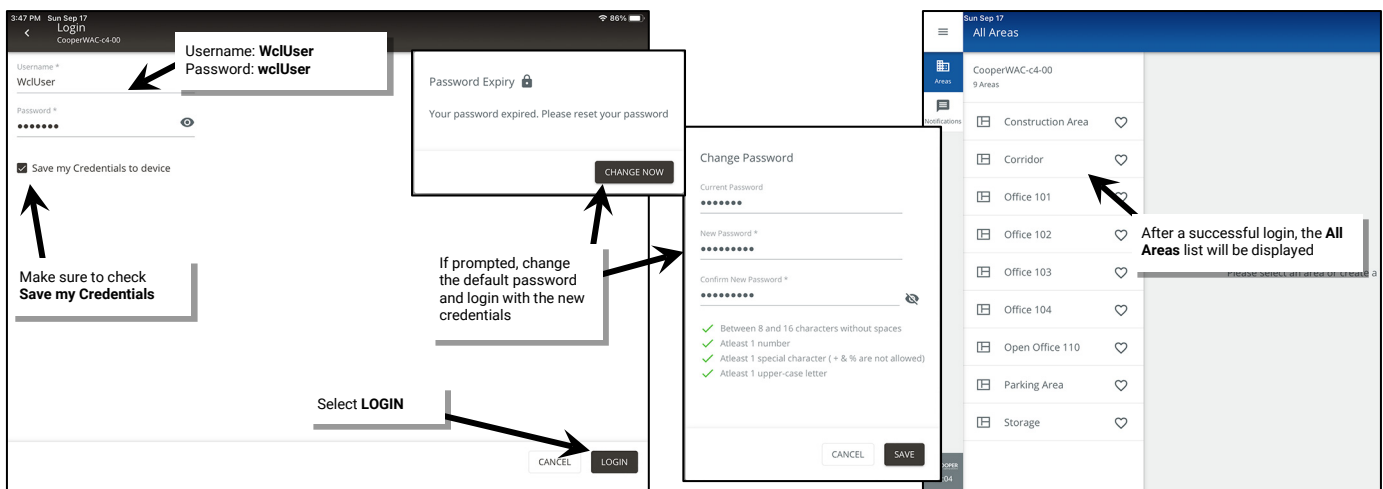
To establish an initial connection, on the user’s smartphone or tablet, follow the procedures in the section “WaveLinx Area Controller Login using the WaveLinx Mobile App” on page 106 to establish a connection between the WaveLinx Mobile App and the WaveLinx Area Controller. When prompted for log in credentials, instead of entering the information for the administrator, enter the username and password for the default personal control user or a custom defined user account (these are case sensitive).

- Default Personal Control Username: **WclUser**
- Default Personal Control Password:³⁴⁵ **wclUser**

Select the option to save credentials to remember the credentials automatically on this device for future connection and then select **Login**.

If this is the first login for the WclUser user, a password change may be forced. If prompted to change the password, follow the instructions on screen to set a complex password. Use the new password to login. Important: Select a password that can be remembered as it will be used from this point forward when using the WclUser username.

After a brief refresh period, the **All Areas** list will be displayed indicating a successful connection.



³⁴² The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

³⁴³ Partitioned area features require a WAC2 (Gen 2) minimum software version 14.1.x.x.

³⁴⁴ This feature will not operate if a WaveLinx CAT Contact Closure Module input is being used for a wall open/close signal input.

³⁴⁵ For security purposes, update the default password. Users should set a complex password when changing passwords. See “Modifying Existing User Accounts and Passwords” on page 297 for this procedure.

Quick Links for Common Questions

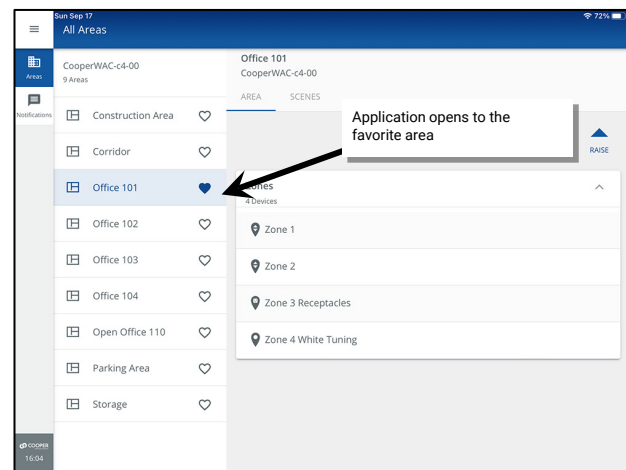
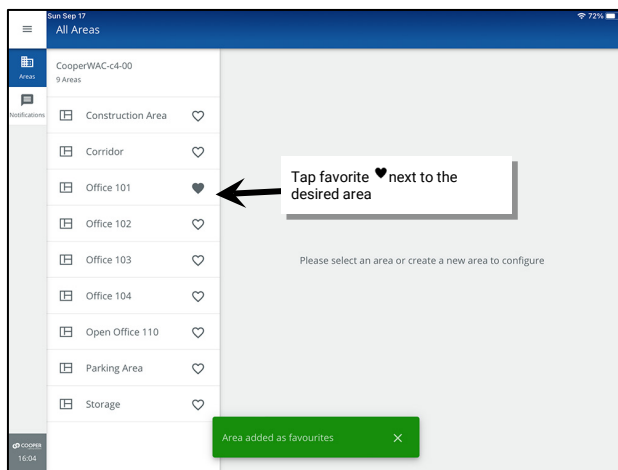
- I previously logged in on my mobile device as an administrator user and saved my credentials. Now I need to log in as the personal control user. How do I switch users? See the answer on page 362.
- How do I change the default password for the user? See the answer on page 297.
- How do I create additional users? See the answer on page 296.
- When I open the Mobile App, I get an error message. What do I do? See the answer on page 362.

Assigning a Favorite Area

If using personal control from different user mobile devices, each user's mobile device can be set to open the WaveLinx Mobile App to a favorite area by default for quick and easy access to lighting and receptacle loads in their location. Favorite area information is stored on the device and not linked to the mobile account. Any user logged in to the same mobile device will share the favorite area.

To assign a favorite area:

- 1: On the user's mobile device, open the WaveLinx Mobile App and establish a connection with the WaveLinx Area Controller as the personal control user.
- 2: In the list of areas locate the desired area, and then tap **favorite** ♥. The next time the user logs in to the WaveLinx Area Controller, the application will open to the favorite area.



Controlling Lighting from the WaveLinx Apps

The WaveLinx WAC Lighting App also allows administrators to control lighting and devices in any space. Personal control or tenant users also allows the occupant of the space more limited control within defined programmed parameters. Note that personal control or tenant user logins will not be able to access partitioned areas for control of these spaces. Login as the administrator to access control features in partitioned areas.

Occupancy/vacancy sensing, daylighting, and demand response settings will define the range within which the occupant/administrator can:

- Raise and lower the light level of all controlled zones in an area.
- Raise and lower the light level of all controlled sub zones in a partitioned sub area
- Adjust the level of individual zones in an area.
 - Turn ON and OFF individual non-dimmable lighting zones in the area.
 - Turn ON and OFF individual controlled receptacle zones in the area.
 - Adjust the color temperature of individual tunable white lighting zones in the area.
- Trigger pre-programmed scenes for the area.
- Temporarily turn ON, OFF, or adjust the level of an individual control device (administrators only).

To use the control features, connect to a WaveLinx Area Controller using the WaveLinx Mobile App or the WaveLinx WAC Lighting App³⁴⁶.

³⁴⁶ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

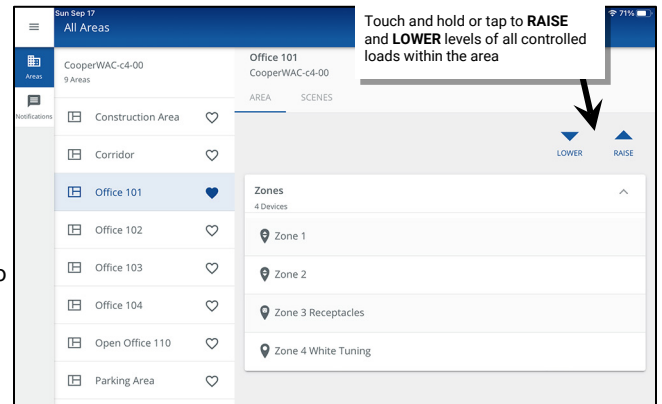
Raise and Lower the Light Level of all Controlled Zones in an Area

To raise or lower levels for all area zones:

Use the raise and lower controls located on the area screen.

- Tap and release to increment/decrement slowly.
- Tap and hold to increment/decrement rapidly.

In a partitioned area, this will control levels for all zones regardless of partition wall open or close status. Partition areas may only be accessible to administrator users.



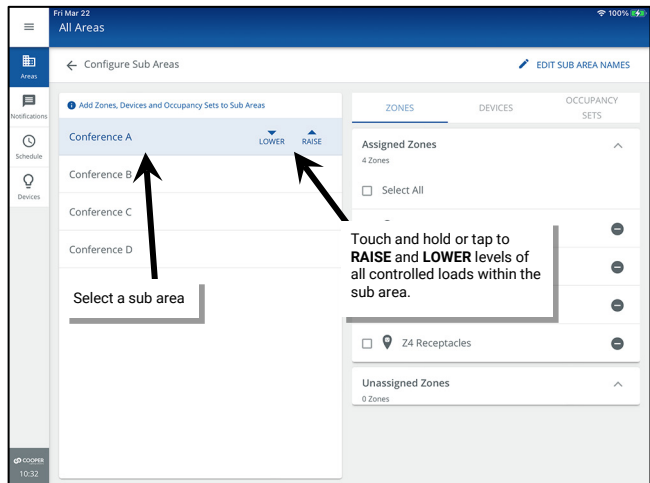
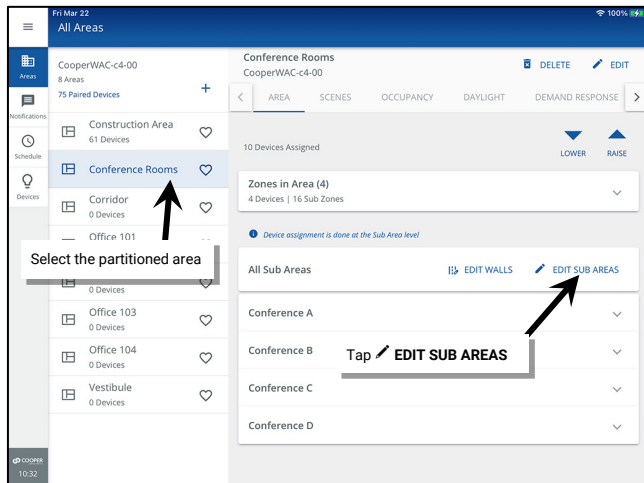
Raise and Lower the Light Level of all Controlled Sub Zones in a Partitioned Sub Area

Partition areas may only be accessible to administrator users.

To control the light level of all controlled sub zones in a partitioned sub area:

Use the controls found in the **Configure Sub Area** screen. In the **All Areas** list, select the **partitioned area** created for this space and then tap on **EDIT SUB AREAS**. Select the desired **sub area**. Use the raise and lower controls located in the sub area's row.

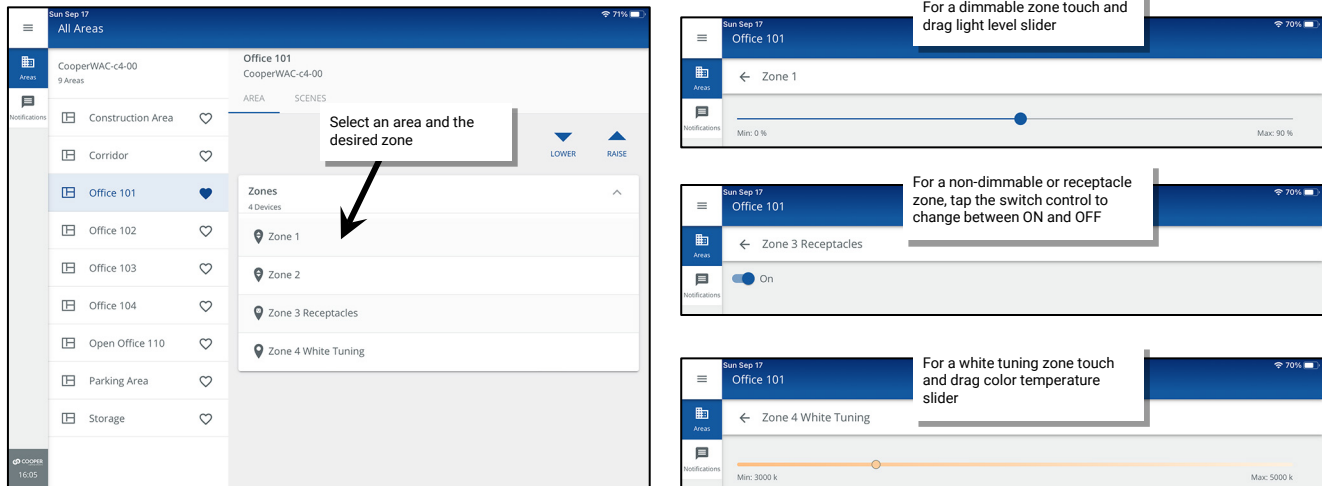
- Tap and release to increment/decrement slowly.
- Tap and hold to increment/decrement rapidly.



Adjust the Light Level of Individual Zones in an Area

To adjust the light level of individual zones in an area:

- Touch and drag the slider for dimmable zones and white tuning zones to adjust the levels.
- Tap on the ON/OFF slider control for non-dimmable or receptacle zones to toggle between ON and OFF.



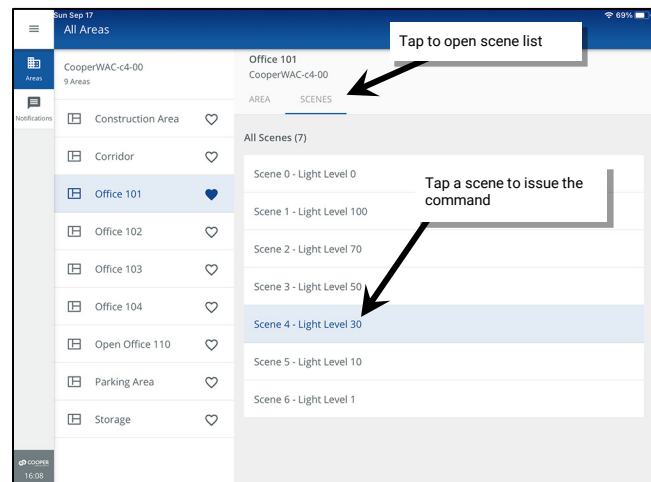
In a partitioned area, this will control levels for all the sub zones that report to that zone regardless of partition wall open or close status. Note: It is not possible to adjust the light level of individual sub zones in a partitioned area. Partition areas may only be accessible to administrator users.

Issue Pre-Programmed Scene Commands to the Area

To issue pre-programmed scenes:

Navigate to the area's scene list. Tap one of the scenes to issue the scene command.

In a partitioned area, this issues the scene to the entire area regardless of partition wall open or close status. Note: It is not possible to issue a scene to a specific sub area in a partitioned area. Partition areas may only be accessible to administrator users.



Issue a Temporary Command to a Specific Control Device

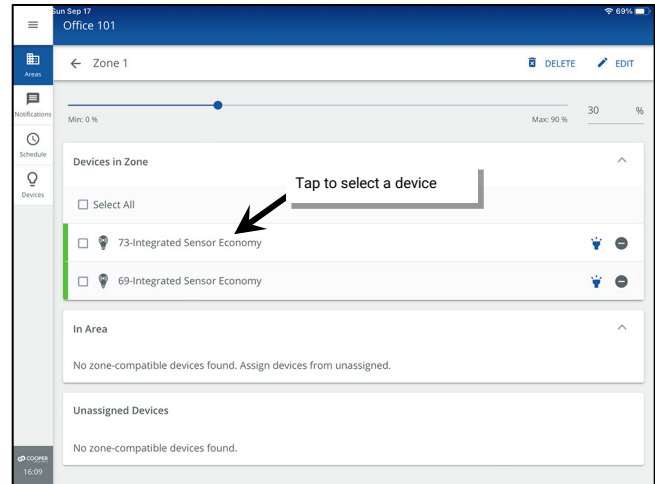
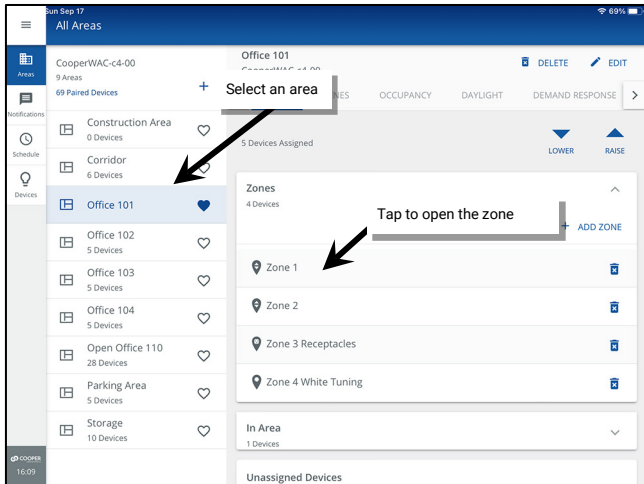
Only administrator users can issue a command to a specific device.

To issue commands to a specific device (**administrators only**):

High priority overrides will bypass demand response or photosensor daylight dimming to allow the device to respond to the commanded level. This is a temporary command that will automatically revert to normal control if the administrator navigates to another screen or after 10 minutes if the user leaves the device screen open.

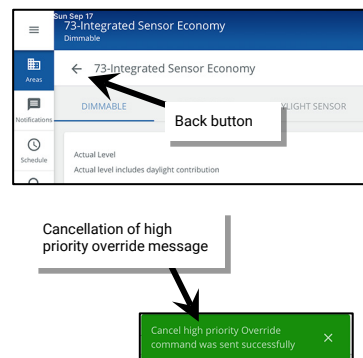
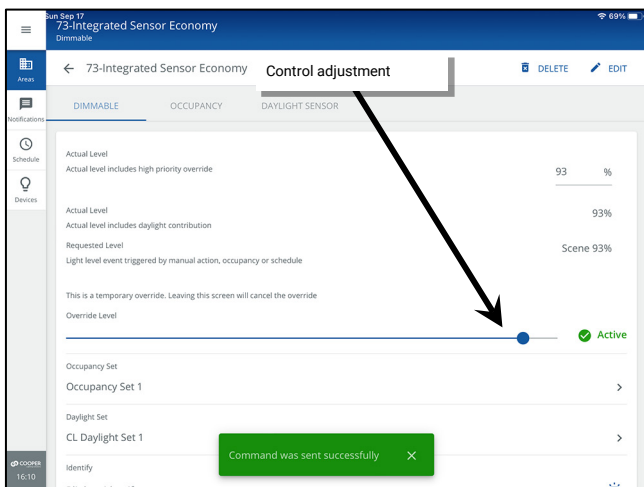
To issue a command to a control device:

- 1: Open the area and select the zone that the device is assigned to.
- 2: Locate the device in the **Devices in Zone** and tap to open.



- 3: Use the provided control adjustment at the top of the device page to temporarily issue the temporary high priority override to the device.

- 4: Once finished, tap the back button to automatically cancel the high priority override, or allow the 10-minute timer to automatically release the high-priority command.



Quick Links for Common Questions

- When I log in as the personal control user, not all the scenes are showing. Why is this happening? See the answer on page 362.
- I selected a scene, but the lighting did not appear to change. Why? See the answer on page 362.
- The lights are dimmed but the personal control screen says that they are at 100%. Why? See the answer on page 362.
- The scene levels are not optimal for me, and I need to adjust them. How do I customize the scene levels to what I want? See the answer on page 167.
- I work between two different spaces. Can I control both rooms through the Mobile App? See the answer on page 362.

Configuring the WaveLinx Touchscreen

The WaveLinx Touchscreen connects to the WaveLinx Area Controller (WAC) through the building LAN. Both devices (touchscreen and WaveLinx Area Controller) must reside within the same network. Each touchscreen requires an IP address (either through DHCP or static assignment) and the use of a **tenant** or personal user account.

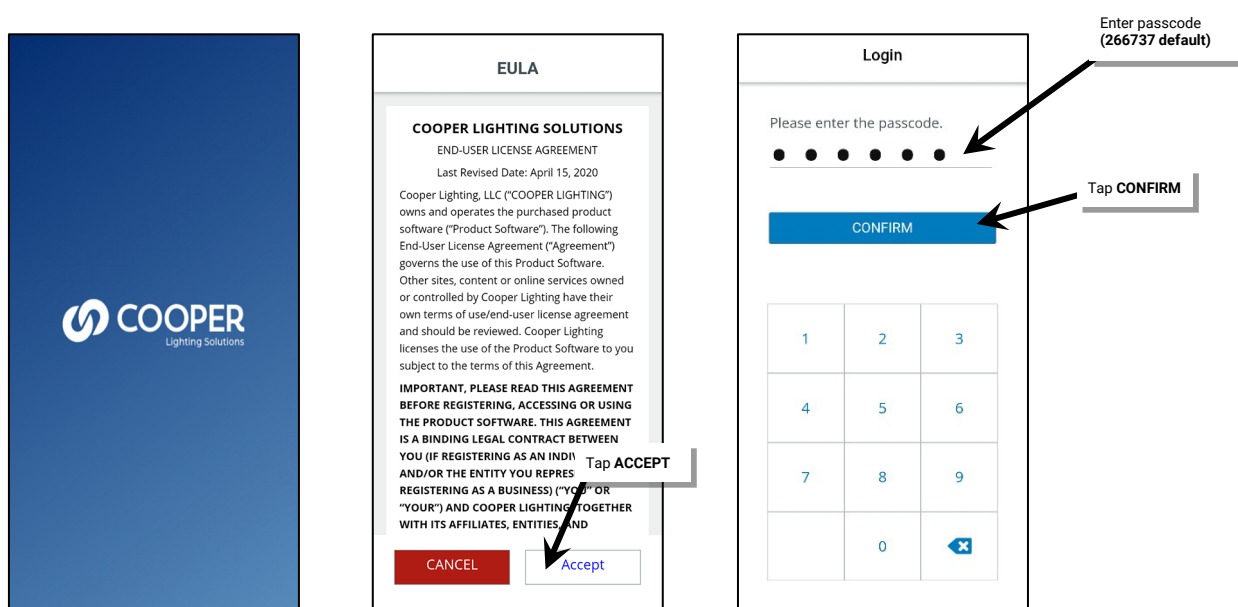
The WaveLinx Touchscreen should have the recommended minimum software version 1.6.0 for successful connection to a WaveLinx Area Controller with the latest firmware. For Touchscreens with version 1.0.x firmware, contact technical support for guidance. Version 1.0.x will not connect successfully without an update.³⁴⁷

Once the touchscreen connects to and logs in to the WaveLinx Area Controller, the areas, scenes/presets, and zones programmed into that WaveLinx Area Controller will display. Customize the touchscreen to limit the display to specific areas, to automatically load a favorite area, and to limit the display of presets/scenes. Adjust display brightness, auto-dim timing, change the default language (Spanish, English, and French), update the touchscreen passcode, and factory reset the touchscreen using the onboard touchscreen controls.

Getting Started: Configuring the Touchscreen for Initial Use

In this section, learn how to make the communications connection between the touchscreen and the WaveLinx Area Controller. This section assumes that the touchscreen is still in its default configuration.

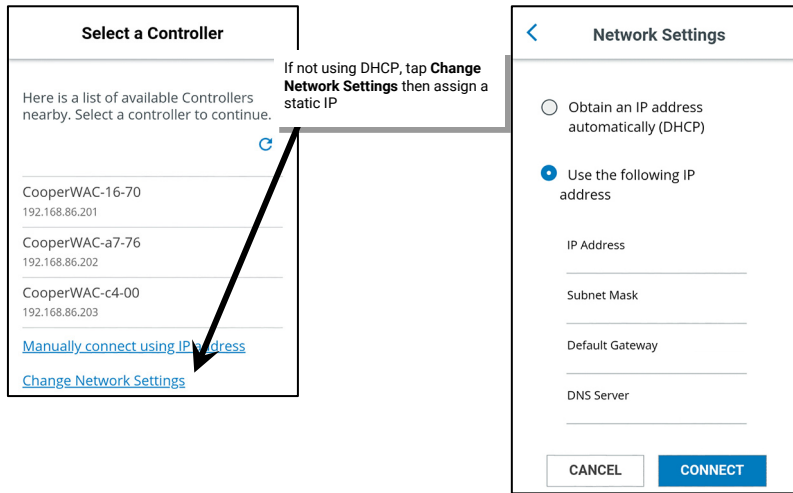
- 1: Before connecting the touchscreen to the network, set up the required **tenant** user account that the touchscreen will use. If there are multiple touchscreens at the facility, each touchscreen will require a unique user account. See "Adding a New User Account" on page 296 for these instructions.
- 2: Connect the touchscreen to the building LAN. The touchscreen must be installed in the same network as the WaveLinx Area Controller and requires a PoE connection.
- 3: Once power is applied, the touchscreen will briefly display a blue screen and then display the End User License Agreement. Tap **ACCEPT** to agree to the conditions and proceed. When prompted to login, enter the default passcode **266737**⁽³⁴⁸⁾ and then tap the **CONFIRM** button.



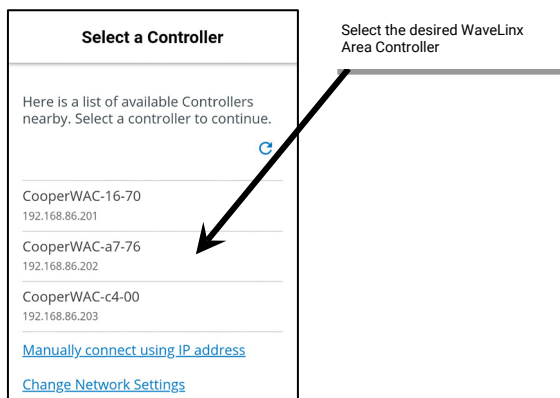
³⁴⁷ To determine touchscreen version, enter the passcode to open the touchscreen but do not login the touchscreen to a WaveLinx Area Controller. The version will display at the bottom of the **Select a Controller** screen.

³⁴⁸ For security, it is recommended that default passcode be changed once the initial touchscreen configuration is complete. Refer to "Changing the Administrator Passcode" on page 289 for step-by-step instructions. In previous touchscreen versions, the default passcode was 328661.

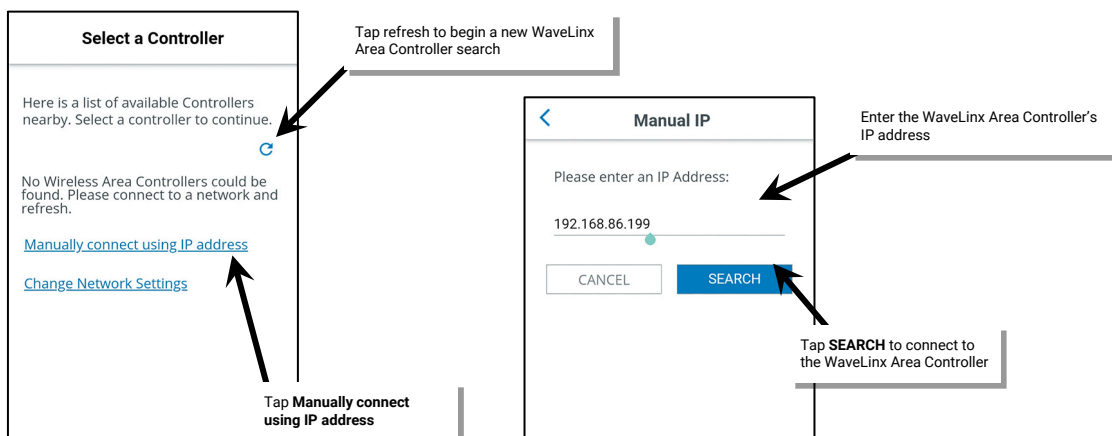
- 4: The touchscreen defaults to using DHCP to obtain its IP address. If the site is using DHCP, no further IP configuration is necessary. For sites that require a statically assigned IP, select the **Change Network Settings** option, and then select the option to **Use the Following IP Address**. Type in the requested information.



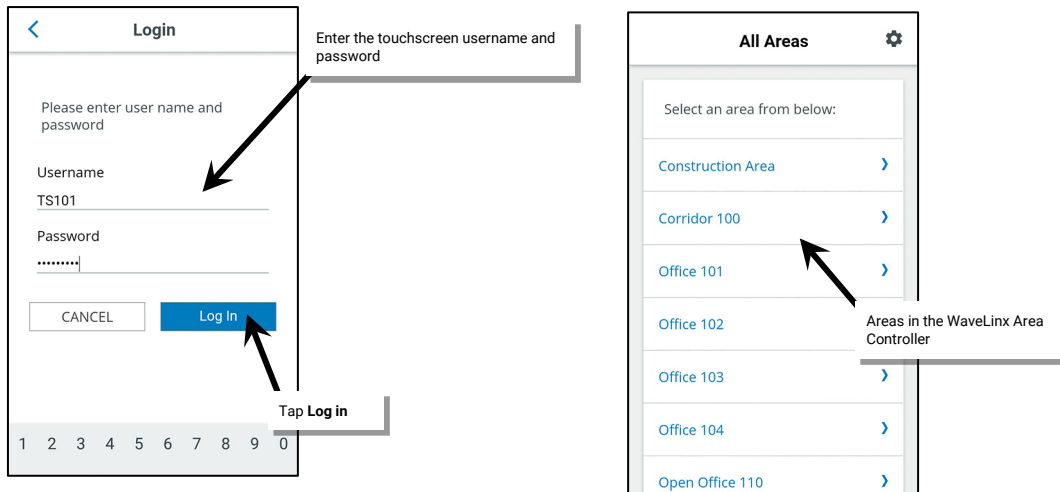
- 5: Once it has an IP address, the touchscreen will search for and then display any WaveLinX Area Controllers that it has found on the network. If the site has more than one WaveLinX Area Controller, multiple WaveLinX Area Controllers may be listed. Select the WaveLinX Area Controller that is programmed for the area(s) that the touchscreen should operate.



If no WaveLinX Area Controllers are found, touch the refresh button to begin the search again. If the touchscreen still does not find the WaveLinX Area Controller, select the option to **Manually Connect Using an IP Address**, and then type in the WaveLinX Area Controller's IP address. Tap the **SEARCH** button to connect to the WaveLinX Area Controller.



6: In the displayed **Login** screen, enter the username and password created for the touchscreen, and then select the **Login** button. Once connected, the touchscreen will display the areas that have been programmed in the WaveLinX Area Controller.



WARNING: Do not log in using an **admin** role password. Only one administrator user may be logged into the system at a time.

The touchscreen can now be used to control lighting in the defined areas. For information on using the touchscreen, refer to “Using the Touchscreen Controls” on page 283.

Configuring the Area(s) that the Touchscreen Displays

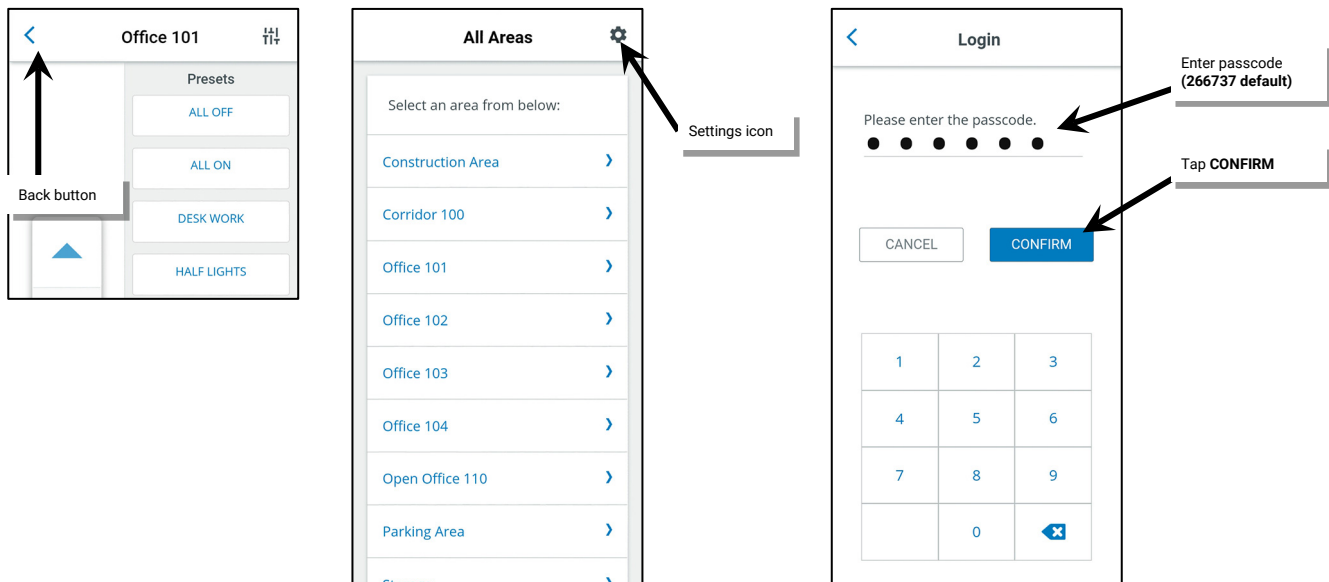
Once the connection between the Touchscreen and the WaveLinX Area Controller is made, the touchscreen will display all areas that are programmed into the connected WaveLinX Area Controller. It is possible to limit the touchscreen to display a specific area, multiple selected areas, and default to opening a favorite area.

This section assumes that the connection has been successfully made between the WaveLinX Area Controller and the touchscreen. It also assumes that the touchscreen is still using the default passcode.

If the touchscreen is displaying an area’s preset page, touch the back button until the **All Areas** screen is displayed.

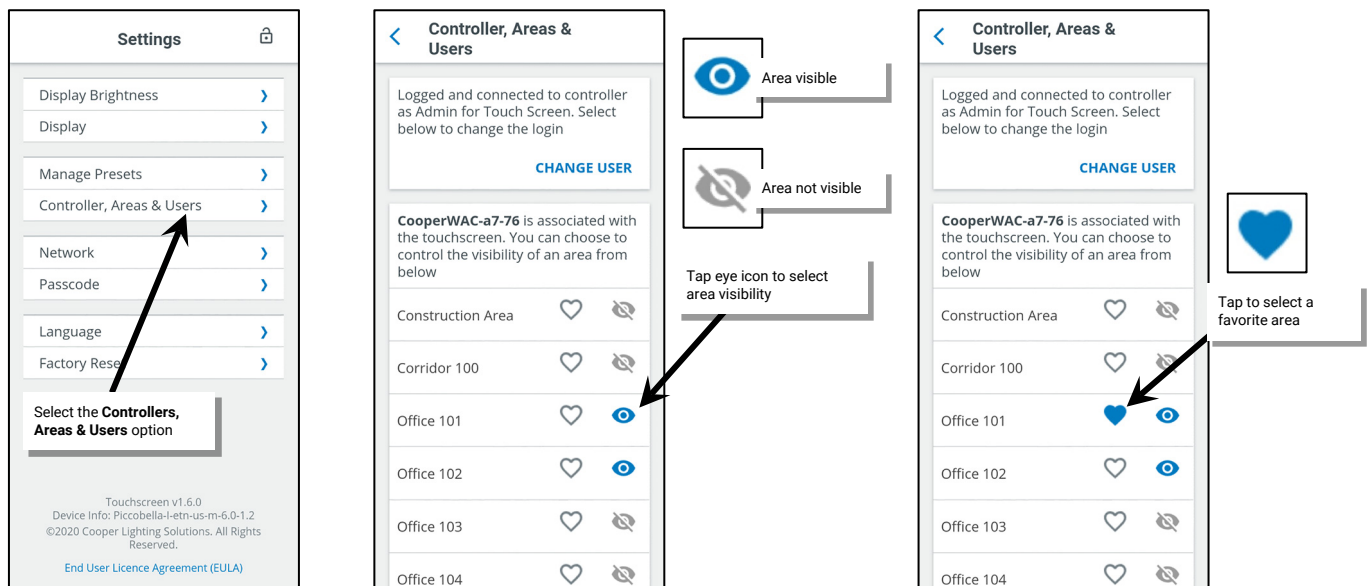
1: From the **All Areas** screen, select the settings gear icon

2: Enter the touchscreen passcode, then tap **CONFIRM**. The default passcode is 266737 ⁽³⁴⁹⁾.

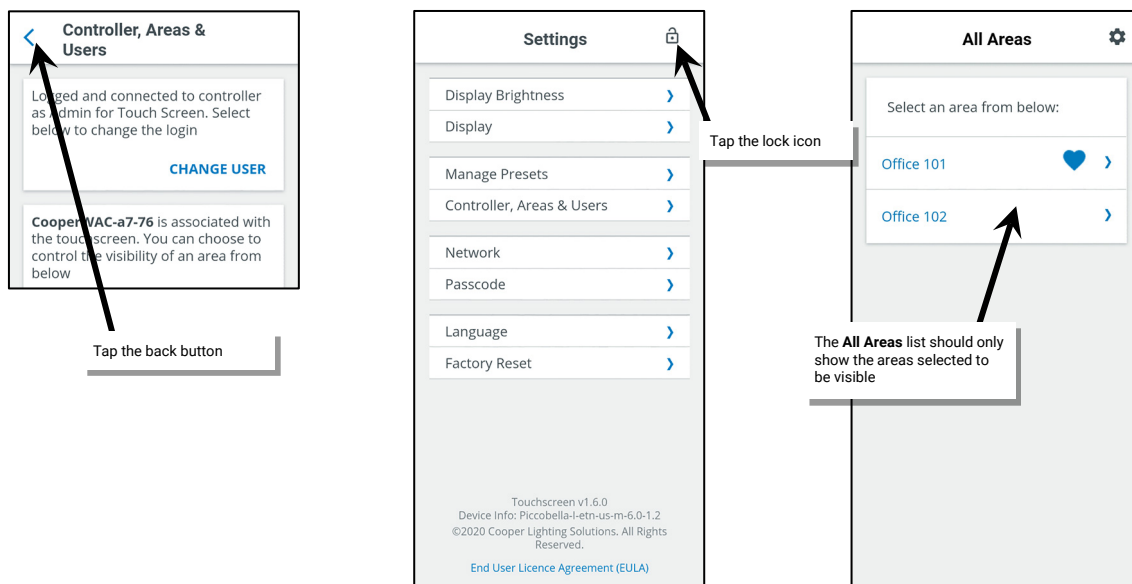


³⁴⁹ For security, it is recommended that default passcode be changed once the initial touchscreen configuration is complete. Refer to “Changing the Administrator Passcode” on page 289 for step-by-step instructions. In previous touchscreen versions, the default passcode was 328661.

- 3: In the **Settings** screen, tap the **Controllers, Areas & Users** option.
- 4: Turn on or off the visibility of the areas displayed by tapping on the eye icon next to each area. The area will be visible if the icon is dark blue. Hide the area by tapping on the icon. The icon will turn gray. Touch and drag the display up or down to access areas beyond the current screen view.
- 5: Select a favorite area by selecting the heart icon next to the desired area. After a power up or restart, the touchscreen will automatically reboot to display the controls of the favorite area.



- 6: Tap the back button to exit and save the changes, and then tap the lock icon to exit the settings screen. The touchscreen should now show only the visible areas in the **All Areas** display.



The touchscreen can now be used to control lighting in the defined areas. For information on the screen controls, refer to "Using the Touchscreen Controls" on page 283.

Note that partitioned areas will allow control from the Touchscreen with limited functionality. Commands from a Touchscreen to scenes and zones in a partitioned area will control lighting in the entire area regardless of partition wall open or close status.

Quick Links for Common Questions

- How do I change the area name(s) that is displayed? The area names are stored in the WaveLinx Area Controller. For information on changing an area name, see "Renaming Standard Areas, Zones, and Devices" on page 169.

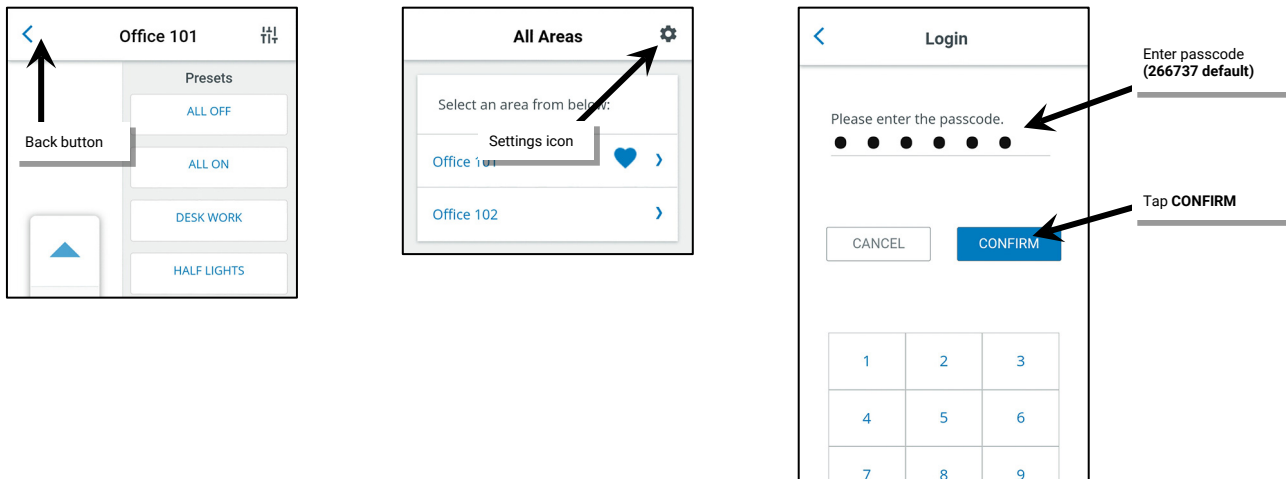
Selecting the Presets/Scenes that the Touchscreen Displays

The touchscreen defaults to displaying all presets/scenes except for scenes that have been hidden through the WaveLinX App. It is possible to limit the touchscreen further to display only specific presets/scenes.

This section assumes that the connection has been successfully made between the WaveLinX Area Controller and the touchscreen. It also assumes that the touchscreen is still using the default passcode.

If the touchscreen is displaying an area's preset page, touch the back button until the **All Areas** screen is displayed.

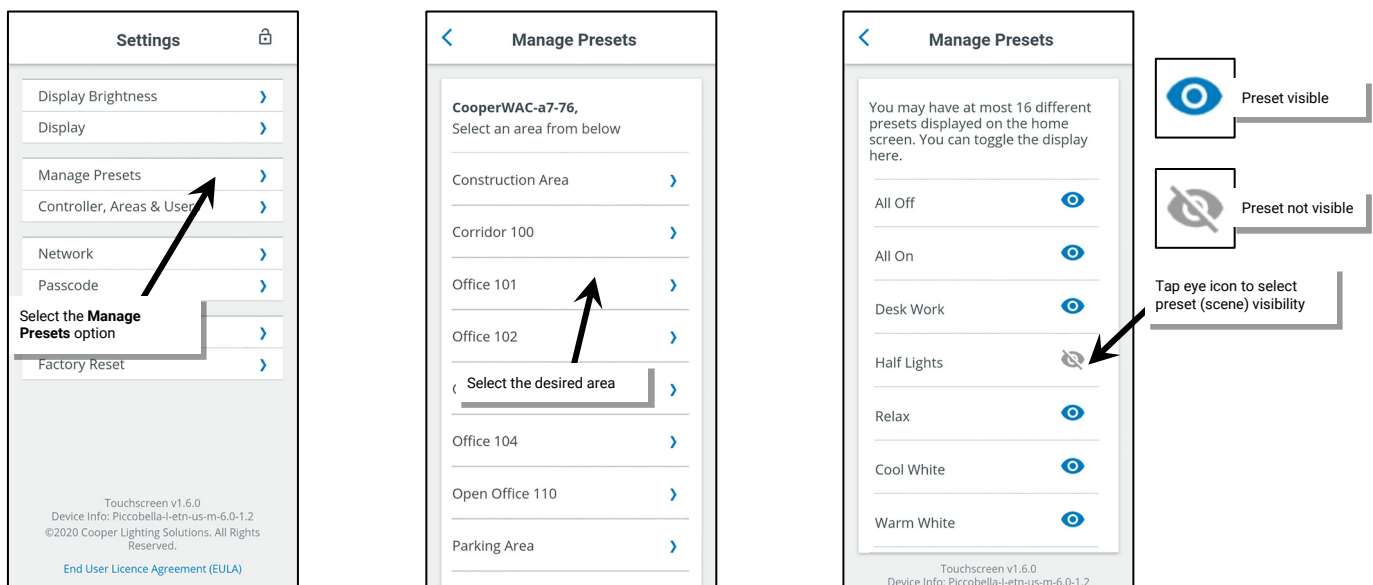
- 1: From the **All Areas** screen, select the settings gear icon.
- 2: Enter the touchscreen passcode, then tap **CONFIRM**. The default passcode is 266737 ⁽³⁵⁰⁾.



- 3: In the **Settings** screen, tap the **Manage Presets** option.

- 4: Select the desired area.

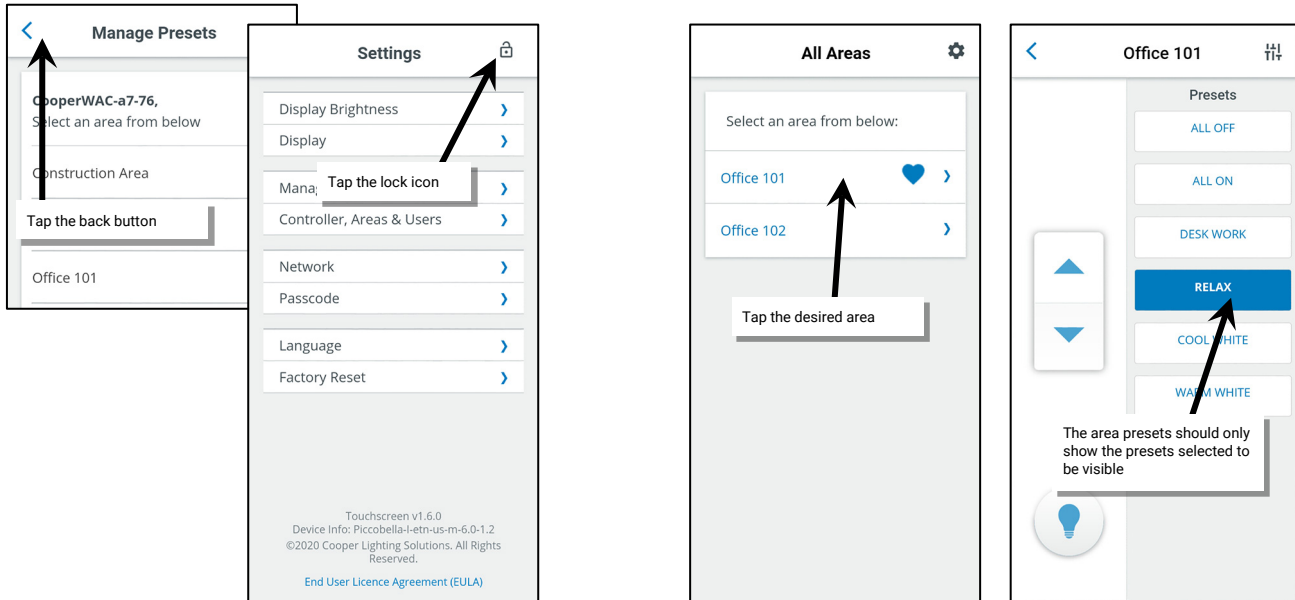
- 5: Turn on or off the visibility of the presets/scenes by tapping on the eye icon next to the presets. The preset/scene will be visible if the icon is dark blue. Hide a preset/scene by tapping on the icon until it changes to gray. Set visible scenes to the dark blue eye icon. Define a preset as hidden by tapping on the eye icon. The icon will turn gray. Touch and drag the display up or down to access presets/scenes beyond the current screen view.



³⁵⁰ For security, it is recommended that default passcode be changed once the initial touchscreen configuration is complete. Refer to "Changing the Administrator Passcode" on page 289 for step-by-step instructions. In previous touchscreen versions, the default passcode was 328661.

6: Tap the back button to exit and save the changes, and then tap the lock icon to exit the settings screen.

7: Tap the area from the **All Areas** list and view the controls. Only the presets that have been defined as visible will show.



The touchscreen can now be used to control lighting in the defined areas. For information on the screen controls, refer to “Using the Touchscreen Controls” on page 283.

Note that partitioned areas will allow control from the Touchscreen with limited functionality. Commands from a Touchscreen to scenes and zones in a partitioned area will control lighting in the entire area regardless of partition wall open or close status.

Quick Links for Common Questions

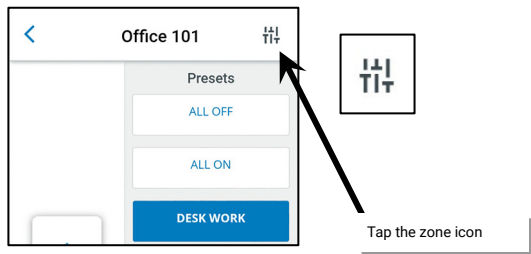
- How do I change the preset name(s) that is displayed? The preset or scene name is defined and stored in the WaveLinx Area Controller. For information on changing a scene name, see “Modifying Scene Settings and Response” on page 192.
- Not all my scenes are appearing on my touchscreen display. I have checked the visibility through the touchscreen and the scenes simply do not show. What could cause this? The scene may be defined as a hidden scene through the programming stored in the WaveLinx Area Controller. For information on how to hide or unhide scenes, see “Modifying Scene Settings and Response” on page 192.

Using the Touchscreen Controls

Once the touchscreen is configured for the desired area and presets, use the onboard controls to adjust the lighting to the desired level.



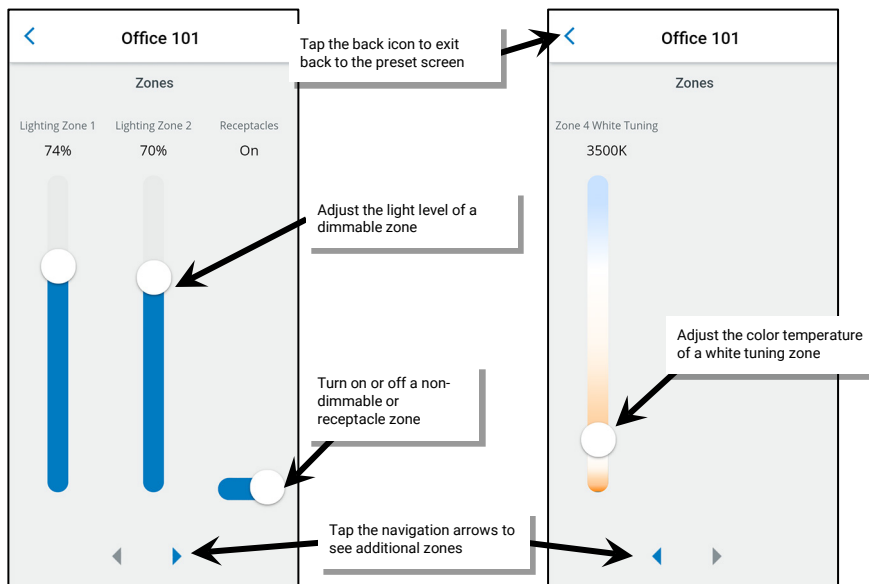
- In the main area control screen, tap one of the presets select a scene.
- Tap the raise or lower button on the sidebar to increment or decrease the light level by 1% increments or press and hold the raise or lower button to change the light level at a more rapid rate.
- Quickly turn ON or turn OFF lighting in the area by tapping the light bulb icon in the sidebar. This will toggle between the ALL OFF scene (scene 0), and scene 1.



It is also possible to adjust individual zone light levels or white tuning color temperature. To access the zone adjustments, tap the zone level icon at the top of the area presets screen.

The zone adjustment screen will allow control of any zone that is part of the area.

- Use the slider control for a dimmable zone to adjust the light level.
- Use the ON/OFF control for non-dimmable and receptacle zones to turn the load ON or OFF.
- Use the slider control for white tunable zones to adjust the color temperature.
- Use the provided navigation arrows at the bottom of the screen to navigate to additional zones.
- Use the back button to return to the area presets display.



Note that partitioned areas will allow control from the Touchscreen with limited functionality. Commands from a Touchscreen to scenes and zones in a partitioned area will control lighting in the entire area regardless of partition wall open or close status.

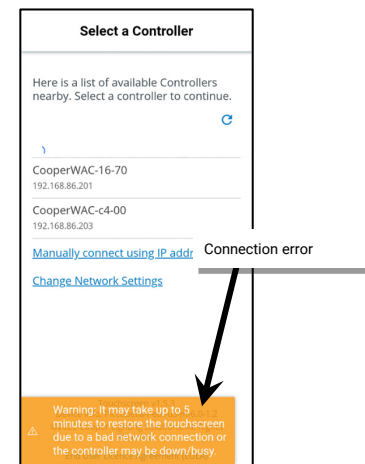
Important Connection Error Resolution and Power Up Details

Under normal conditions, the touchscreen will maintain the connection to the WaveLinX Area Controller it has been connected to. If the connection to the WaveLinX Area Controller is lost or the touchscreen goes through a power cycle, the touchscreen should exhibit the following behavior:

Lost Connection to the WaveLinX Area Controller

Communications from the touchscreen to the WaveLinX Area Controller can be interrupted if the WaveLinX Area Controller is powered down or in a reboot process, or if there are issues with the network. In these circumstances, the touchscreen may display the following message and be redirected to the WaveLinX Area Controller selection screen.

The touchscreen will continue to try to connect to the WaveLinX Area Controller. If it is a temporary issue caused by the WaveLinX Area Controller being powered down or rebooting, the touchscreen will automatically reconnect and login once the WaveLinX Area Controller has completed the reboot process. If the problem is due to a network issue, it may be necessary to troubleshoot the network or review the defined IP addresses to verify that there is no conflict before the problem is resolved.



Touchscreen Power Up Behavior

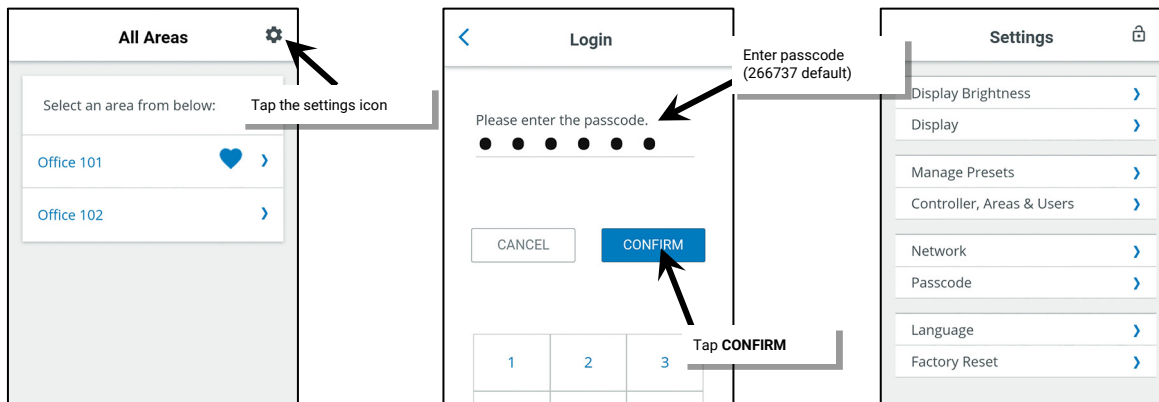
If a touchscreen has been powered down, once power is restored, the touchscreen boots and attempts to reconnect to the previously connected WaveLinX Area Controller. Once the connection is made, the touchscreen will login with the previously defined user credentials and then will display either the **All Areas** list or the preset page of the favorite area if a favorite area has been defined.

Performing Other Touchscreen Administrator Functions

The touchscreen also allows for administration of other general settings. This includes:

- Changing the logged in touchscreen user or connected WaveLinX Area Controller
- Adjusting the display brightness and auto-dim timing settings
- Viewing the touchscreen's IP address
- Changing the administrator passcode
- Changing the display language
- Viewing the End User License Agreement (EULA)
- Performing a factory reset

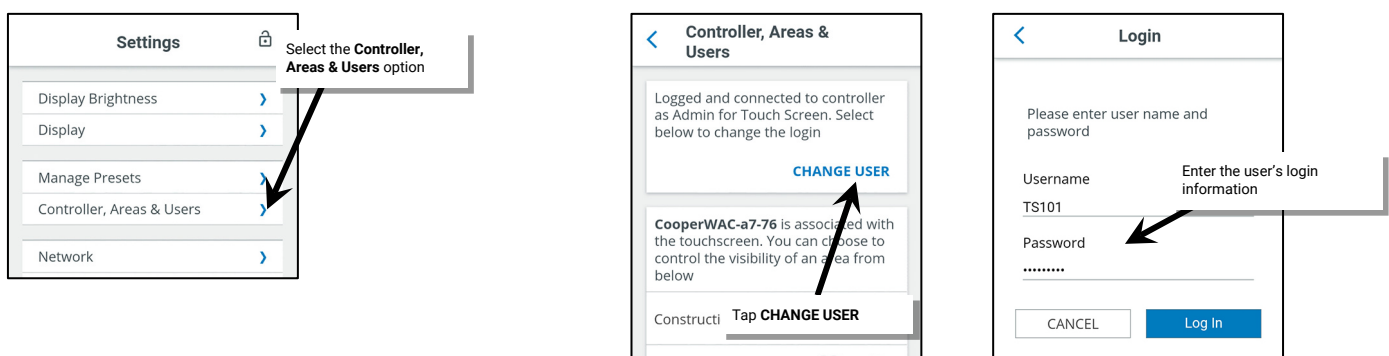
All these options are found in the touchscreen **Settings** screen. Navigate to the **Settings** screen by tapping the settings gear icon in the **All Areas** screen and then entering the touchscreen passcode. The default passcode is 266737 ⁽³⁵¹⁾.



Changing the Touchscreen User or WaveLinX Area Controller

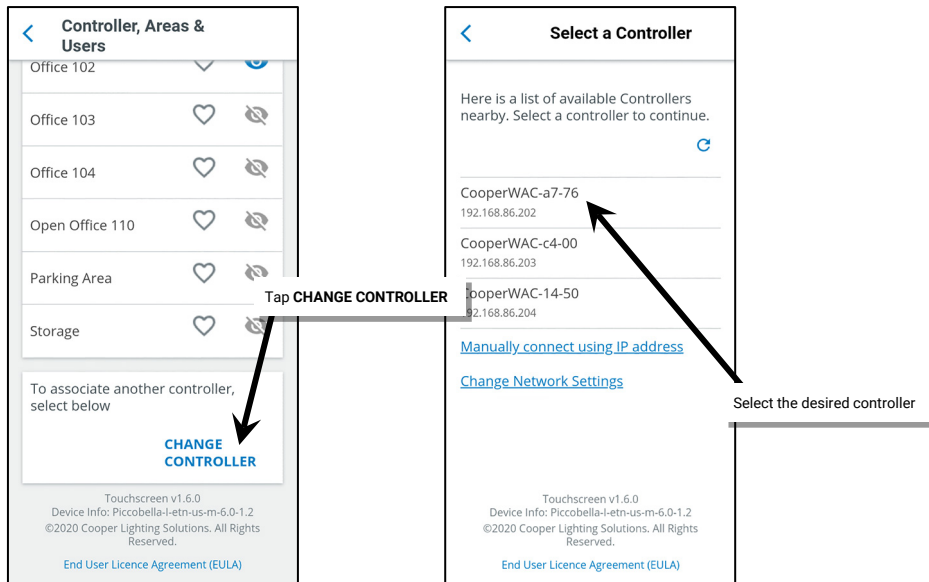
If the incorrect user account has been used to login to the touchscreen, it is possible to change users. It is also possible to select a different WaveLinX Area Controller if the incorrect WaveLinX Area Controller has been accessed. To change the user or WaveLinX Area Controller:

- 1: From the **Settings** screen, select the **Controllers, Areas & Users** option.
- 2: To login as a different user account, at the top of the screen, select the option to **CHANGE USER** and then login with the desired user's credentials.



³⁵¹ For security, it is recommended that default passcode be changed once the initial touchscreen configuration is complete. Refer to "Changing the Administrator Passcode" on page 289 for step-by-step instructions. In previous touchscreen versions, the default passcode was 328661.

- 3: To connect to a different WaveLinX Area Controller, scroll to the bottom of the display and select the option to **CHANGE CONTROLLER**. Select the correct WaveLinX Area Controller from the list.

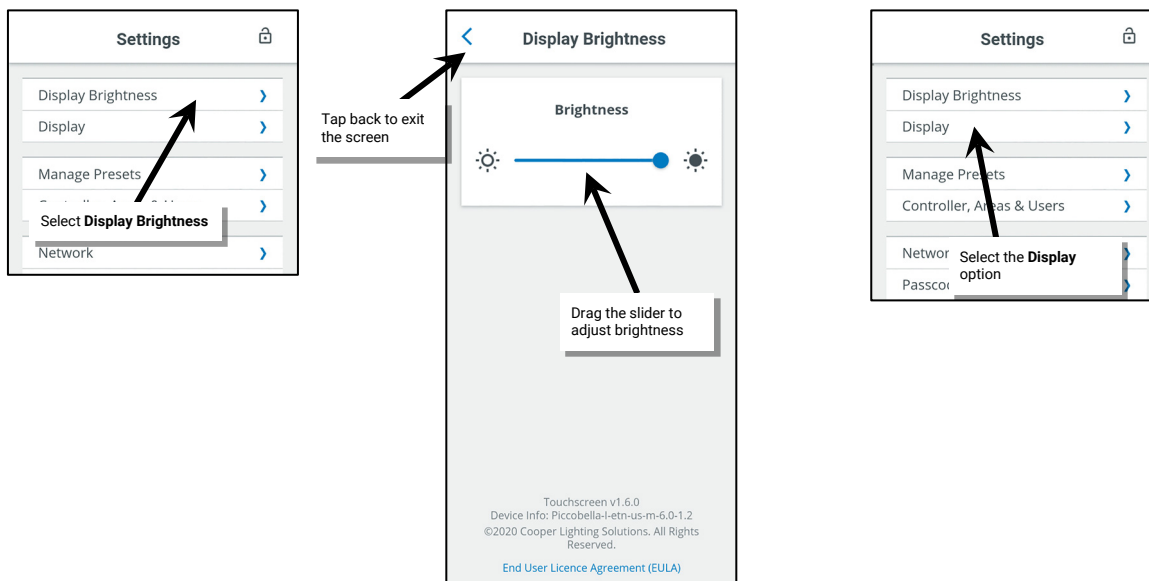


Adjusting the Preferred Display Brightness and Auto-dim Timing

The touchscreen allows selection of a preferred brightness level for when the screen is in use. If no activity occurs during an initial user defined time-out period, the touchscreen will automatically dim to 50% of the preferred brightness level. If there is no activity for 10 minutes, the touchscreen will automatically dim to 20% of the preferred brightness level. At any time, if the touchscreen registers a touch, the touchscreen will immediately return to the preferred brightness level.

To adjust the preferred brightness level and the initial auto-dim time-out period:

- 1: From the **Settings** screen, select **Display Brightness**.
- 2: Use the slider to adjust the screen to the desired brightness, and then tap the **Back** button.
- 3: Next, select the **Display** option.



4: Select the initial time-out period from the provided options, and then tap the **Back** button.

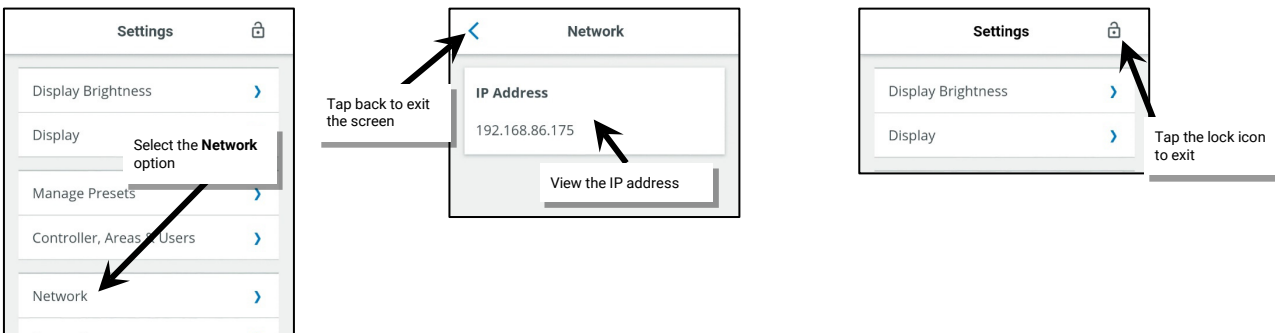
5: Tap the lock icon to exit the settings screen.



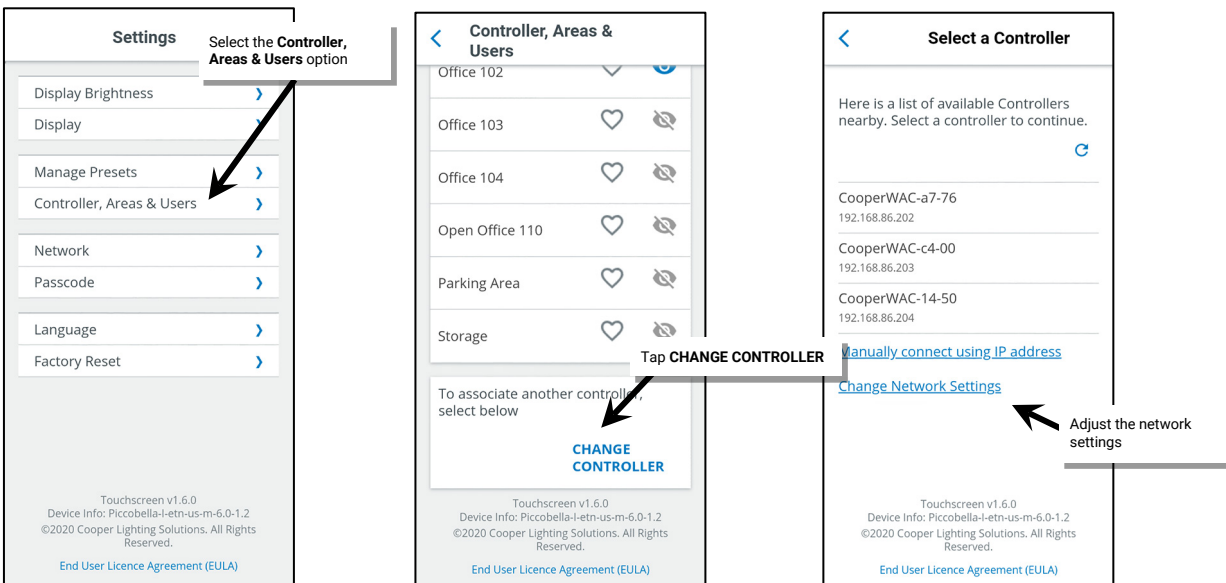
Viewing or Changing the Touchscreen's IP Address

To view the touchscreen's currently assigned IP address:

- 1: From the **Settings** screen, select the **Network** option.
- 2: Review the IP address. Once finished, tap the **Back** button.
- 3: Tap the lock icon to exit the settings screen.



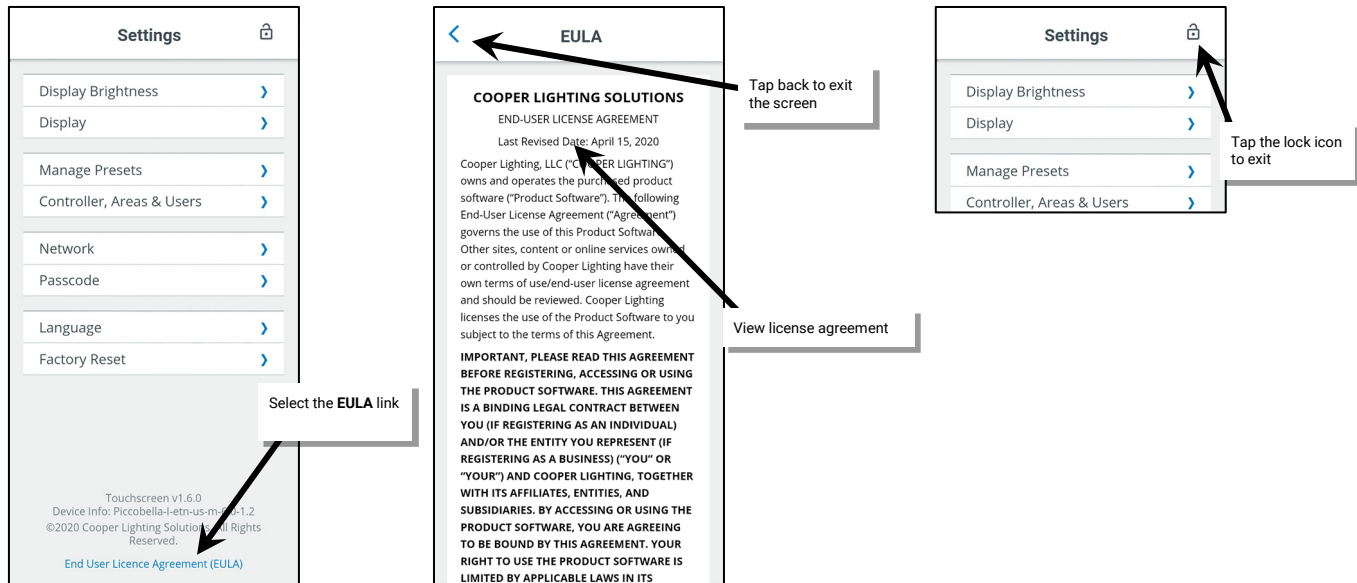
To change the touchscreen's IP address, from the settings menu, select the option for **Controllers, Areas & Users**, and then select **CHANGE CONTROLLER**. Define the new settings and then tap the correct WaveLinX Area Controller to reconnect.



Viewing the End User License Agreement (EULA)

To view the touchscreen End User License Agreement (EULA):

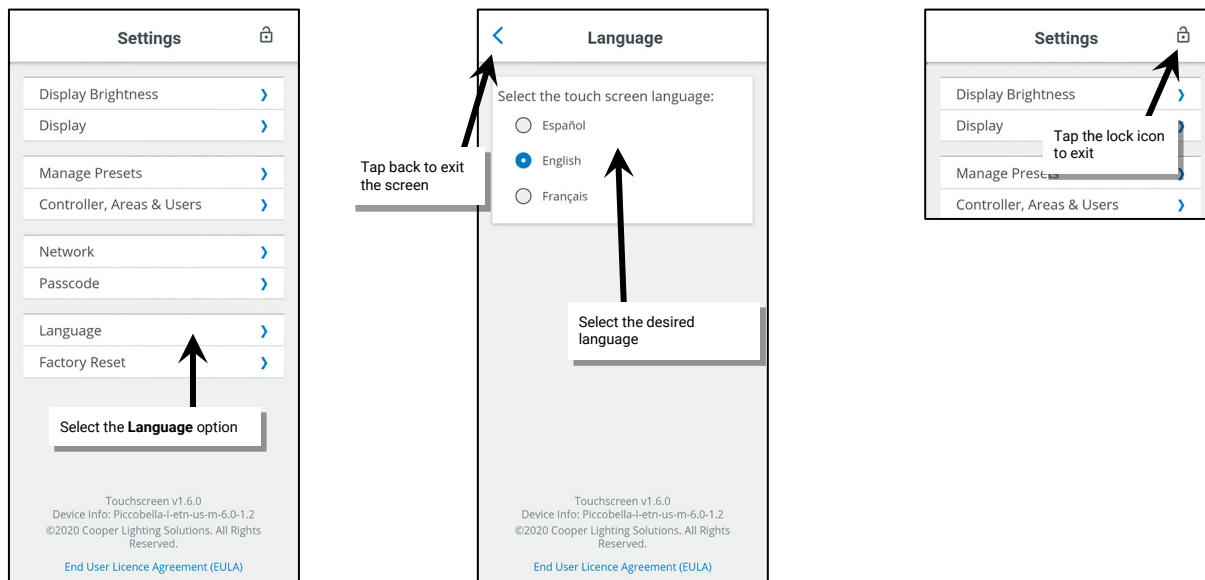
- 1: From the **Settings** screen, select the **End User License Agreement (EULA)** link at the bottom of the screen.
- 2: Once finished reviewing the information, tap the **Back** button.
- 3: Tap the lock icon to exit the settings screen.



Changing the Display Language

It is possible to switch the display language between English, Spanish, and French. To change the display language:

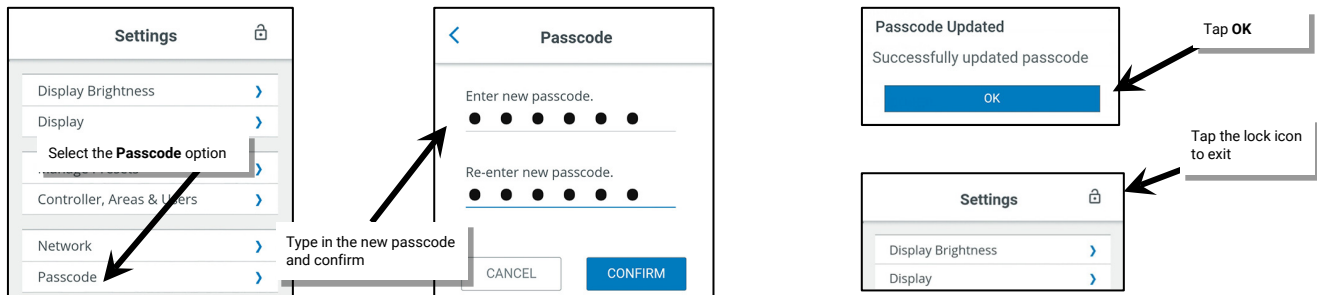
- 1: From the **Settings** screen, select the **Language** option.
- 2: Select the desired language, and then tap the **Back** button.
- 3: Tap the lock icon to exit the settings screen.



Changing the Administrator Passcode

For security reasons, it is recommended that the default administrator passcode be changed. To change the admin passcode:

- 1: From the **Settings** screen, tap the **Passcode** option.
- 2: Enter the new passcode desired (must be 6 digits), and then enter the same passcode in the second field. Tap **CONFIRM**.
- 3: Tap the **OK** button once the success message box is displayed.
- 4: Tap the lock icon to exit the settings screen.



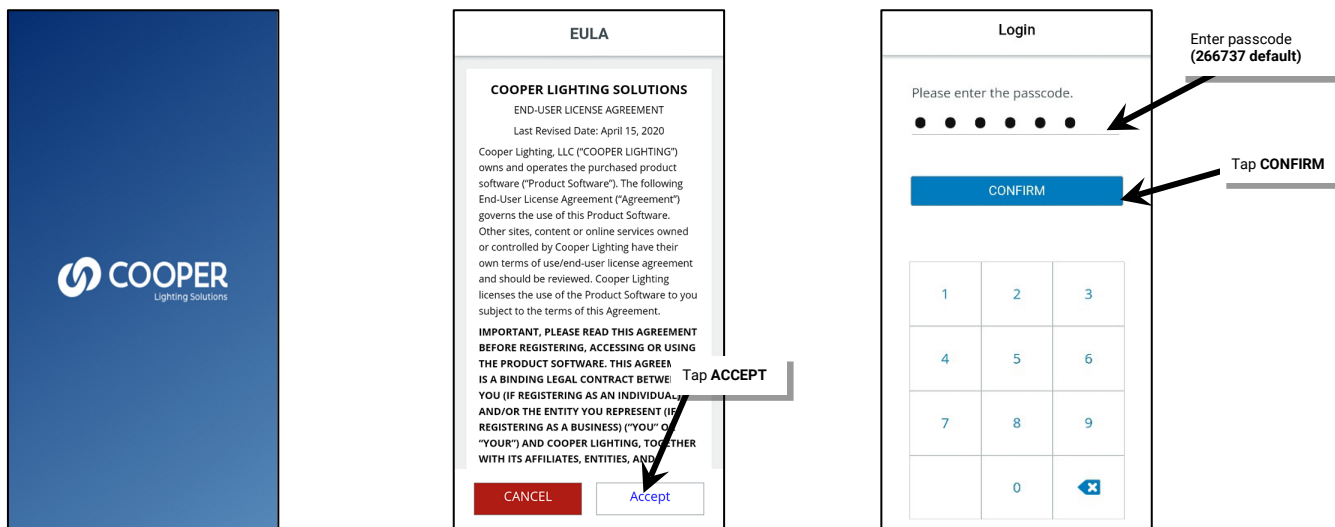
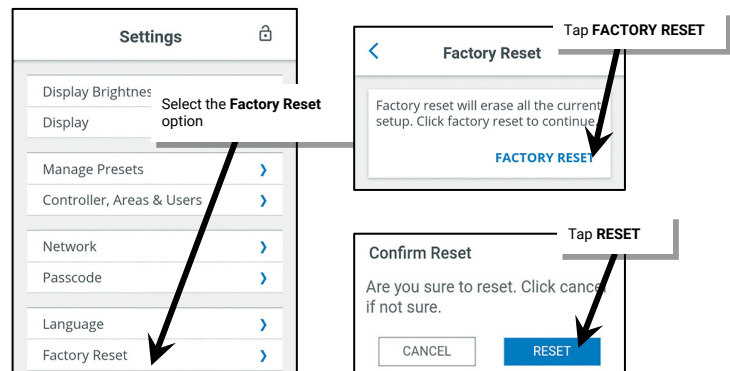
The new passcode must now be used for administrative functions. The default passcode will no longer be valid.

Performing a Factory Reset

A factory reset will erase the current touchscreen setup and return the device to factory defaults. Use it with caution!

- 1: From the **Settings** screen, tap the **Factory Reset** option.
- 2: Tap the **FACTORY RESET** link.
- 3: Tap the **RESET** option when prompted to confirm.

The display will show the blue screen, and then request the passcode. Enter the default administrative passcode 266737³⁵² to begin the setup process. Reconfigure the touchscreen using the steps outlined in this chapter.



³⁵² For security, it is recommended that default passcode be changed once the initial touchscreen configuration is complete. Refer to "Changing the Administrator Passcode" on page 289 for step-by-step instructions. In previous touchscreen versions, the default passcode was 328661.

WaveLinx Area Controller Administration

The WaveLinx Area Controller allows for advanced administrator functionality using built-in internal webpages. This section describes how to:

- Login to the internal webpages
- Set the system location, time, date, and time zone
- Manage user accounts and passwords
- Rename the WaveLinx Area Controller
- Backup and restore databases/replace a WaveLinx Area Controller
- Firmware administration
 - Obtain the latest firmware/software files
 - View and update firmware/software of the WaveLinx Area Controller
 - View or update firmware of WaveLinx devices
- Advanced network administration
 - Administer Wi-Fi access point settings
 - Administer other Wi-Fi settings
 - Administer Ethernet setting
 - Change DNS settings
 - View 802.15.4 network settings
 - Enable or Disable the WaveLinx CORE Connection
- Remove devices in the Construction Area
- Reboot the WaveLinx Area Controller
- View disclaimers and license agreements
- Use the WaveLinx WAC Lighting Application³⁵³

Logging into the WaveLinx Area Controller Webpages

Establish a connection from a computer to the WaveLinx Area Controller to access administrator functions in the internal webpages.³⁵⁴

If the WaveLinx Area Controller is connected to the building network, or the wireless name and password has been changed from the default, please refer to the network administrator for access information, the WaveLinx Area Controller's IP address, and the credentials to use when logging in.

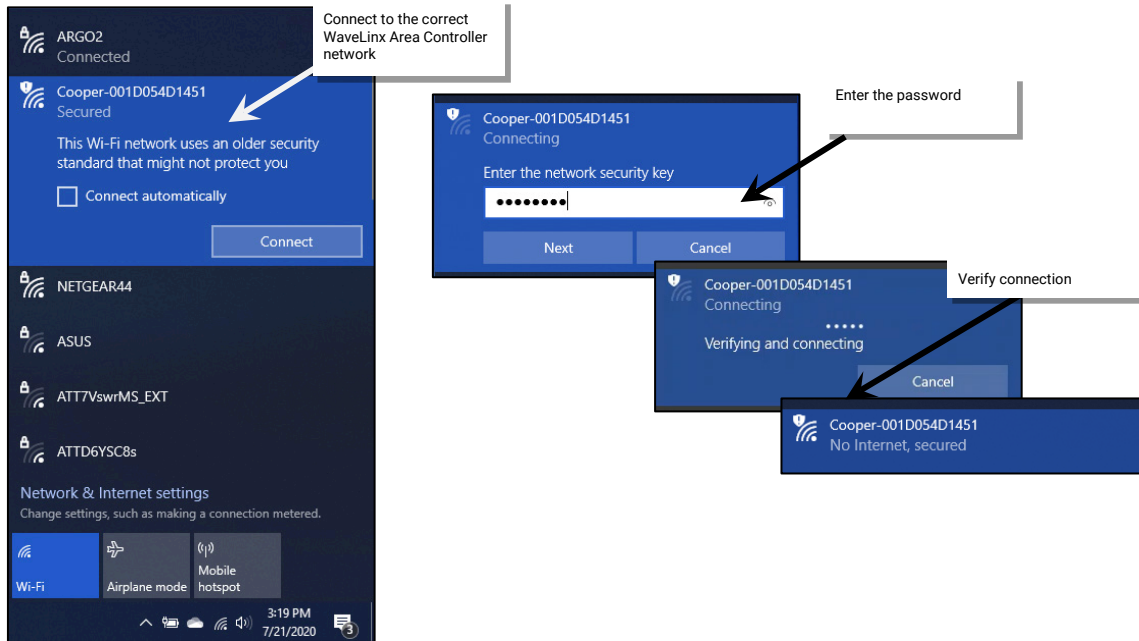
- 1: Make sure that the computer being used has wireless connectivity and has a current web browser installed.
- 2: If there is more than one WaveLinx Area Controller in the facility, on the top of the WaveLinx Area Controller, locate the label with the MAC ID. Make note of the MAC ID shown.



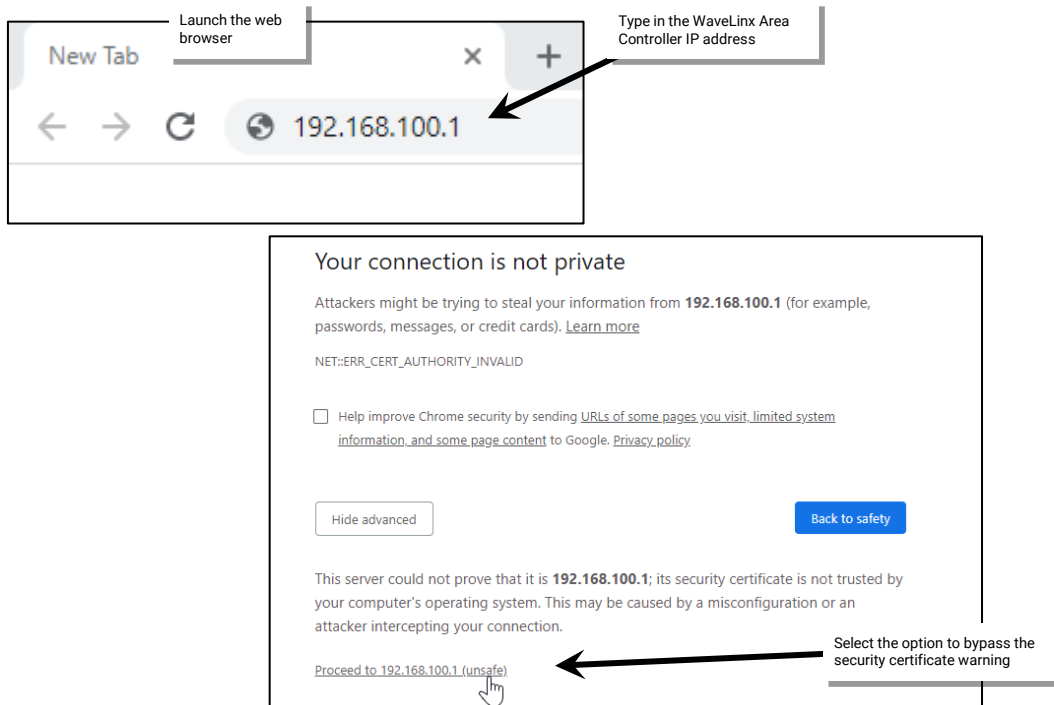
³⁵³ This feature requires the use of a WAC2 (Gen 2) WaveLinx Area Controller with the minimum software version 11.x.x.x.

³⁵⁴ There is a WaveLinx Manager Monitoring Webpage which is an additional webpage accessible by Technical Support and Field Engineers for component level analysis. Contact Technical Support regarding the use and access to this page.

- 3: Turn on the computer's Wi-Fi and locate the Wi-Fi network named Cooper-XXXXXXXXXXXX (where X is a string of letters and numbers). Select the Wi-Fi network Cooper-XXXXXXXXXXXX where the X characters match the MAC ID noted in the last step. When prompted, enter the previously customized password, and then join the network (If still at the default settings, use the network key password **wclAdmin** [case sensitive]).



- 4: Open the web browser and enter the IP address of the WaveLinx Area Controller in the address bar. (The default IP address if connecting through the onboard wireless access point is 192.168.100.1.) The first time the WaveLinx Area Controller is accessed, the browser may display message windows regarding the site security certificate. The display and wording of these messages may differ between web browsers. Locate the option to bypass the warning to proceed to the site.



5: In the log in screen, enter the username and password for the administrator user.

- Username: **WclAdmin**
- Password: Enter the assigned password. (If the WaveLinx Area Controller is still in default configuration, the default password is **wclAdmin**.)



The screenshot shows the WaveLinx Configurator login interface. It features the Cooper Lighting Solutions logo at the top, followed by the title 'WaveLinx Configurator'. Below this, there are input fields for 'Username' (containing 'WclAdmin') and 'Password' (masked with dots). A blue 'LOGIN' button is at the bottom. An arrow points from the text 'Enter the administrator username and password' to the password field.

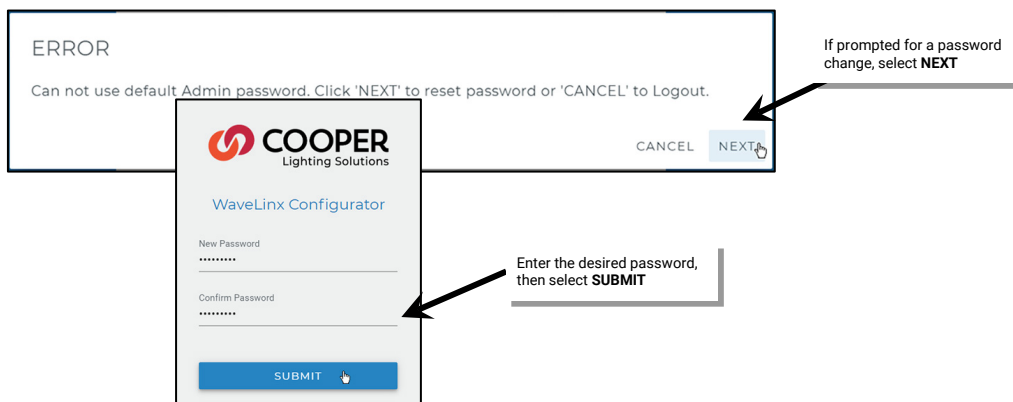
If this **is not** the first login for the WaveLinx Area Controller, the system page will display in the web browser. No further steps are necessary.

If this **is** the first login to this WaveLinx Area Controller, continue with the following steps:

6: If this is the first login, the system will force a password change. When prompted, enter a new password for the administrative user.

Set a complex password when changing passwords, making sure it is something that can be remembered.

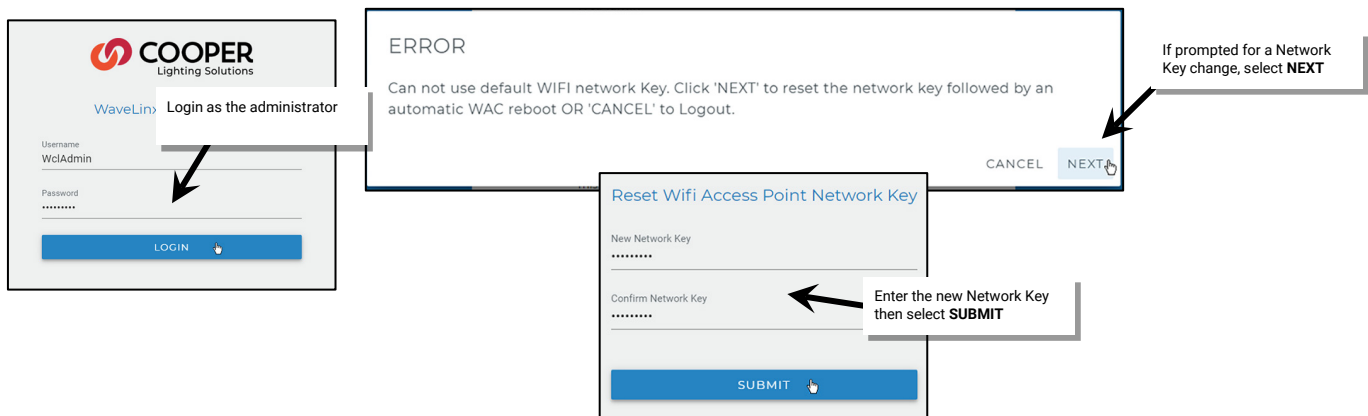
IMPORTANT! REMEMBER THE NEW PASSWORD AS IT WILL BE USED FOR ALL FUTURE ADMINISTRATOR LOGINS FOR THE INTERNAL WEBPAGE AND FOR THE MOBILE APPLICATION.



This diagram illustrates the password change process. It starts with an 'ERROR' message: 'Can not use default Admin password. Click 'NEXT' to reset password or 'CANCEL' to Logout.' An arrow points to the 'NEXT' button. This leads to the 'WaveLinx Configurator' password change screen, which has fields for 'New Password' and 'Confirm Password', both masked with dots, and a blue 'SUBMIT' button. An arrow points to the 'SUBMIT' button with the text 'Enter the desired password, then select SUBMIT'.

7: When prompted, login with the new credentials. The WAC2 (Gen 2) will force a Wi-Fi Access Point Network Key (password) change. When prompted, submit a new Network Key. Set a complex Network Key when changing it, making sure it is something that can be remembered.

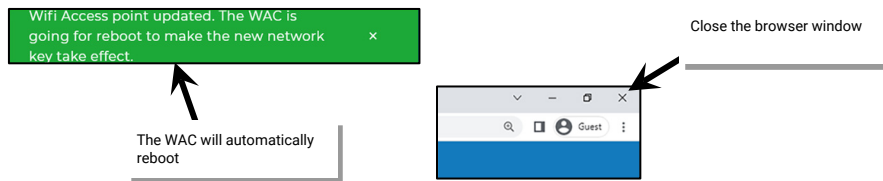
IMPORTANT! REMEMBER THE NEW NETWORK KEY AS IT WILL BE USED FOR ALL MOBILE DEVICE OR COMPUTER CONNECTIONS TO THE WI-FI ACCESS POINT ON THIS WAVELINX AREA CONTROLLER.



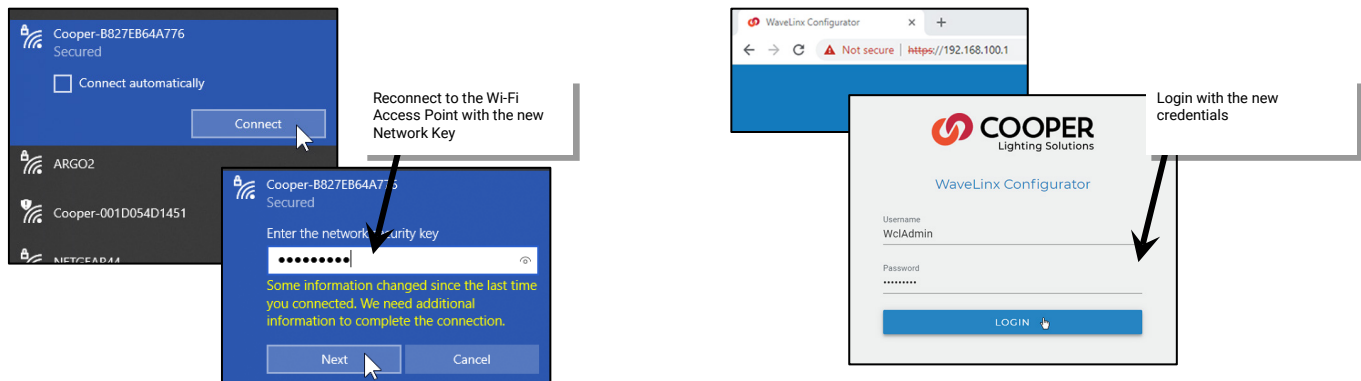
This diagram illustrates the network key change process. It begins with the WaveLinx login screen, where an arrow points to the 'LOGIN' button. This leads to an 'ERROR' message: 'Can not use default WIFI network Key. Click 'NEXT' to reset the network key followed by an automatic WAC reboot OR 'CANCEL' to Logout.' An arrow points to the 'NEXT' button. This leads to the 'Reset Wifi Access Point Network Key' screen, which has fields for 'New Network Key' and 'Confirm Network Key', both masked with dots, and a blue 'SUBMIT' button. An arrow points to the 'SUBMIT' button with the text 'Enter the new Network Key then select SUBMIT'. A final arrow points from the 'NEXT' button of the error message to the 'SUBMIT' button of the network key screen, with the text 'If prompted for a Network Key change, select NEXT'.

8: If the Network Key has changed, the WaveLinx Area Controller will automatically reboot. Close the web browser window.

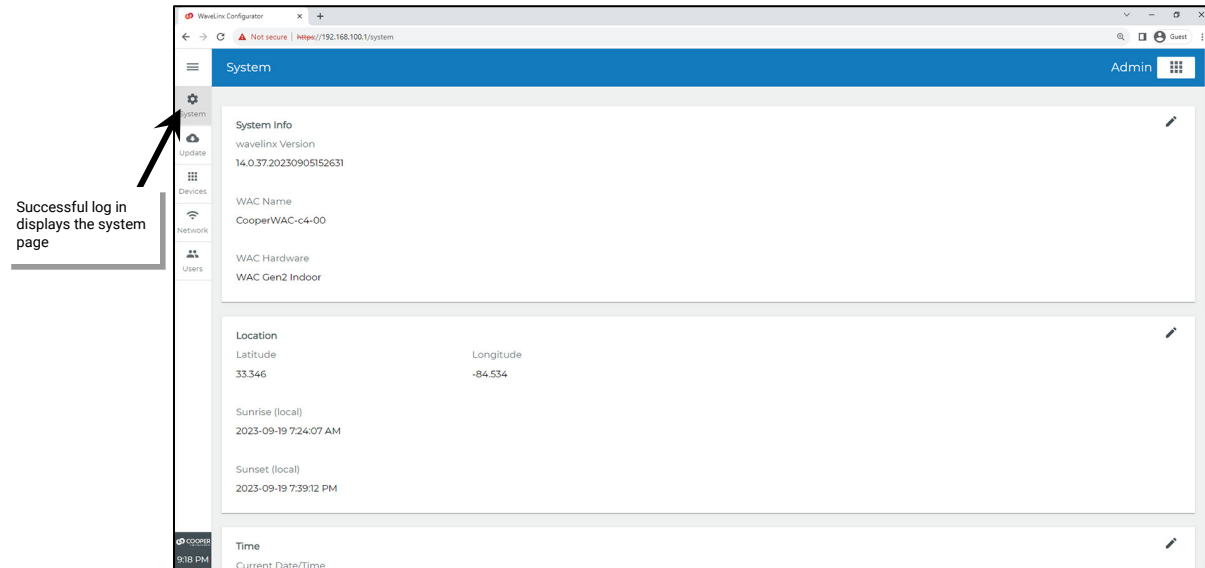
Wait until the reboot is complete. The Power/Health LED, 802.15.4 LED and Wi-Fi LED will be ON indicating it is ready (other LEDs may also be illuminated depending on connections).



9: Re-connect to the WaveLinx Area Controller's Wi-Fi Access Point, entering the new Network Key assigned. Then navigate to and login to the WaveLinx Area Controller using the new credentials.



The internal webpage will open and display the system page.

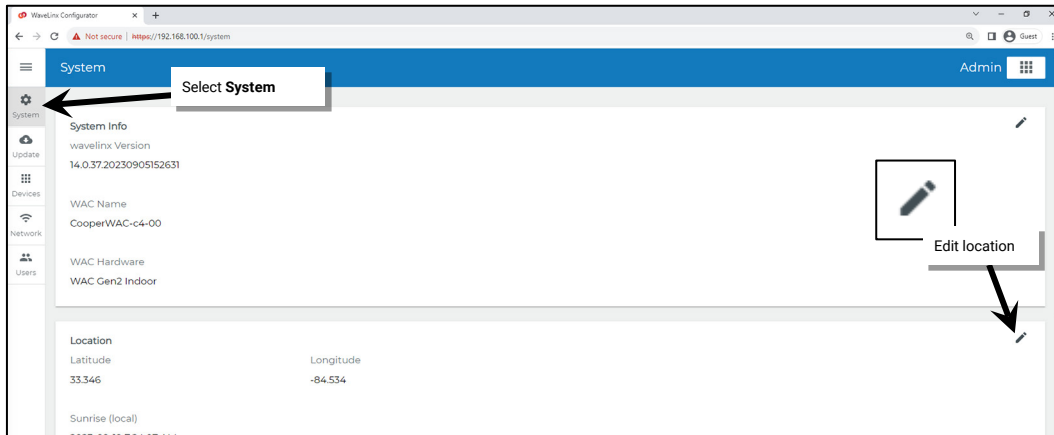


Setting the System Location, Time, Date and Time Zone

To ensure schedule event accuracy, set the location, time, date, and time zone in the WaveLinx Area Controller. These settings are found within the system webpage. The location setting is used for calculating the astronomic clock sunset and sunrise times. In the event of power loss, the time and date are retained for up to 48 hours. If the power loss exceeds 48-hours, the clock settings will need to be reconfigured.

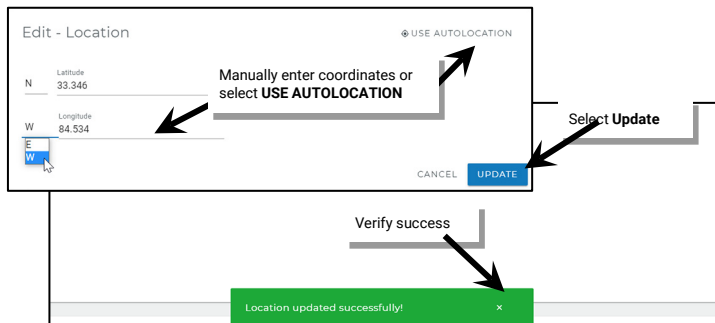
To set the location, time, date, and time zone:

- 1: Establish a connection from the computer to the WaveLinx Area Controller as the administrator user.
- 2: Select the **System** page and then select the pencil icon in the location section to open it for editing.

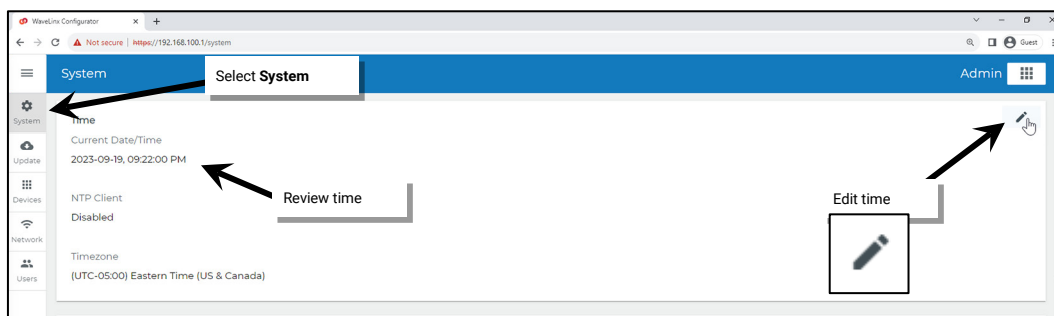


- 3: Set the location using either the auto location feature or by manually entering the coordinates.

- Auto-Location: Can be used if the computer is connected to a network that allows for GPS location. Fields will automatically populate with the coordinates.
- Manually enter: Manually enter the coordinates after determining the latitude and longitude for the site.



- 4: In the system page, review the current time, date, and time zone. If they are not correct, select the pencil icon to edit.



5: Update the time information by either entering the data manually or entering the NTP server details.

- **Enter manually:** Disable the **Use NTP** slider and enter the date (year-month-day YYYY-MM-DD format) and time fields (Use 24-hour military clock format to distinguish AM from PM). Click the time zone drop down and select the proper time zone.
- **Use NTP:** If the WaveLinx Area Controller is connected to a building network that uses a network time protocol (NTP) server, enable the **Use NTP** slider and fill in the NTP server address details. NTP servers do not set the time zone field. Manually set the time zone using the provided time zone drop down.

Click **UPDATE** to save the coordinates to the WaveLinx Area Controller. A success message will appear once completed.

Edit - Date/Time **Disable NTP**

Use NTP ☐

Enter time, date details, and select time zone

Manual Date Entry
2023-09-19

Manual Time Entry
21:22:46

Timezone
(UTC-05:00) Eastern Time (US & Canada)

Verify success

CANCEL UPDATE

Date/Time updated successfully!

Edit - Date/Time **Enable NTP**

Use NTP ☒

Enter NTP server details and select time zone

NTP Server 1
129.6.15.28

NTP Server 2
129.6.15.29

NTP Server 3
129.6.15.30

Timezone
(UTC-05:00) Eastern Time (US & Canada)

Verify success

CANCEL UPDATE

Date/Time updated successfully!

Managing User Accounts and Passwords

The internal webpages allow for creation of user accounts and administration of user accounts and passwords. By default, the WaveLinx Area Controller ships with a default system administrator user and a default personal control user account. These user accounts may be changed, or additional user accounts may be defined. The WaveLinx Area Controller supports up to 99 user accounts.

The WaveLinx Area Controller determines user access and permissions by associating the user accounts with different roles. For the purposes of a stand-alone WaveLinx Area Controller, only two roles will be used:

- **System Administrator Role:** A user defined as a system administrator will have access to all functions within the WaveLinx Mobile App, the WaveLinx WAC Lighting App³⁵⁵, and the WaveLinx Area Controller webpages. This includes all programming options, system administration, and user management. **Only one system administrator may be logged into the WaveLinx Area Controller at a time.**
- **Tenant Role:** A user defined as a tenant will have access to the system as a personal control user. The user will be able to view areas in the WaveLinx Mobile App, issue normal overrides through the WaveLinx App, and view schedule events. The personal control tenant user will not be able to change or modify programming, access the WaveLinx Area Controller webpages, or create user accounts/ administer passwords. The WaveLinx Touchscreen requires the use of a tenant role user account. Up to 31 tenant users may be logged into the WaveLinx Area Controller concurrently.

Other role types are specific to the implementation of the WaveLinx Area Controller into larger systems using the WaveLinx CORE and WaveLinx CORE Applications. The additional user roles and default user accounts will not be discussed in this user guide. Refer to the user guides for these products for further information.

For security, change the default passwords for the administrator and personal control users to be unique for the facility. Users should set a complex password when changing passwords.

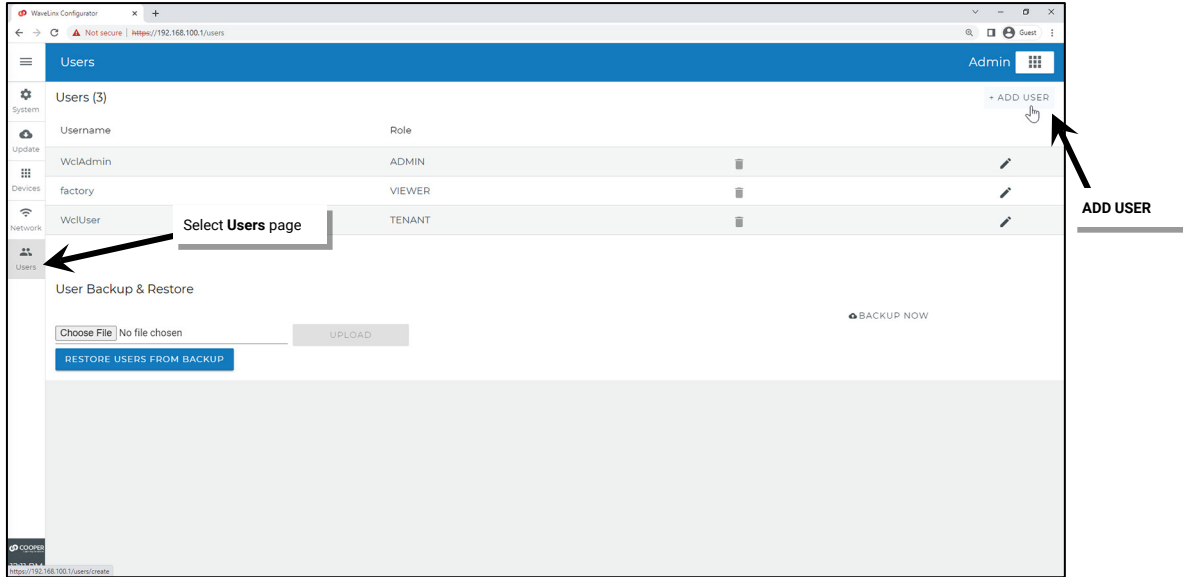
Once all users are entered, create a backup of the user accounts. The backup can be restored at any time to re-establish the user accounts/roles or to duplicate the user accounts to other WaveLinx Area Controllers.

³⁵⁵ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Adding a New User Account

To create a new user account:

- 1: Establish a connection from the computer to the WaveLinx Area Controller as the administrator user.
- 2: Select the **Users** page, and then select the option to add a user.



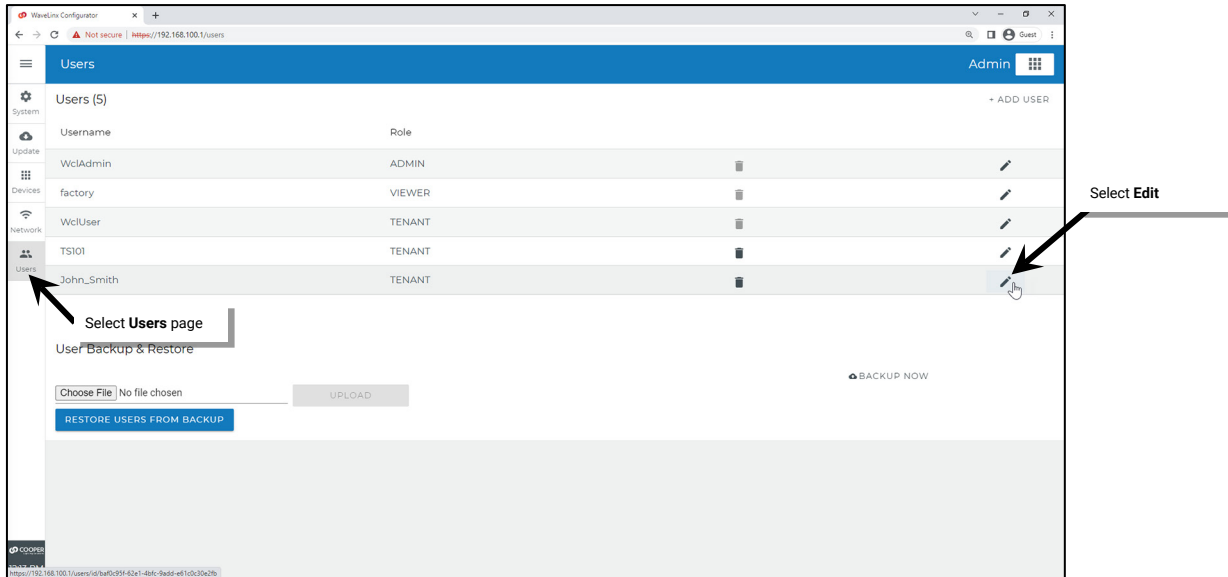
- 3: Enter the desired username, select the role, and create a password. Click **CREATE** to save the new user account.

- **Username:** Usernames can contain up to 32 characters and may include letters, numbers, and a limited set of special characters. Usernames may not contain spaces. Special characters that may be used include - _ '.
- **Role:** Select between **Tenant** (personal control user or Touchscreen user account) and **Admin** (system administrator user). Other roles are for use with the WaveLinx CORE.
- **Password:** The password must be between 8 and 16 characters and must contain at least 1 upper case letter, 1 number and 1 special character. The special characters that may be used are "#\$()*+,-./:;<=>?@[^_`{|}~.

Modifying Existing User Accounts and Passwords

To administer changes to the username, role, and passwords of existing user accounts:

- 1: Establish a connection from the computer to the WaveLinX Area Controller as the system administrator user.
- 2: Select the **Users** page, and then locate and select the pencil icon in the desired username row to open the edit form.³⁵⁶




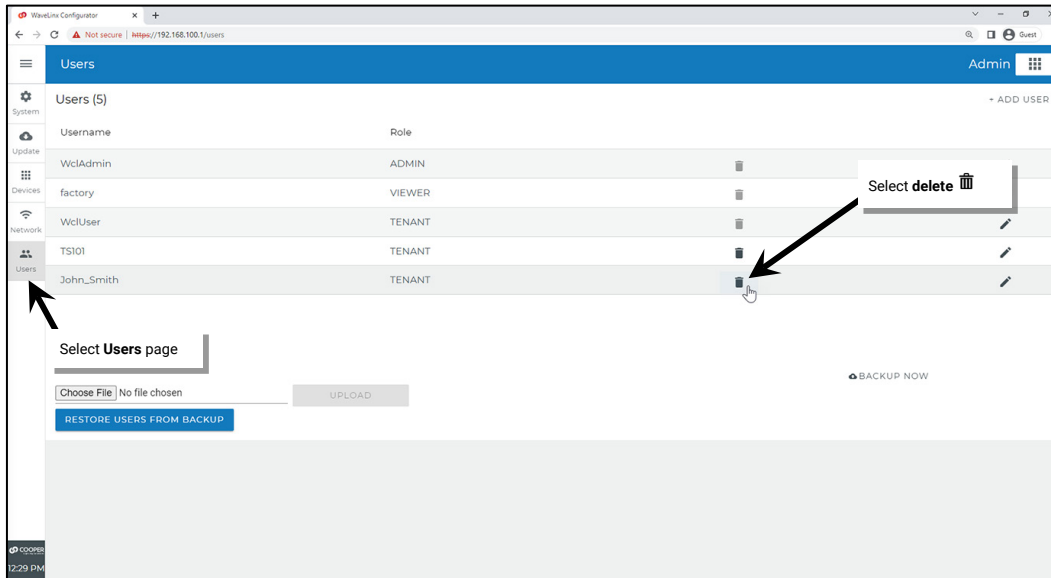
- 3: Make the changes to the role, username, or password. Passwords must be between 8 and 16 characters and must contain at least 1 upper case letter, 1 number and 1 special character ("#\$()*,-./:;<=>?@[!^_`{|}~). Click **Update** to save the changes.

The screenshot shows the "Edit User" form. It contains the following fields: Username (John_Smith), User role (TENANT), Old Password (masked with dots), New Password (masked with dots), and Confirm Password (masked with dots). Below the fields are two buttons: CANCEL and UPDATE. An arrow labeled "Make any necessary changes" points to the User role field. Another arrow labeled "Select UPDATE" points to the UPDATE button. A green notification box at the bottom right says "User Updated Successfully" with a close button (X).

³⁵⁶ The factory user listed is not used in typical applications.

Deleting a User Account

- 1: Establish a connection between the computer and the WaveLinX Area Controller as the system administrator user.
- 2: Select the **Users** page and then select **delete**  in the desired username row.



- 3: **CONFIRM** the deletion.

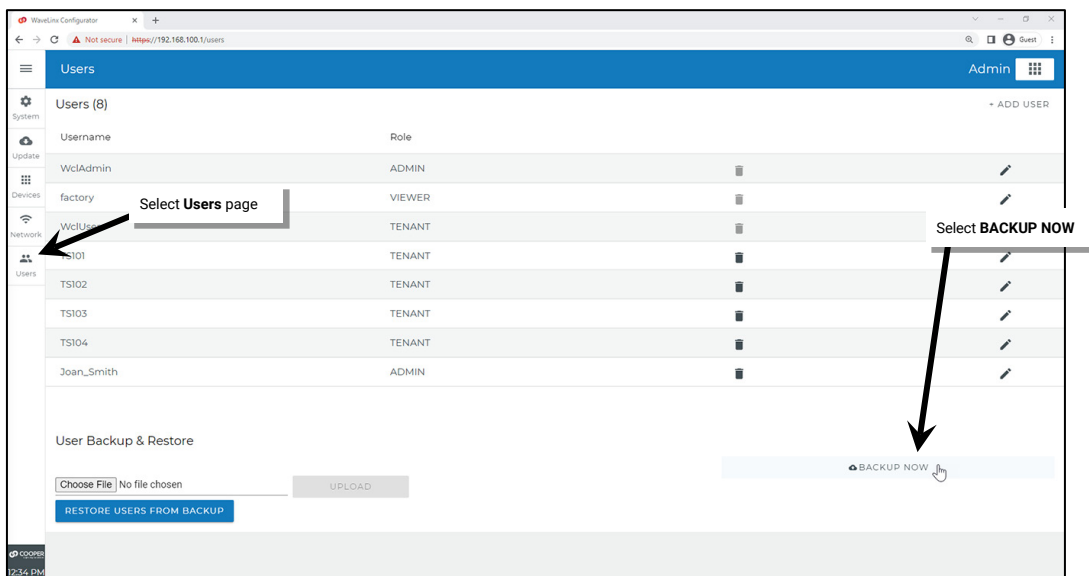


Using the Backup and Restore User Accounts Option

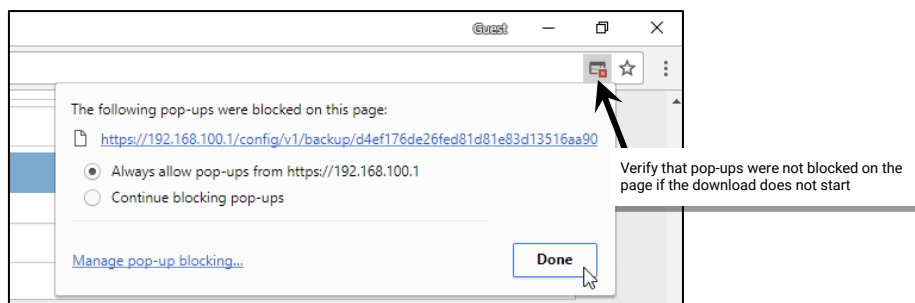
Once all users accounts exist, create a backup of the user accounts. The backup can be restored at any time to re-establish the user accounts/roles or to duplicate the user accounts to other WaveLinX Area Controllers.

Creating a User Accounts Backup

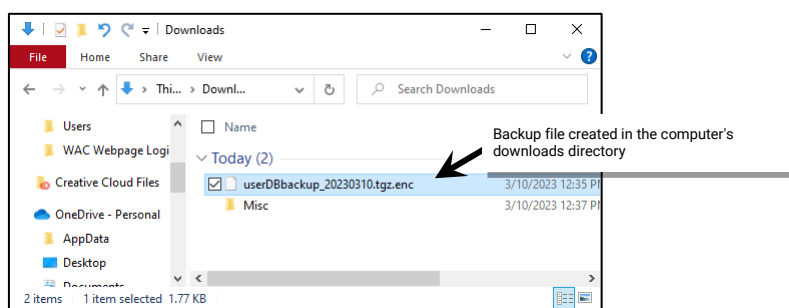
- 1: Establish a connection between the computer to the WaveLinX Area Controller as the system administrator user.
- 2: Select the **Users** page and then scroll to the bottom of the page to select the **BACKUP NOW** option. When prompted, select a location to store the backup.



3: After a few seconds, a file transfer should begin to the selected directory. If the download does not start, verify that popups are not blocked for this site, and then try again.



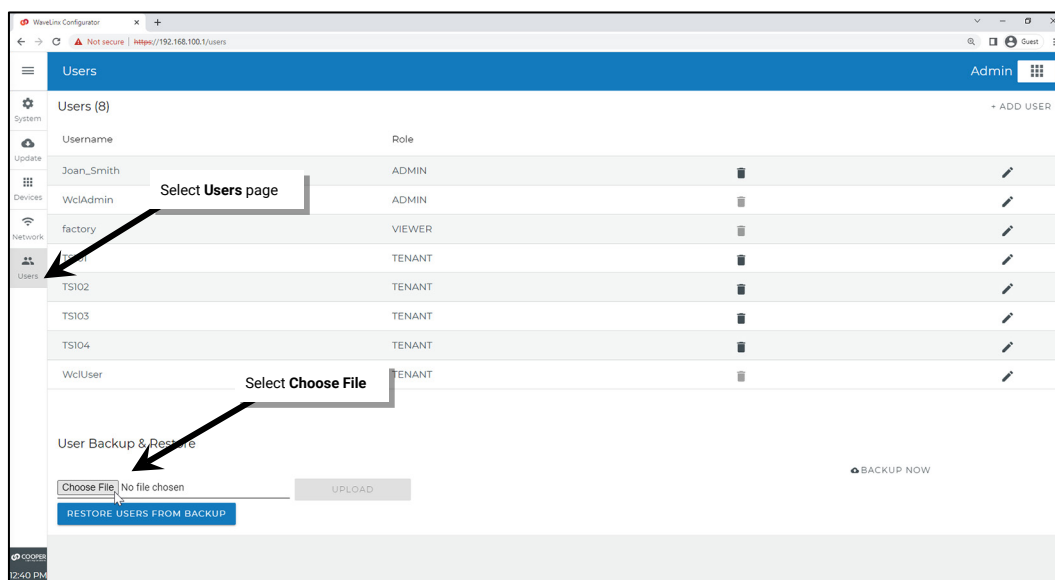
4: Verify that the backup file is in the chosen computer directory. The file name will be userDBbackup_ followed by the date of the backup (YYYYMMDD). Move the file to a designated directory for WaveLinX user database backups (optional).



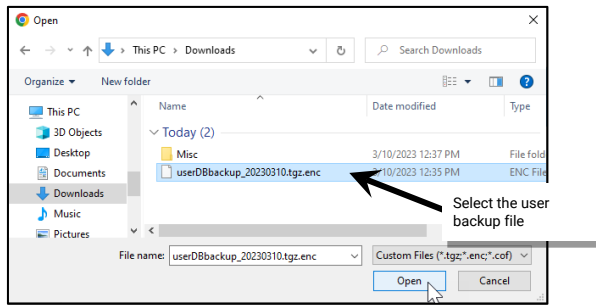
Restoring User Accounts from a Backup

To restore the user accounts from a backup:

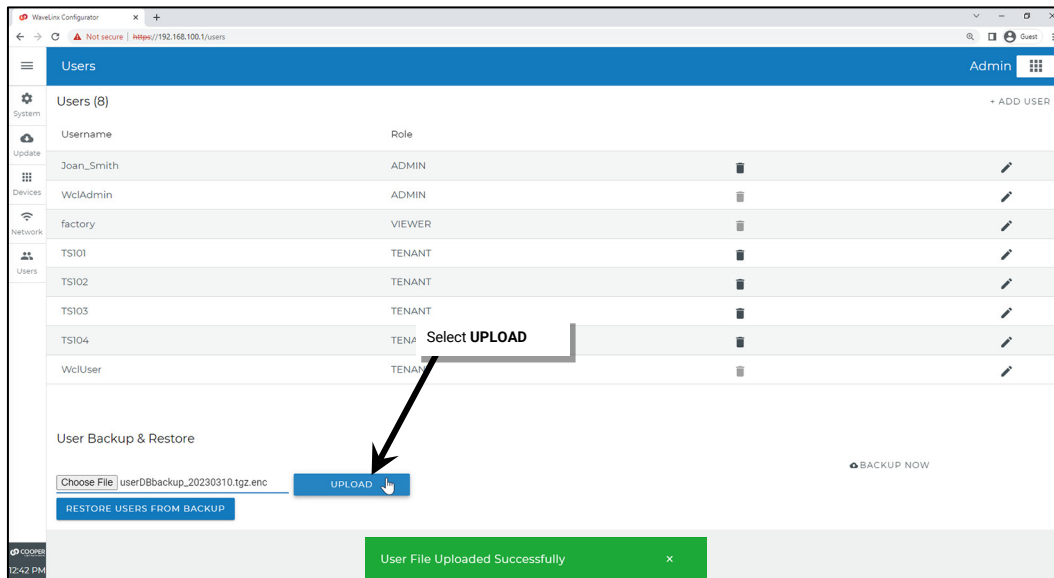
- 1: Establish a connection from the computer to the WaveLinX Area Controller as the system administrator user.
- 2: Select the **Users** page and then scroll down the page to select the choose file option.



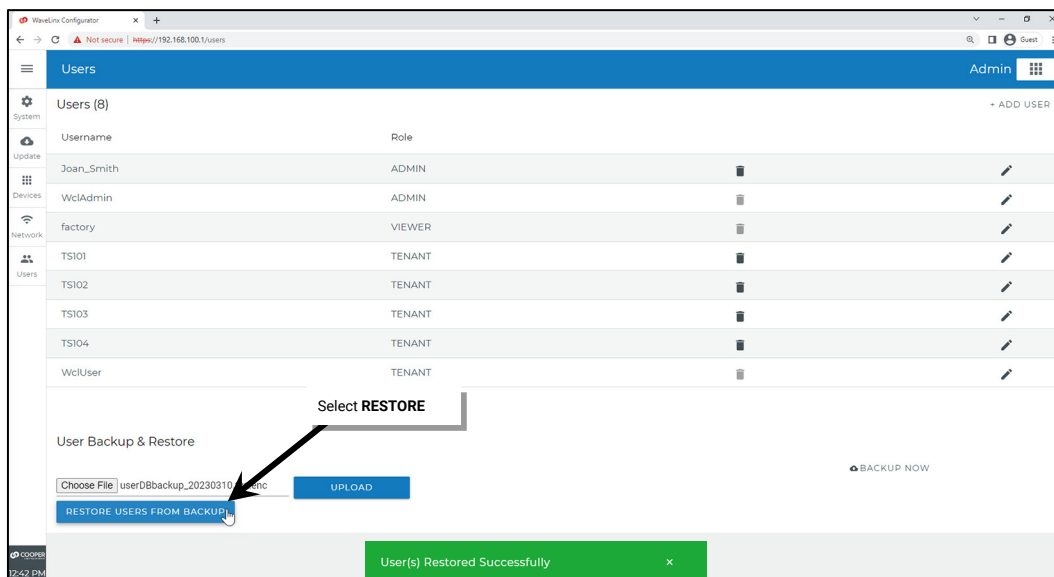
3: Navigate to and then select and open the user backup file.



4: Click **UPLOAD**. After a short delay, a successful upload message should be displayed.



5: Next, click **RESTORE USERS FROM BACKUP**. Once complete, a success message will be displayed. Refresh the webpage to view the restored user accounts. In some cases, it may take several minutes before the restored users will appear.

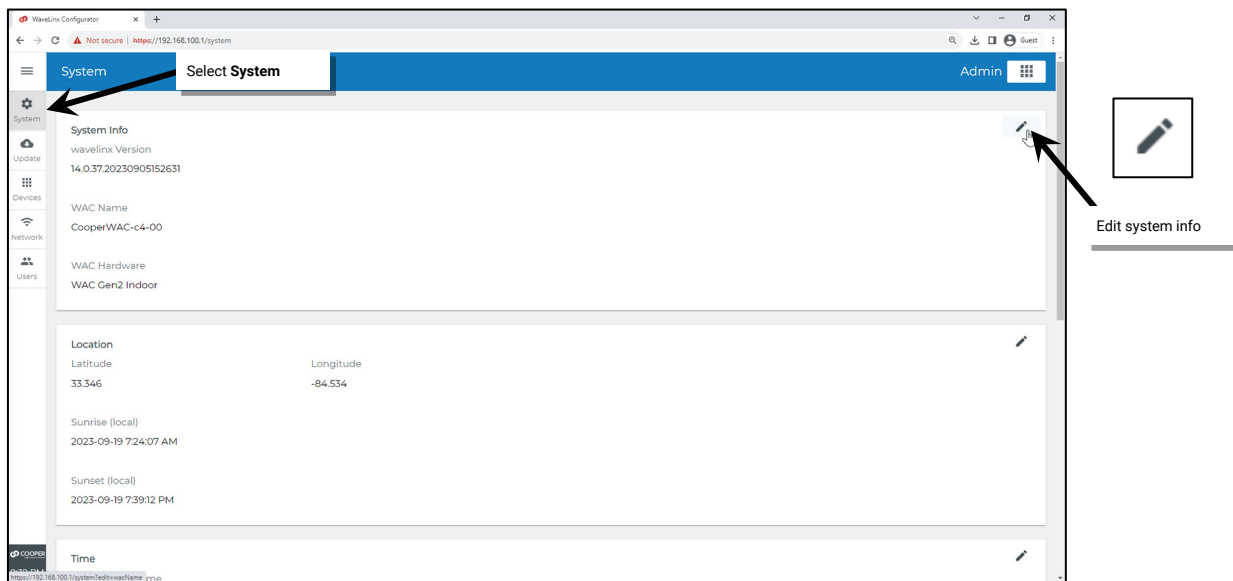


Renaming the WaveLinX Area Controller

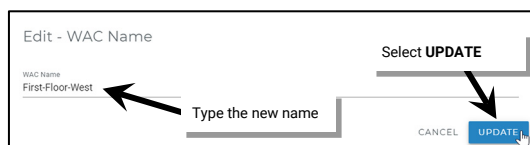
Each WaveLinX Area Controller has a default name that will appear in the WaveLinX Mobile App or WaveLinX WAC Lighting App³⁵⁷. It is possible to change this name through the internal webpages.

To change the WaveLinX Area Controller default name:

- 1: Establish a connection from the computer to the WaveLinX Area Controller as the administrator user.
- 2: Select the **System** page, and then in the system info section, select the pencil icon to open the page for editing.

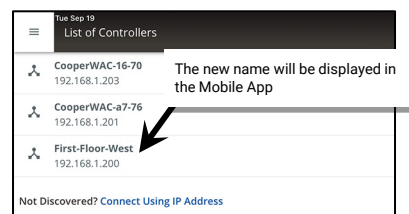


- 3: Type the new name (letters, numbers, and hyphens only). Select **UPDATE** and verify the success message appears. The new name will display in the WaveLinX App.



Verify success

WAC name updated successfully!



³⁵⁷ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

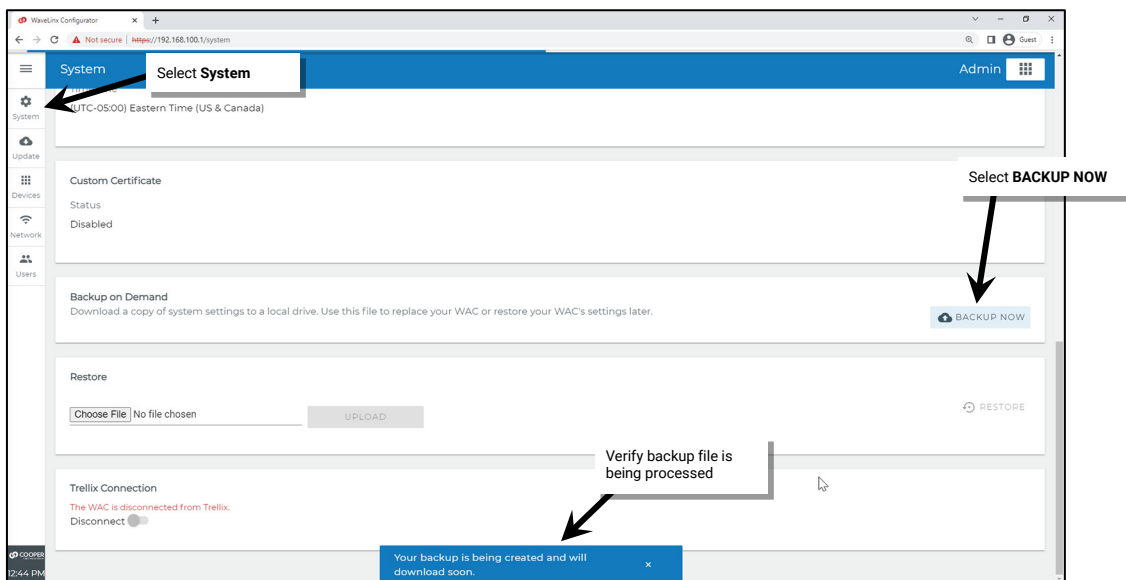
Performing a System Backup

Perform system backups regularly. The system should be backed up:

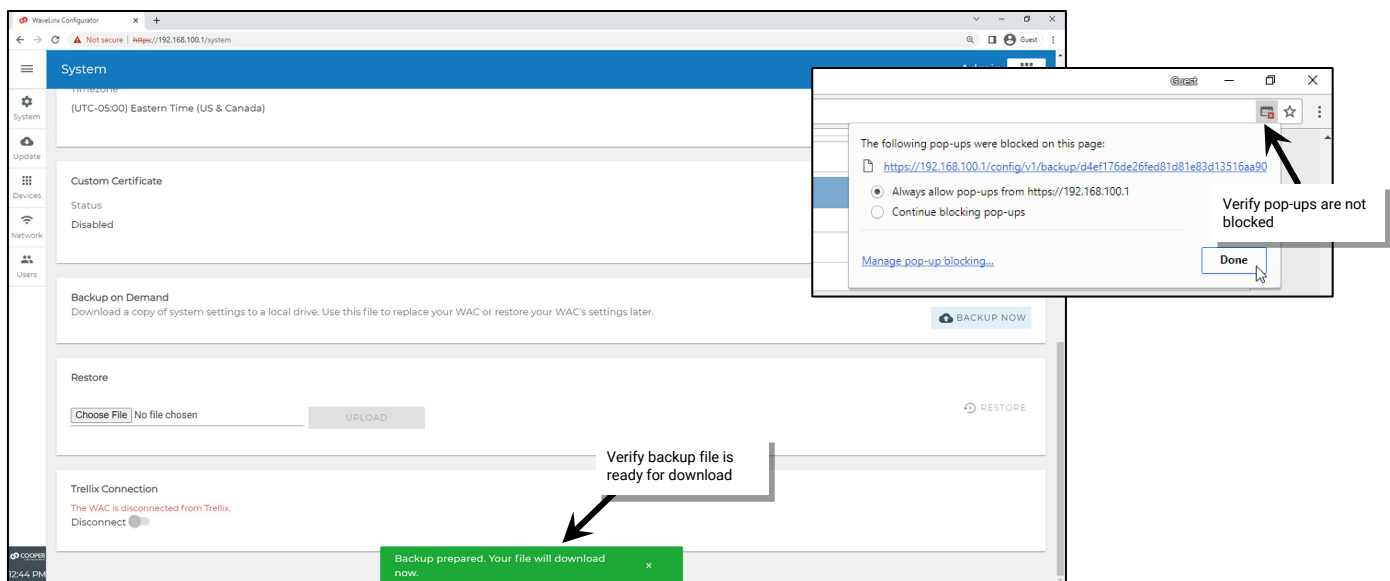
- Once the system is initially running and operational
- Before making significant changes
- Before updating WaveLinX Area Controller or device firmware (recommended)
- After updating WaveLinX Area Controller or device firmware (recommended)

The system may be restored from the backup if programmed changes do not operate as intended or if replacing the WaveLinX Area Controller in the event of a failure.

- 1: Establish a connection from the computer to the WaveLinX Area Controller as the administrator user.
- 2: Select the **System** page and locate the **Backup on Demand** section. Click **BACKUP NOW** and confirm that the backup indication message appears.

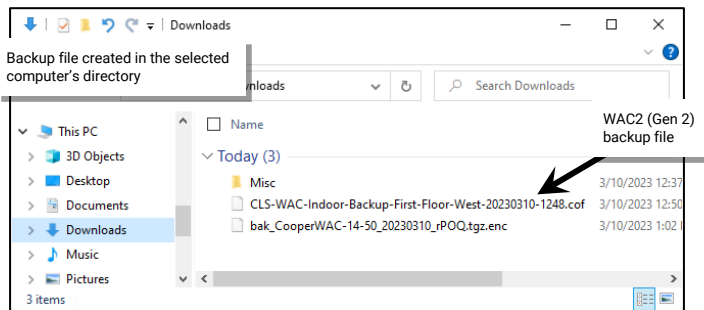


- 3: After a few minutes, the file download should be ready to start. Select the location where the file should be stored on the computer. If the download does not appear, verify that popups are not blocked for this site, and then try again.



4: Verify that the file is in the selected computer directory. The file name will reflect the WaveLinx Area Controller name and the date that the backup was created.

- **WAC2 (Gen 2):** The file extension for the backup file will be **.cof**



Performing a System Restore or WaveLinx Area Controller Replacement

Restore the system at any time from a previously created backup file. A backup may also be restored to a replacement WaveLinx Area Controller if necessary. During restoration, devices will remain in their current state for the duration of the loss of communications timer after which they will go to their out-of-the-box behavior. Once restoration is complete, and they have rejoined the wireless network, devices will resume normal operation.

Details on Restoring a Backup to the Same WaveLinx Area Controller

A backup can be used to restore a previous version of programming to the same WaveLinx Area Controller, effectively rolling back programming to a previous version. In this type of restore, any devices that have been added to the system after the backup will need to be re-added as new devices. Firmware that was in place at the time of the backup will also be restored along with the programming. It may be necessary to run firmware updates after the restore is complete.

Details on Restoring a Backup to a Different WaveLinx Area Controller (WAC Replacement)

The system restore can be used to replace a WaveLinx Area Controller. If replacing a WaveLinx Area Controller, the following rules apply:

- A WAC (Gen 1) can be replaced with a WAC (Gen 1)
- A WAC (Gen 1) can be replaced with a WAC2 (Gen 2)
- A WAC2 (Gen 2) can be replaced with a WAC2 (Gen 2)

Replacing a WAC (Gen 1) with a WAC (Gen 1)

If replacing a WAC (Gen 1) that has failed with another WAC (Gen 1), once the restore is completed, the replacement unit will take on the functions and ID of the original WaveLinx Area Controller with the firmware versions from the backup file. The replacement WaveLinx Area Controller may then be backed up and restored to itself as many times as needed but may not be used to replace another WaveLinx Area Controller in the facility with a different ID. It is imperative that only the replacement unit be powered after the restore is complete to avoid communication conflicts.

For example:

- If WaveLinx Area Controller A1 fails, its backup can be restored into replacement WaveLinx Area Controller A2.
- WaveLinx Area Controller A2 can be backed up and restored to itself if it is necessary to rollback to previous programming.
- If WaveLinx Area Controller A2 also fails, it can be replaced by a new WaveLinx Area Controller A3.
- If a WaveLinx Area Controller in another area of the facility fails (B1), and the B WaveLinx Area Controller is deemed more critical than the A WaveLinx Area Controller, WaveLinx Area Controller A2 cannot be moved to replace WaveLinx Area Controller B1 (A2's ID was previously overwritten by A1's ID and cannot be overwritten again with the B1 ID).
- If the replacement WaveLinx Area Controller A2, mistakenly has WaveLinx Area Controller B1's backup restored into it, and then the mistake is realized and the A1 backup is then restored, the WaveLinx Area Controller will appear online, but the devices will not join the WaveLinx Area Controller. To recover from this issue, factory reset all paired devices (except the WaveLinx Area Controller). Then, pair the devices to the WaveLinx Area Controller again. Once paired, the devices will begin operating per the programming in the restored A1 database.

Replacing a WAC (Gen 1) with a WAC (Gen 2)

If replacing a WAC (Gen 1) that has failed with a WAC2 (Gen 2), once the restore is completed, the replacement unit will take on the functions and ID of the original WaveLinx Area Controller. The WAC2 (Gen 2) will restore programming but not the firmware from the WAC (Gen 1) backup file. The replacement WaveLinx Area Controller may then be backed up and restored to itself as many times as needed. It is imperative that only the replacement unit be powered after the restore is complete to avoid communication conflicts.

Unlike the WAC (Gen 1), the WAC2 (Gen 2) may be used to replace another WaveLinx Area Controller with a different ID. The WAC2 (Gen 2) ID may be overwritten as many times as needed.

Replacing a WAC (Gen 2) with a WAC (Gen 2)

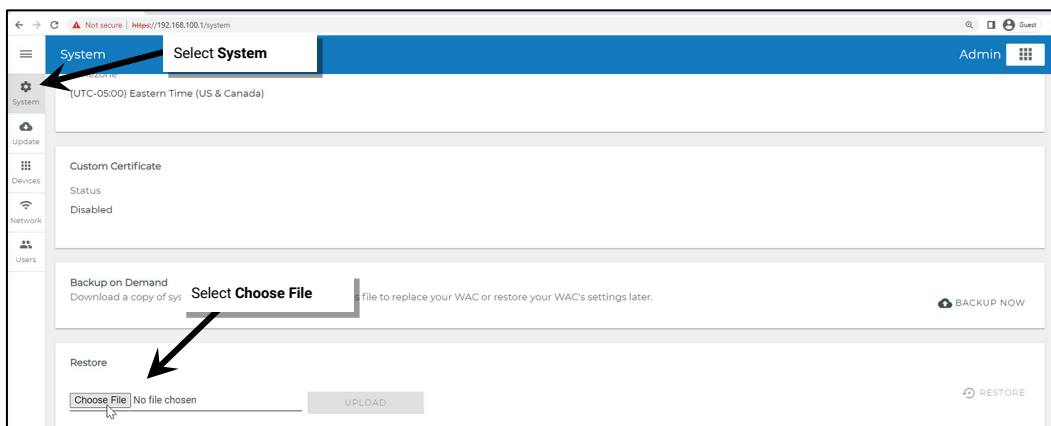
If replacing a WAC (Gen 2) that has failed with a WAC2 (Gen 2), once the restore is completed, the replacement unit will take on the functions and ID of the original WaveLinx Area Controller with the firmware versions from the backup file. The replacement WaveLinx Area Controller may then be backed up and restored to itself as many times as needed. It is imperative that only the replacement unit be powered after the restore is complete to avoid communication conflicts.

Unlike the WAC (Gen 1), the WAC2 (Gen 2) may be used to replace another WaveLinx Area Controller with a different ID. The WAC2 (Gen 2) ID may be overwritten as many times as needed.

Steps to Process a System Restore

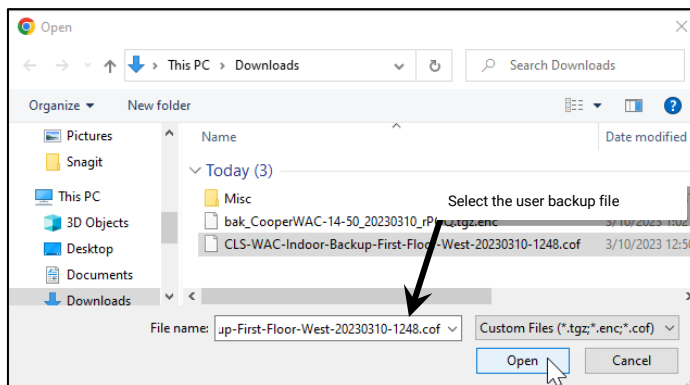
To restore the system:

- 1: If replacing a WaveLinx Area Controller, ensure that **only** the replacement WaveLinx Area Controller is powered and that the Controller is set for the same IP address as the original WaveLinx Area Controller.³⁵⁸
- 2: Establish a connection from the computer to the WaveLinx Area Controller as the administrator user.
- 3: Select the **System** page and then scroll down to the **Restore** section and select the option to **Choose File**.



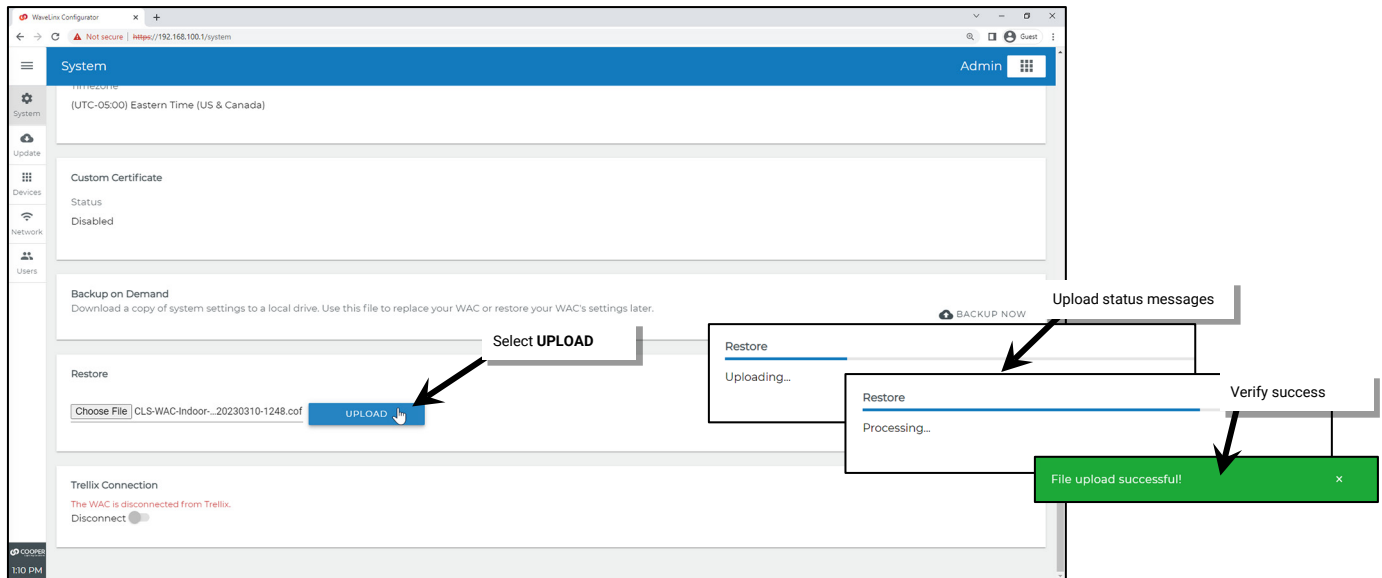
- 4: Navigate to and then select and then open the backup file to restore.

- **WAC (Gen 1):** The file extension for the backup file will be **.tgz.enc**
- **WAC2 (Gen 2):** The file extension for the backup file will be **.cof**

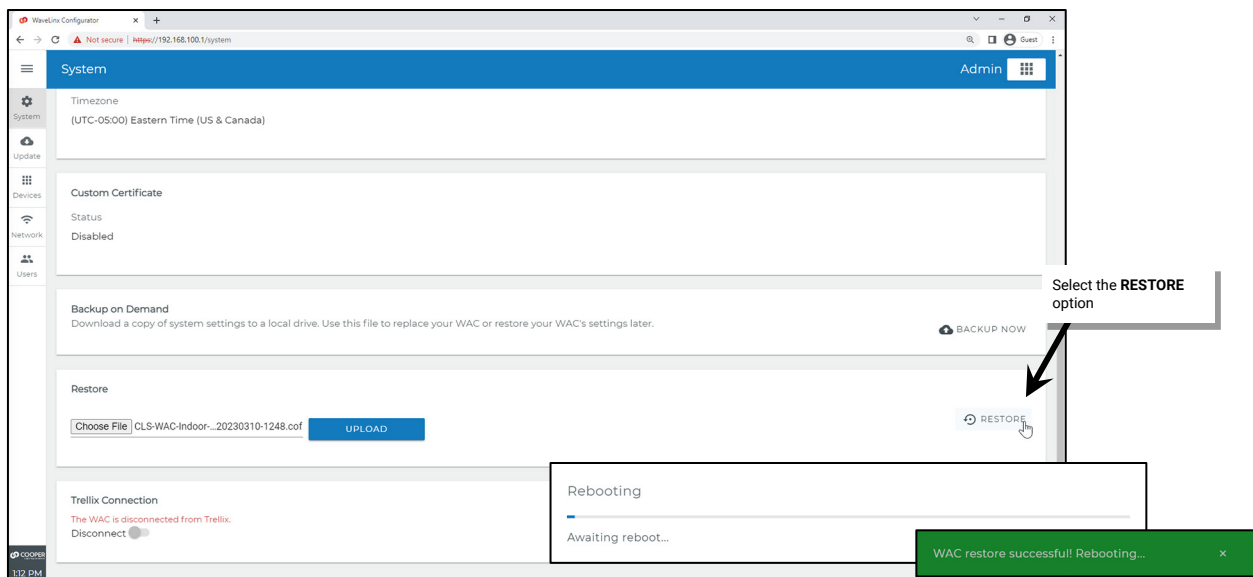


³⁵⁸ If a different IP address is being used for the replacement WaveLinx Area Controller and WaveLinx Touchscreens or WaveLinx Power Modules connected to Low-Voltage Lighting are being used in the system, it will be necessary to remap the WaveLinx Touchscreens and WaveLinx Power Module to the new IP address. For information on remapping Touchscreens, see "Changing the Touchscreen User or WaveLinx Area Controller" on page 285. For information on remapping the WaveLinx Power Module, see "Reconnecting after IP Address Changes" on page 334.

5: Click **UPLOAD**. Review the status that shows the file is uploading and processing. After several minutes, a successful upload message should display. **Continue with the below steps to complete the restore process.**



6: Next, click **RESTORE**. The restore process may take several minutes (approximately 5 minutes) as the WaveLinx Area Controller first restores the database and then reboots. Several minutes into the process, the screen may display a successful restore message and request login as the WaveLinx Area Controller reboots and loses the original connection.



At this point, the webpage can be disconnected and closed. The WaveLinx Area Controller may take approximately 45 minutes to propagate the restored information to connected devices and may take approximately an additional 45 minutes for devices to operate with the restored programming. If firmware updates are necessary after the restoration is done, wait 1½ hours prior to performing the firmware update to ensure that devices have completed the restoration and rejoining process.

Quick Links for Common Questions

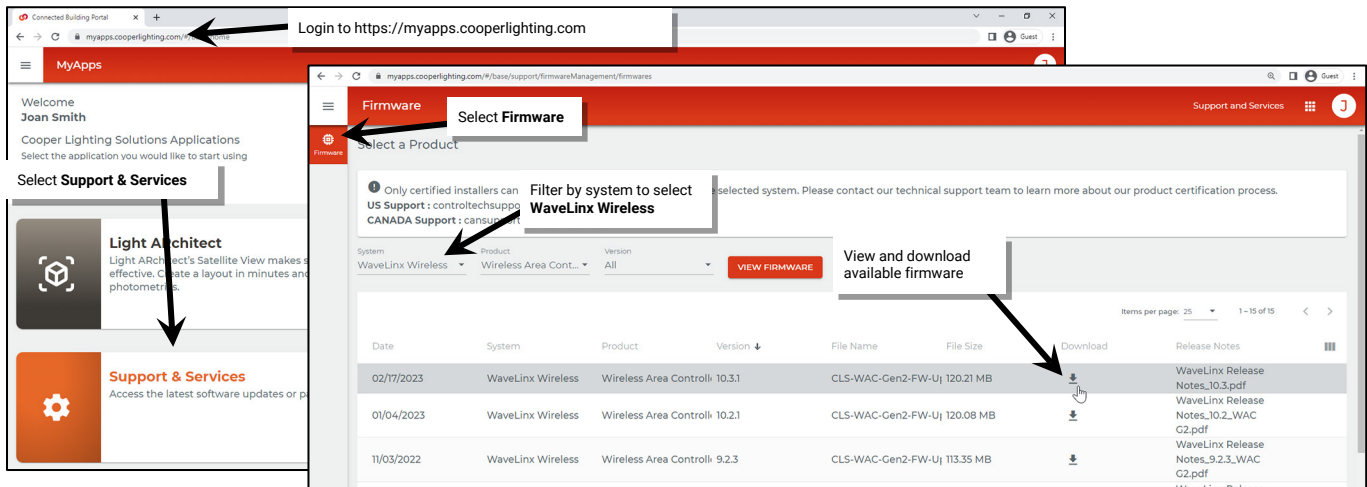
- I am replacing a failed WaveLinx Area Controller with a replacement WaveLinx Area Controller. Do I need to go through the construction grouping process to pair the devices with the new WaveLinx Area Controller or is this part of the restore function? See the answer on page 363.
- My backup was done prior to a firmware update. Can I restore the older backup if I have updated the firmware in my devices? See the answer on page 363.
- What will my devices do if they lose communication with the WaveLinx Area Controller? See the answer on page 364.

Viewing and Updating Firmware of the WaveLinx Area Controller and WaveLinx Devices

It is important to keep the WaveLinx Area Controller and installed WaveLinx devices current with firmware updates to ensure functionality and security.

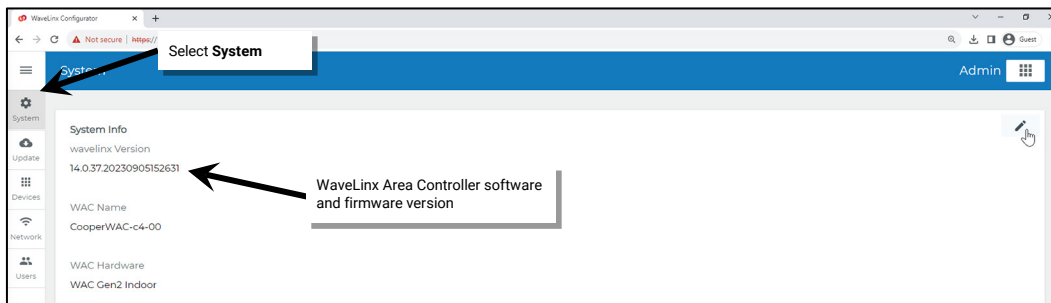
Obtaining the Latest Firmware/Software for the WaveLinx System

Check for updates by using a web browser to log in to the Cooper Lighting Connected Building Portal at <https://myapps.cooperlighting.com> with the email address registered in the WaveLinx App. Once logged in, select **Support and Services**, and then select **Firmware**. Filter for WaveLinx Wireless firmware updates. Select download to save any updates to the computer. The WaveLinx update file typically contains the WaveLinx Area Controller updates as well as any updates for specific WaveLinx devices.



Viewing Firmware/Software of the WaveLinx Area Controller

To view the current firmware and software versions for the WaveLinx Area Controller, access the internal WaveLinx Area Controller webpages and select the system page. The operating system and firmware version will be displayed in the system info section at the top of the page.

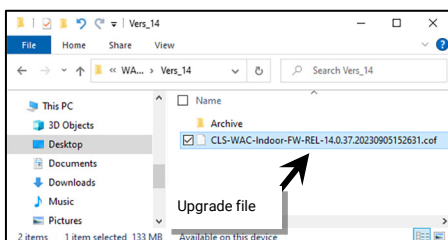


Updating the Firmware/Software of the WaveLinx Area Controller

To perform an update to the WaveLinx Area Controller firmware/software:

1: Download the firmware/software file from the Cooper Lighting Connected Building Portal, <https://myapps.cooperlighting.com>, and save it to the computer being used to perform the update. If the file is in a .zip format, unzip the files to a known location.

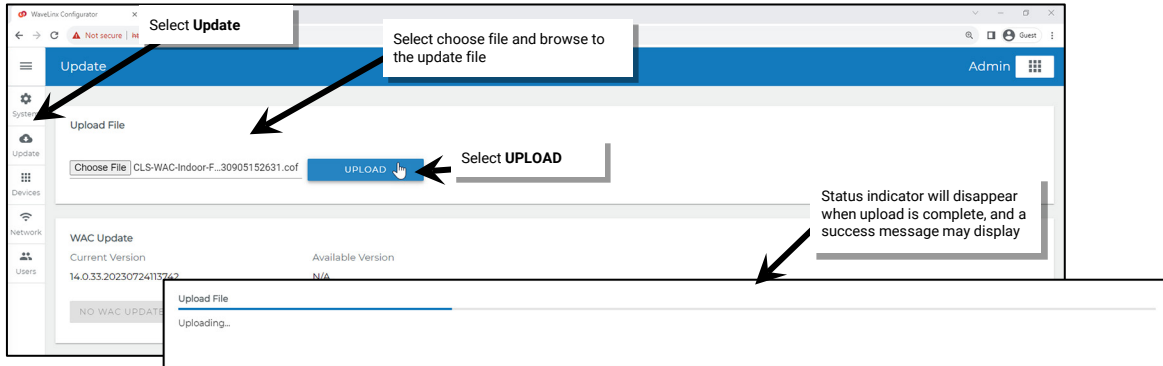
- **WAC (Gen 1):** The filename should appear as otaUpdate_XXXXXXX.tgz.
- **WAC2 (Gen 2):** The filename should appear as CLS-WAC-Indoor-FW-REL-X.X.X.XXXXXX.cof.



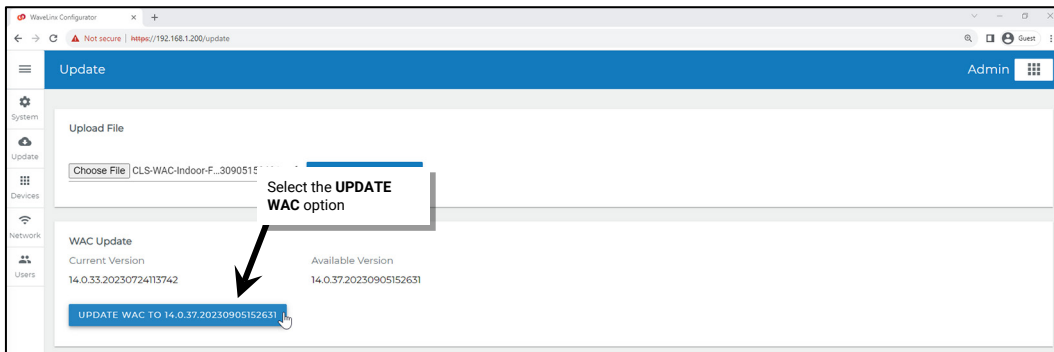
- 2: Establish a connection from the computer to the WaveLinx Area Controller as the administrator user.
- 3: If necessary, turn off the browser popup blocker for this website and then create a backup of the current programming.



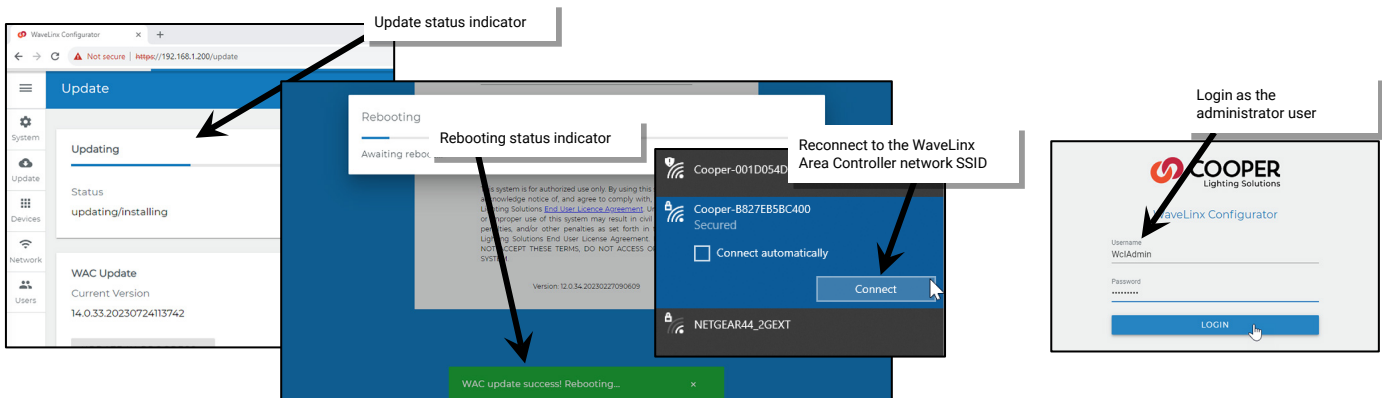
- 4: Select the **Update** page, and then select the **Choose File** button to navigate to the location of the update file saved on the computer. Select the **UPLOAD** button. The upload status will disappear when the upload is completed.



- 5: Next, scroll down to the **WAC Update** section, to review the available updates for the WaveLinx Area Controller. If an update is available, select the **UPDATE WAC** button to proceed.



- 6: The update process takes approximately 5 minutes during which the system may display a status bar and a rebooting status. If the WaveLinx Area Controller is visible, the power/health LED or other LEDs may flash during the update and reboot process. Once complete, the power/health LED and the blue 802.5.4 LED will turn ON and remain ON. (Other LEDs may also be ON). If necessary, reconnect the computer Wi-Fi³⁵⁹ to the WaveLinx Area Controller and login as the administrator user.



³⁵⁹ If the SSID does not appear in the list of available networks, the system has not yet completed the update.

Updating the Firmware of WaveLinX Devices

The devices that are paired to the WaveLinX Area Controller may be updated from the WaveLinX Area Controller webpages. This includes all WaveLinX PRO devices, WaveLinX LV devices, and WaveLinX CAT devices. Touchscreens (v1.1 or higher) that have been connected to the WaveLinX Area Controller can also be updated through the WaveLinX Area Controller webpages.

Updates may be done manually or may be selected to happen automatically using the auto-upgrade feature. Regardless of the method chosen, the WaveLinX Area Controller ensures that devices meet minimum firmware requirements. If a paired device does not meet minimum requirements, the WaveLinX Area Controller will automatically update the device firmware 1 hour after the WaveLinX Area Controller reboots or at midnight the day that the discrepancy is detected.

The firmware files for WaveLinX devices are loaded with the WaveLinX Area Controller firmware/software file. If necessary, an individual device's firmware file may also be loaded into the WaveLinX Area Controller.

- Before updating device firmware, **ensure that the WaveLinX Area Controller firmware has been updated** per the instructions on page 306. This should populate the firmware for all WaveLinX devices.
- **If an individual device file has been provided**, go to the **Update** page, and then select the **Choose File** button to navigate to the location of the individual device update file saved on the computer. Select the **Upload** button. The upload status will disappear when the upload is completed. The firmware file will be available to use in the **Devices** page.

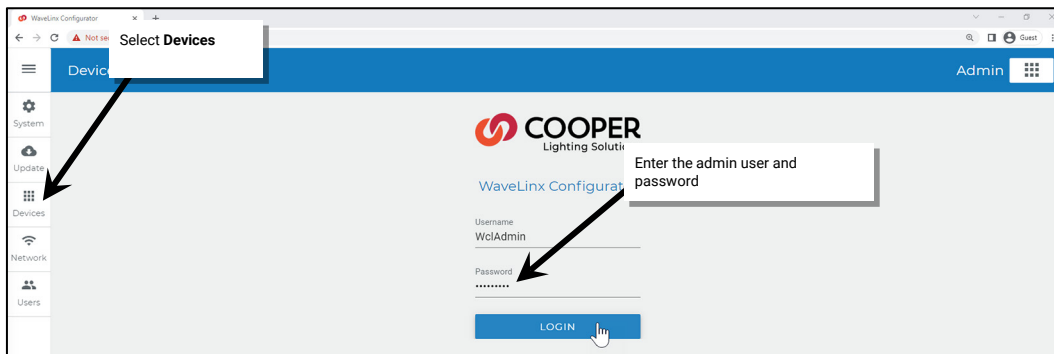
Device firmware may take a significant amount of time to update depending on the quantity of devices requiring update. Plan time accordingly.

- During firmware update, most devices will remain in their current state until the update is complete, and they have rejoined the wireless network after a reset upon completion. Then they will begin to operate from schedule events or user/device commands.
- During an upgrade to the Low-Voltage Fixture or Low-Voltage Fixture with Integrated Sensor, the fixtures will turn FULL ON. After the upgrade is complete, they will return to normal operation.

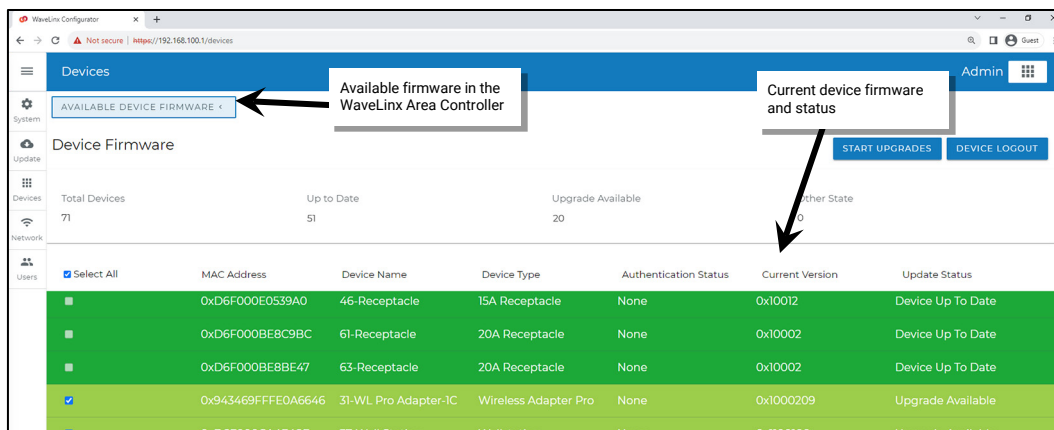
Manually Updating WaveLinX Device Firmware

To manually update WaveLinX device firmware:

- 1: Establish a connection from the computer to the WaveLinX Area Controller as the administrator user.
- 2: Select the **Devices** page. When prompted, re-enter the Administrator username and password. (Username: WclAdmin, Password: Enter the assigned password. If the WaveLinX Area Controller is still in default configuration, the default password is wclAdmin).



- 3: A list of paired devices along with a **total device** count, **up to date** device count and **upgrades available** device count will be shown. If desired, review the **AVAILABLE DEVICE FIRMWARE** list against the actual device firmware.



4: All devices requiring updates will be selected by default. It is recommended to leave all upgradable devices selected although it is possible to change the selection by clicking to remove or add a checkmark.

- If a Low-Voltage Power Module requires update, any Low-Voltage devices connected to the Low-Voltage Power Module that require update will automatically be selected. Once the Low-Voltage Power Module update is completed, it will run the necessary updates for its attached devices. Low-Voltage Fixtures with Integrated Sensors will be listed twice, once for the control module and once for the Integrated Sensor.
- Bluetooth Enabled Integrated Sensors may have more than one device listed for update. If manually selecting which devices update, make sure that both devices are selected to prevent issues with operation.

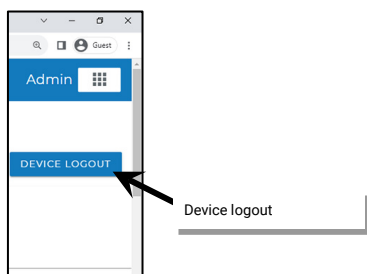
Select All	MAC Address	Device Name	Device Type	Authentication
<input type="checkbox"/>	0xD6F000E0539A0	46-Receptacle	15A Receptacle	None
<input type="checkbox"/>	0xD6F000BE8BE47	61-Receptacle	20A Receptacle	None
<input type="checkbox"/>	0x943469FFE0A6646	31-WL Pro Adapter-1C	Wireless Adapter Pro	None
<input checked="" type="checkbox"/>	0xD6F0015E45398	37-Wall Station	Wallstation	None
<input checked="" type="checkbox"/>	0xD6F0015E45398	38-Wall Station	Wallstation	None
<input checked="" type="checkbox"/>	0xD6F0015E45398	39-Wall Station	Wallstation	None

5: Select **START UPGRADES** to begin. In most cases, the update processes two devices at a time. Devices may take several minutes to process the update (some device types may take significantly longer than others). The page will show a status display indicator for devices that are actively updating and will show any devices that are pending.

Once one device finishes, the WaveLinX Area Controller will move on to the next device and will continue until all devices are updated. If the WaveLinX Area Controller is in a location that is visible, the power/health LED or other LEDs may flash during the firmware update process. Upon completion, the power/health LED will turn ON and remain ON and the blue 802.15.4 LED will be illuminated (Other LEDs may also be ON dependent on network connections).

Select All	MAC Address	Device Name	Device Type	Authentication Status	Current Version	Update Status
<input type="checkbox"/>	0xD6F000E0539A0	46-Receptacle	15A Receptacle	None	0x10012	Device Up To Date
<input type="checkbox"/>	0xD6F000BE8C9BC	61-Receptacle	20A Receptacle	None	0x10002	Device Up To Date
<input type="checkbox"/>	0x943469FFE0A6646	31-WL Pro Adapter-1C	Wireless Adapter Pro	None	0x1000209	Upgrade Pending...
<input checked="" type="checkbox"/>	0xD6F000CA4E48E	37-Wall Station	Wallstation	None	0x1100100	Downloading... 30%
<input checked="" type="checkbox"/>	0xD6F0015E4777C	38-Wall Station	Wallstation	None	0x1100100	Downloading... 93%
<input checked="" type="checkbox"/>	0xD6F000C31AE2D	40-Wall Station	Wallstation	None	0x1120101	Device Up To Date
<input checked="" type="checkbox"/>	0xD6F0015E45398	39-Wall Station	Wallstation	None	0x1120101	Device Up To Date
<input checked="" type="checkbox"/>	0x70AC08FFFEA72B01	44-Wavelinx Pro-3 Btn R/L Wallstation	Wallstation Wavelinx Pro	None	0x1020403	Device Up To Date
<input checked="" type="checkbox"/>	0x804B50FFFEDECE8A	43-Wavelinx Pro-5 Btn R/L Wallstation	Wallstation Wavelinx Pro	None	0x1020403	Device Up To Date
<input checked="" type="checkbox"/>	0xCCB6ECFFFEAE5CBE	42-Wavelinx Pro-1 Btn Wallstation	Wallstation Wavelinx Pro	None	0x1010401	Upgrade Available

It is not necessary to keep the computer connected to the system once the update starts. To disconnect, select **DEVICE LOGOUT** option, and then select the **Logout** option from the main menu. To check the status of the update later, log back in to the **Devices** page to review the status. If the update is complete, all devices will show **Device Up To Date**.



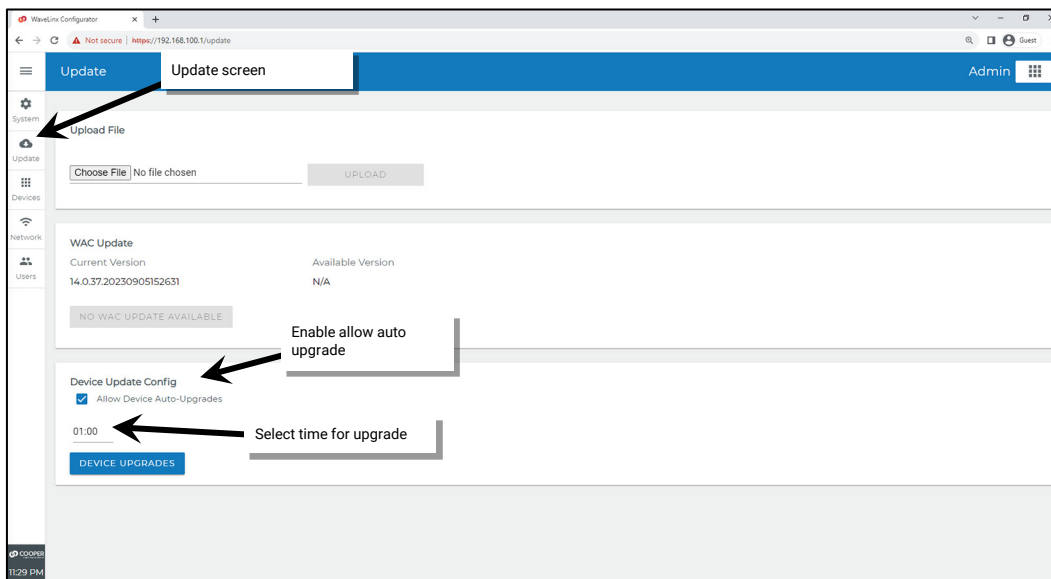
Using the Auto Upgrade Function

The auto upgrade function is disabled by default. If enabled, devices that are paired with the WaveLinX Area Controller will automatically update the firmware in the following circumstances:

- If the WaveLinX Area Controller is updated and the WaveLinX Area Controller firmware for the devices is newer than the installed devices, the update will begin 1 hour after the WaveLinX Area Controller reboots from the WaveLinX Area Controller's update. The delay allows enough time for devices to rejoin the WaveLinX Area Controller.
- At any other time, if the firmware of a paired device is found to be older than what is in the WaveLinX Area Controller, the firmware of the device(s) will be updated at the user defined time after the discrepancy is detected.

To enable the auto upgrade function:

- 1: Establish a connection between the computer and the WaveLinX Area Controller as the administrator user.
- 2: Select the **Update** page and then scroll down to the **Device Update Config** section. Enable the option to allow auto upgrades and then click on the time field to select the desired time for the auto upgrade to run.



Advanced Network Administration

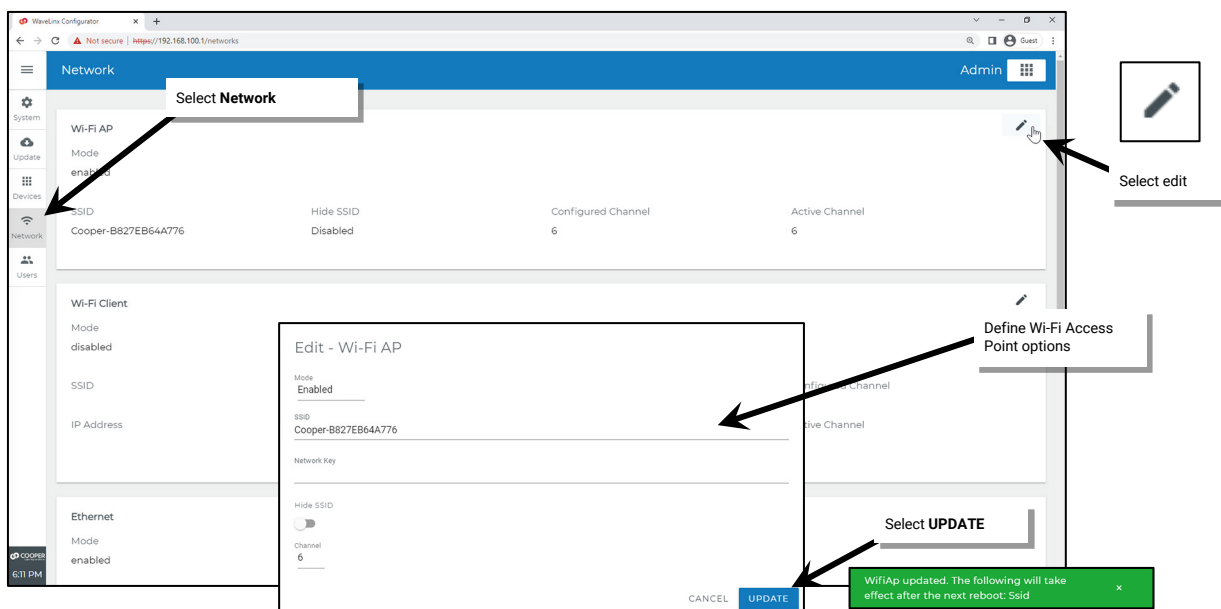
Additional administrator settings are available for advanced network functions. This includes:

- Changing Wi-Fi access point settings
- Changing Wi-Fi client settings
- Changing Ethernet settings
- Changing DNS settings
- Viewing 802.15.4 Network Settings
- Assigning a custom certificate
- Enabling and Disabling the WaveLinX CORE connection

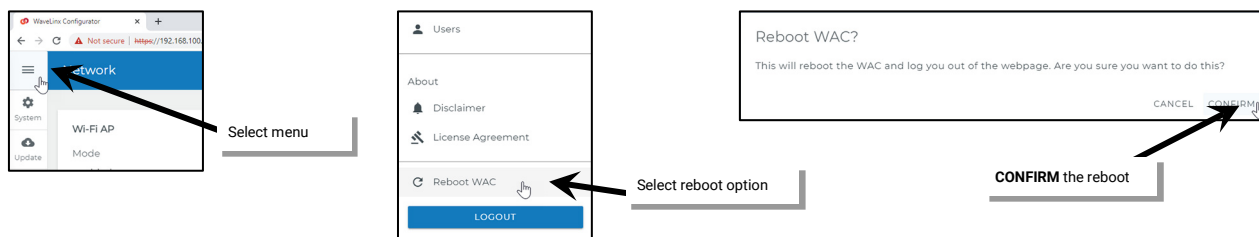
Changing Wi-Fi Access Point Settings

The WaveLinx Area Controller may be used as an access point for the WaveLinx Mobile App or WaveLinx WAC Lighting App³⁶⁰ communications. By default, the wireless access point is enabled and uses the unit's MAC ID plus one for its SSID. To update the Wi-Fi access point settings, select the **Network** page, and then click on the pencil icon in the Wi-Fi AP section. Configurable settings include:

- **Enabled/Disabled/On Demand:** If the WaveLinx Area Controller is placed on the building LAN, the internal wireless access point may be disabled. Alternately, the access point may be set for on-demand mode, allowing the access point to be temporarily enabled for 30 minutes upon reboot, or when manually triggered from the activate AP button on the webpage.
- **SSID:** Change the default SSID by typing in the new SSID.
- **Network Key:** Update the default network key (password) to be unique and more complex to enhance access point security.
- **Hide SSID:** Hide the SSID to prevent it from appearing as an available wireless network. Users may enter the SSID to manually connect to the access point. If connecting manually, the wireless access point defaults to using WPA2 security by default.
- **Channel:** The Wi-Fi Access Point will automatically select a Wi-Fi channel. Advanced administrators may change to a specific Wi-Fi channel if encountering interference on the default channel.



If Wi-Fi Access Point settings are changed,³⁶¹ reboot the WaveLinx Area Controller for the changes to take effect. From the menu select **Reboot WAC** and then confirm.

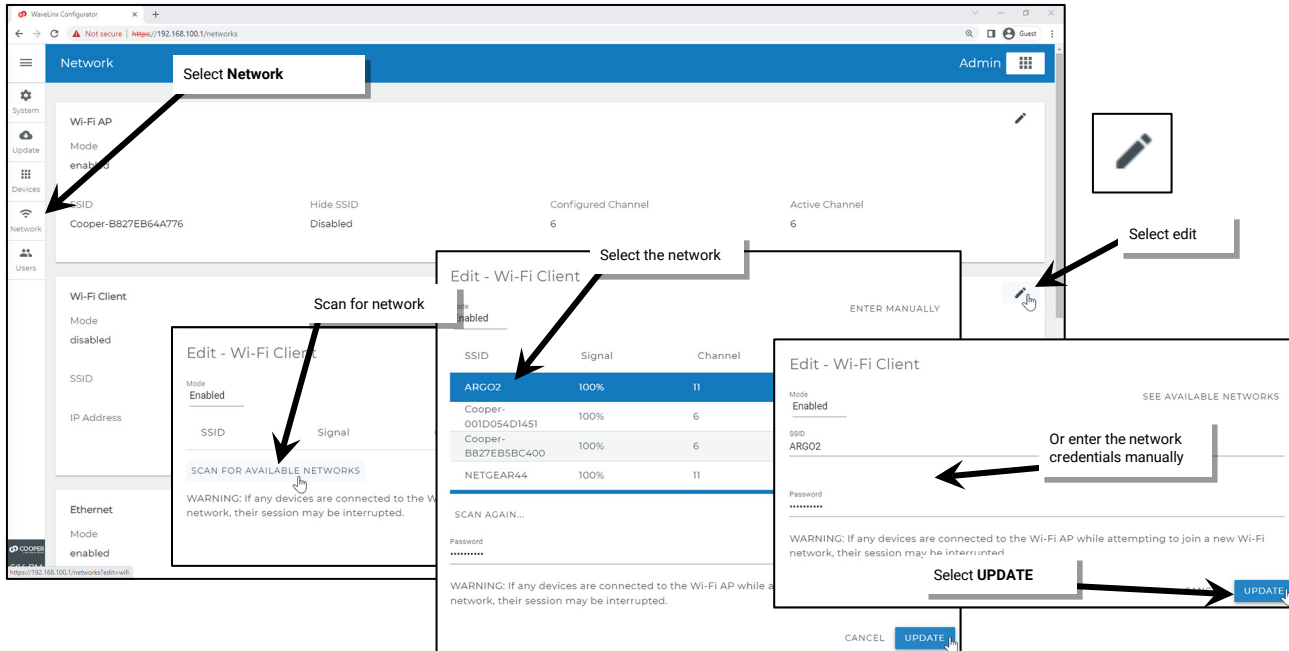


³⁶⁰ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

³⁶¹ Wi-Fi channel modification does not require a reboot.

Changing Wi-Fi Client Settings

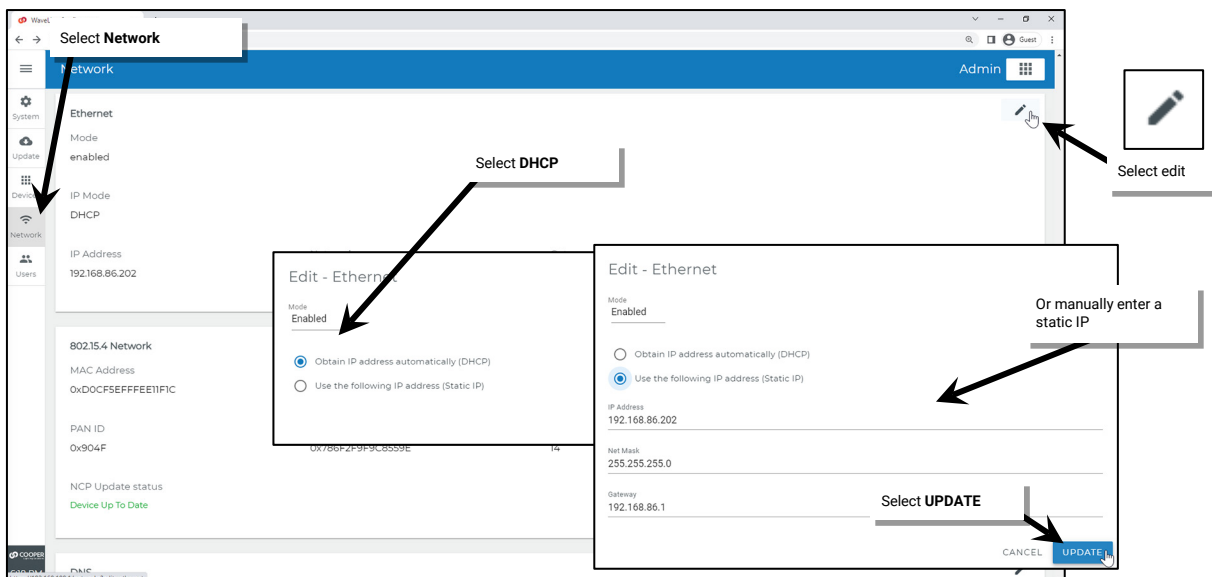
The WaveLinx Area Controller may be connected to the facility's building WLAN for wireless communications. To access the Wi-Fi client settings, select the **Network** page, then click on the pencil icon in the **Wi-Fi Client** section. The Wi-Fi client screen will open and will begin a wireless network search. Ensure that the Wi-Fi client mode is enabled, and then select the desired network. Type in the password for the network and select the **UPDATE** button. Optionally select the **Enter Manually** option to type in the necessary connection credentials by hand.



Note: If the connection to the WaveLinx Area Controller webpage is being made through the WAC's wireless access point, scanning for networks during the Wi-Fi client setup may cause the access point to disconnect. Wait until the access point is available again to complete the process or to prevent this entirely, connect to the WAC using Ethernet until the Wi-Fi client setup is complete.

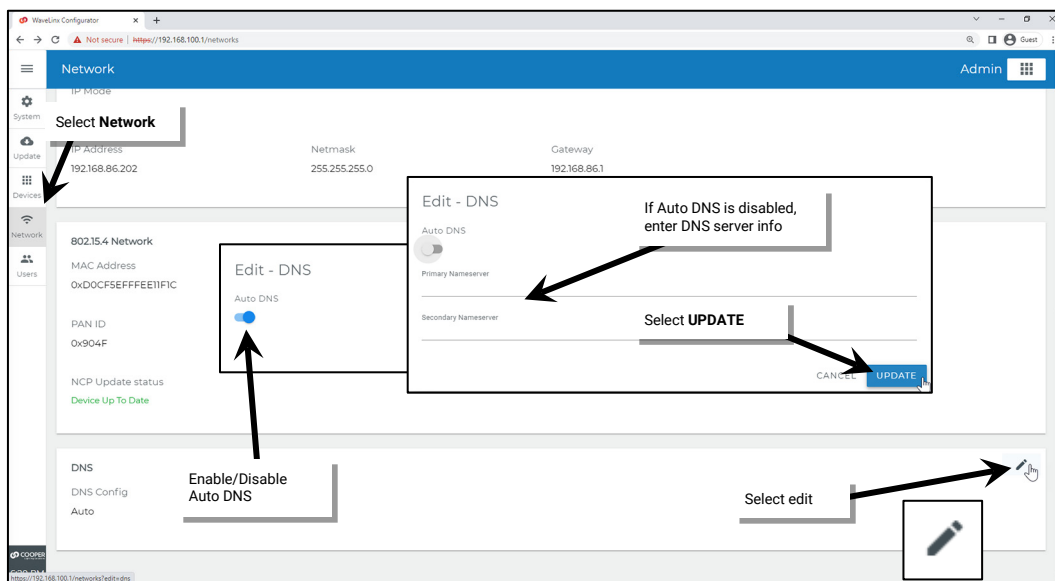
Changing Ethernet Settings

If the WaveLinx Area Controller is installed into the facility's building LAN, by default, it is set for obtaining an IP address automatically through DHCP. It is possible to assign a static IP by changing the selection to use a defined IP address, and then typing in the desired IP address, subnet mask and default gateway. To access the Ethernet settings, select the **Network** page, and then click on the pencil icon in the Ethernet section. Ensure the Ethernet mode is set to Enabled, if using an Ethernet connection, then select the desired options.



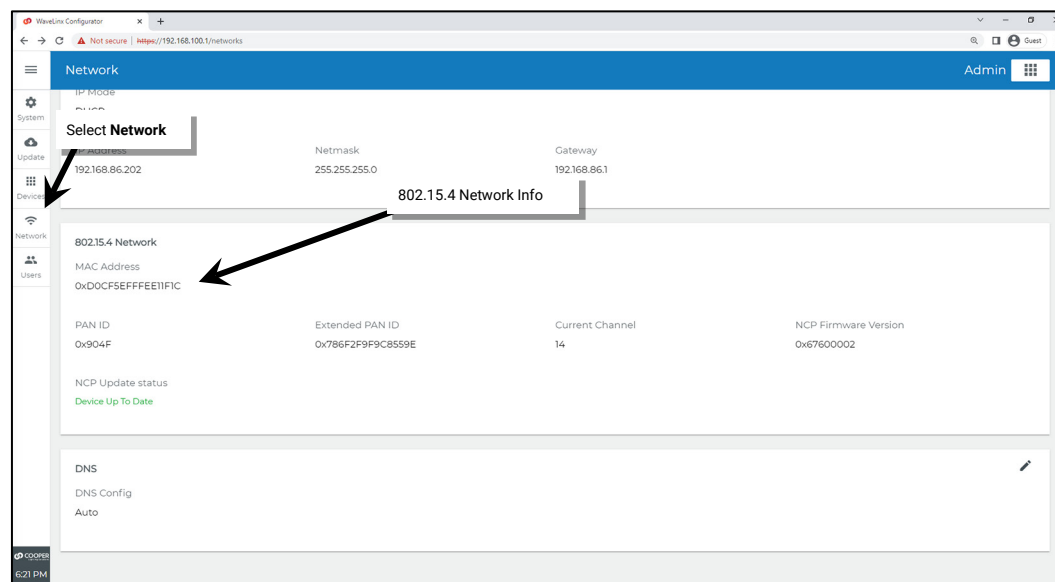
Changing DNS Settings

If not using DHCP, it is possible to hardcode the domain name server settings into the WaveLinx Area Controller. Select the **Network** page, then click the pencil icon within the **DNS** screen. To manually enter the DNS, turn off the **Auto DNS** option and then type the IP addresses of the desired domain name servers. For non-public domain name servers, use a manual name server entry.



Viewing 802.15.4 Network Settings

The WAC2 (Gen 2) allows viewing of the 802.15.4 Network settings. To view these settings, select the **Network** page, and then scroll down to the **802.15.4 Network** screen. The 802.15.4 section identifies the WAC's 802.15.4 MAC Address, PAN ID, Extended PAN ID, Channel, and Firmware version and status.

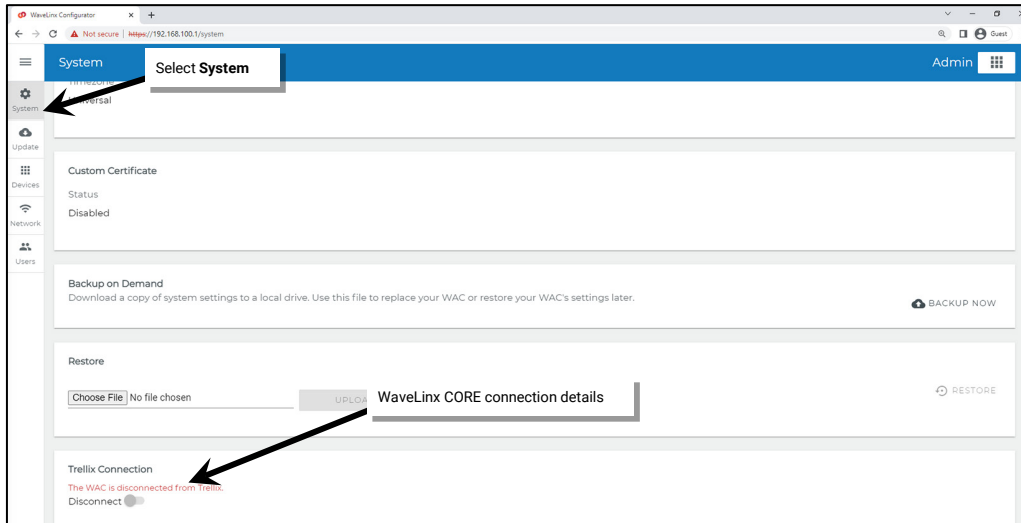


Custom Certificates

WaveLinx uses Cooper Lighting Solutions provided default SSL certificates that are installed with the system to certify WaveLinx Area Controller communication to mobile devices and computers. The provision has been made to allow for future support of other custom certificates. This custom certification option feature is not currently operational and should not be used without discussion with Cooper Lighting Solutions technical support team.

Enabling and Disabling the WaveLinx CORE Connection

The WaveLinx Area Controller can operate independently or may be connected to the WaveLinx CORE for access from the WaveLinx CORE application suite. Stand-alone WaveLinx Area Controllers will always show that the WaveLinx Area Controller is disconnected from the WaveLinx CORE system. If connected to WaveLinx CORE, the WaveLinx Webpage allows the option to switch the connection ON and OFF. This allows the WaveLinx Area Controller to be temporarily taken offline from WaveLinx CORE to operate independently. To return control to the WaveLinx CORE system, re-enable the connection to the WaveLinx CORE system.



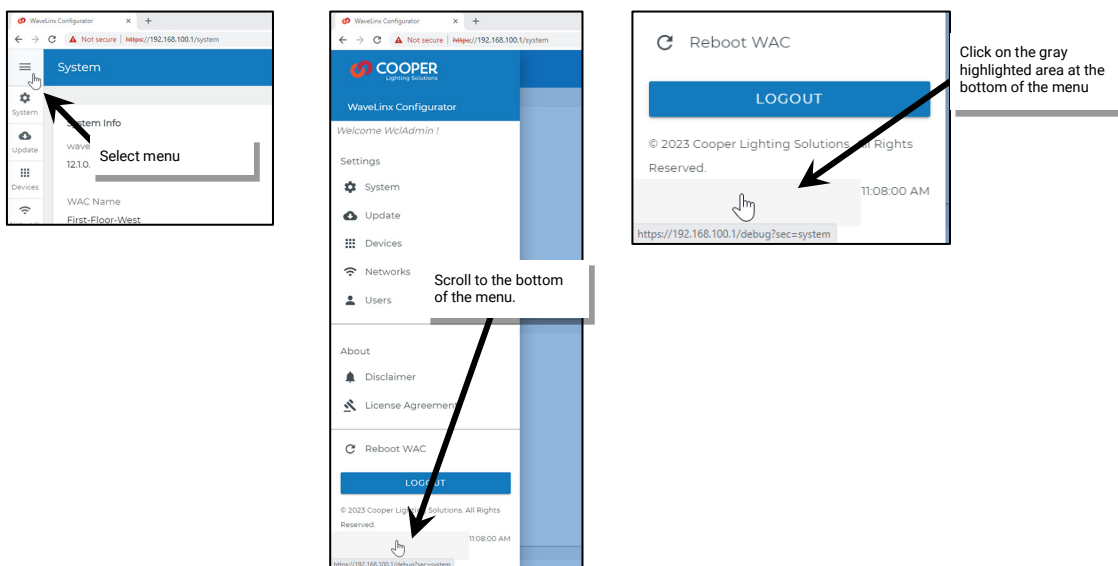
Removing Devices in the Construction Area Using the Debug Page

If multiple devices have paired with the wrong WaveLinx Area Controller, a four second press of the PAIR button will remove all devices that are still in the Construction Area, easily setting the devices back to factory default with a single action. For sites where access to the WaveLinx Area Controller is limited, the WaveLinx Area Controller's debug page may be used to perform this function, easily removing devices that are still in the Construction Area without the need to individually delete each device.

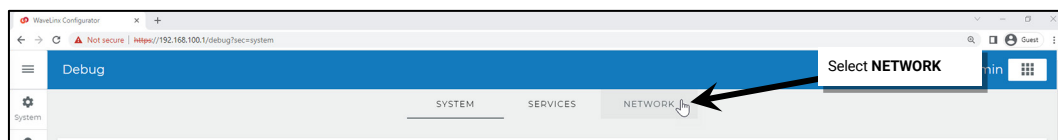
Other options may be shown beyond those described in this procedure. Do not use additional options without guidance from technical support.

To remove devices from the WaveLinx Area Controller's Construction Area using the debug page:

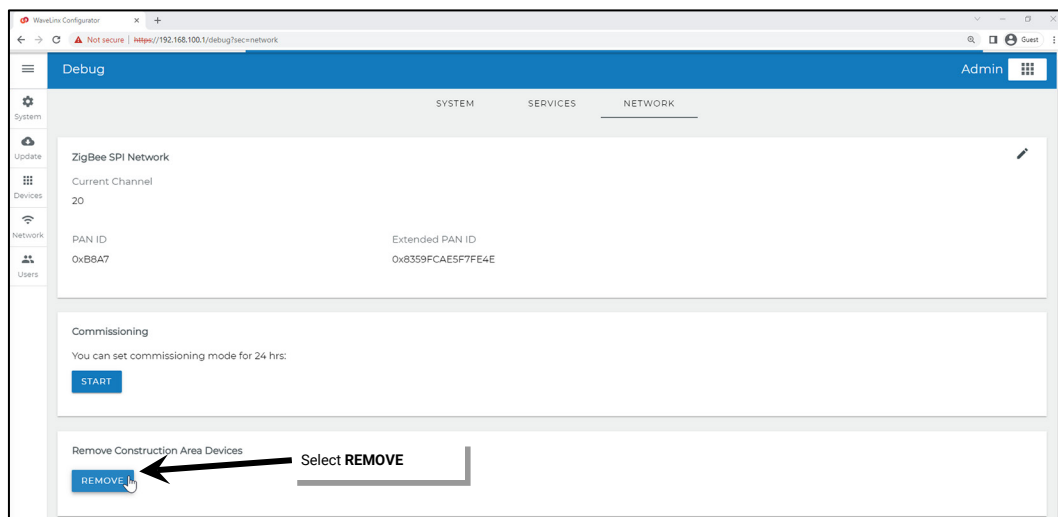
- 1: Establish a connection from the computer to the WaveLinx Area Controller as the administrator user.
- 2: Select the menu icon, then scroll to the bottom of the menu. Position the mouse arrow below the **Logout** button and copyright info. A gray highlight will appear over the white space. Click on the gray highlight to open the **Debug** pages.



3: Once the debug page displays, select **NETWORK** at the top of the page.



4: Once the network page displays, select the **REMOVE** button in the **Remove Construction Area Devices** section at the bottom of the page.



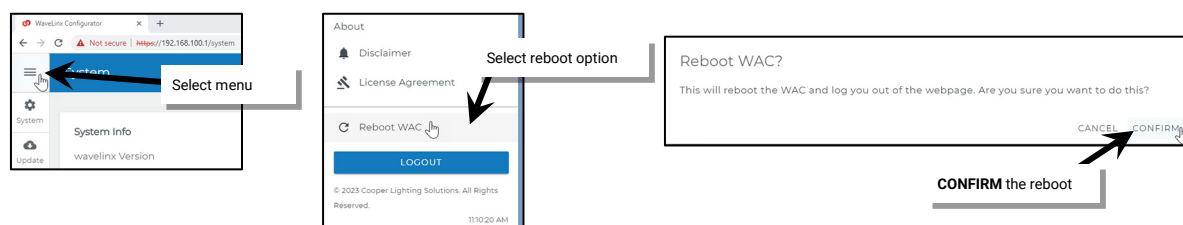
5: When prompted, select the **CONFIRM** button to confirm the removal of all devices in the construction area. The devices pairing will be removed, and the devices will revert to out-of-the-box behavior.



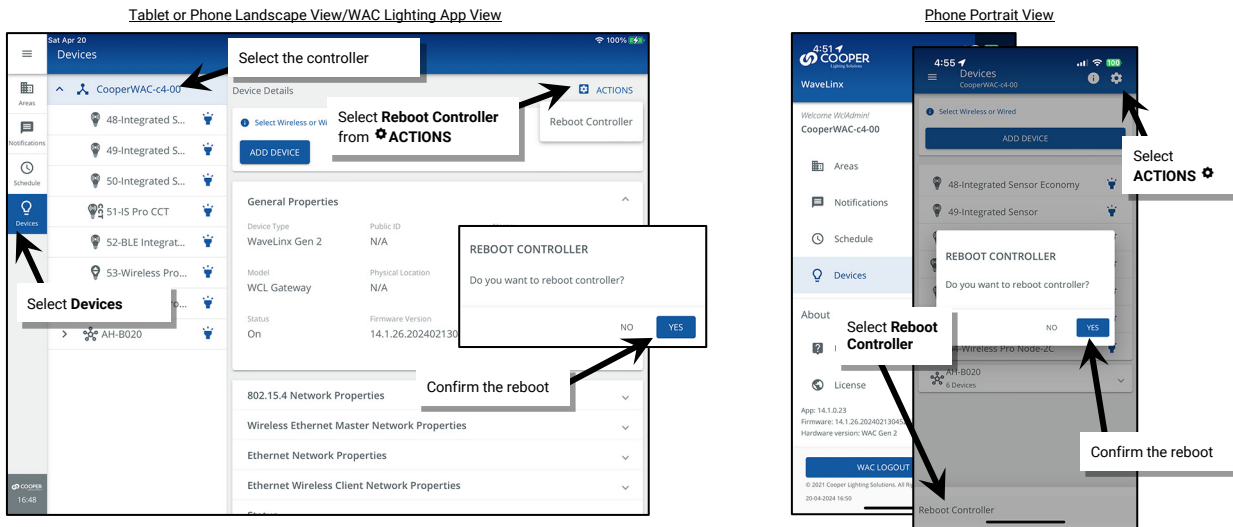
Rebooting the WaveLinx Area Controller

It is possible to reboot the WaveLinx Area Controller from the internal webpages or from the WaveLinx App. During changes to network settings, the system may prompt for a reboot.

- To perform the reboot from the WaveLinx Area Controller's internal webpages, select the reboot option from the menu and confirm.



- To perform the reboot from the WaveLinx Mobile App or WaveLinx WAC Lighting App³⁶², select the **Devices** option from the menu. Select the WaveLinx Area Controller, then tap the **ACTIONS** option. Select **Reboot Controller** and then confirm.



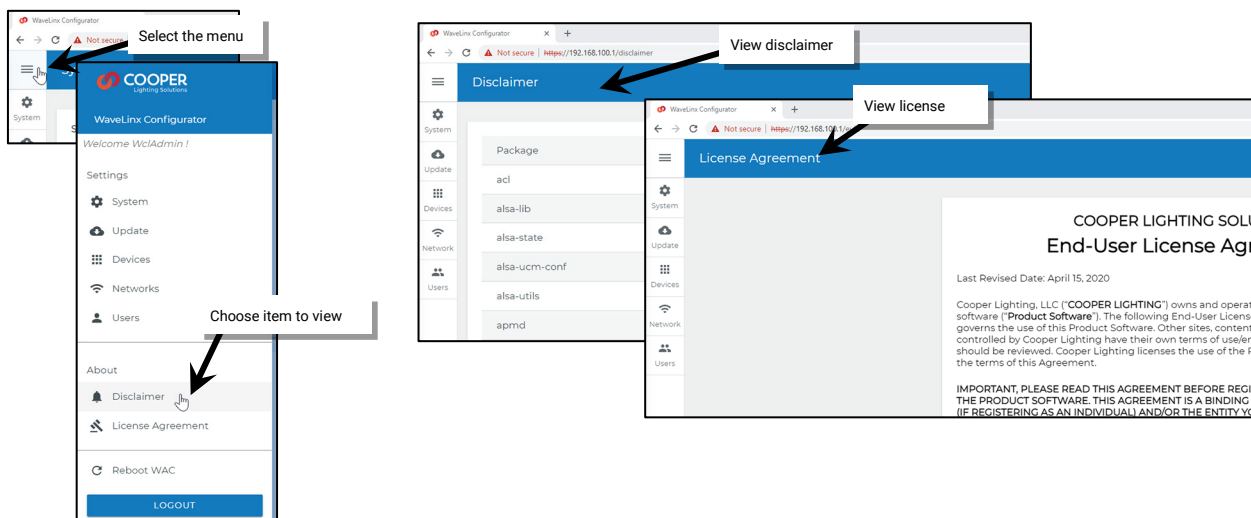
Once started, a reboot takes approximately 2 to 4 minutes to complete. Status messages may be displayed on the WaveLinx Area Controller's internal webpage as the reboot processes.

Viewing Disclaimers and End User License Agreements

The WaveLinx Area Controller internal webpages display required disclaimer and end user license agreement pages which may be viewed as needed.

To access this information:

- 1: Establish a connection from the computer to the WaveLinx Area Controller as the administrator user.
- 2: Select the menu icon, then select the **Disclaimer** or **License Agreement** option to view the desired item.

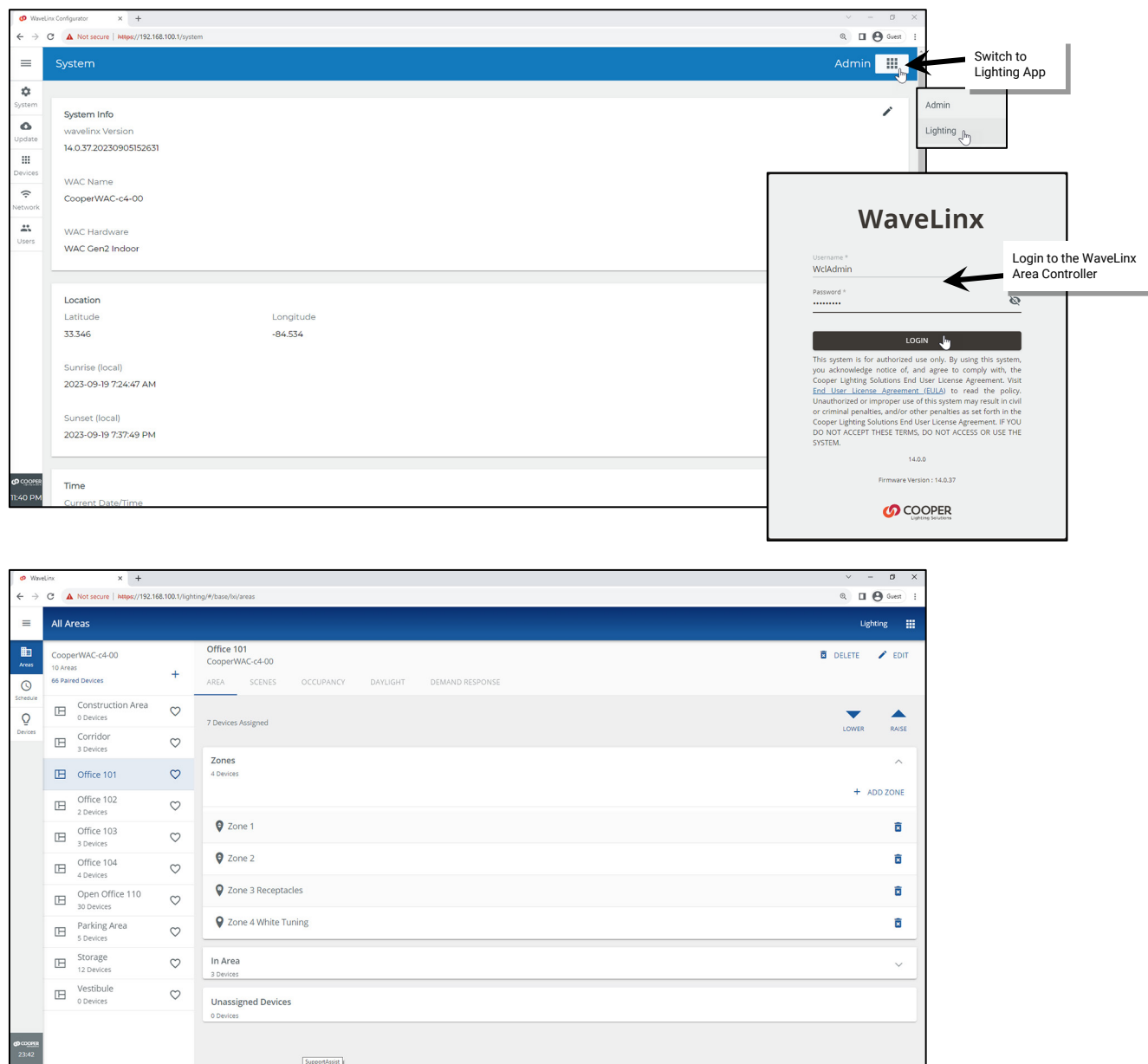


³⁶² The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Using the WaveLinX WAC Lighting App

The WaveLinX Area Controller Gen 2 (WAC) internal webpages offer the capability to login via PC to administer the lighting programming through a built-lighting app. This feature requires a WAC2 with minimum software version 11.x.x.x.

The WaveLinX WAC Lighting App will have the same appearance and functionality as the WaveLinX Mobile App when logged in to a WaveLinX Area Controller. The WAC Lighting App will not require user registration or have the notification or demonstration mode features of the WaveLinX Mobile App.



For further details on accessing the WAC Lighting App, see “Preparing to use the WaveLinX WAC Lighting App” on page 112.

WaveLinX Area Hub Administration

This section is dedicated to administrator tasks as they pertain to the WaveLinX CAT Area Hub. This section discusses:

- Using the Internal Webpages of the WaveLinX CAT Area Hub
- Replacing a WaveLinX CAT Area Hub
- Deleting an Area Hub

Using the Internal Webpages of the WaveLinX CAT Area Hub

A current version web browser is used for accessing the WaveLinX CAT Area Hub's internal webpages. The internal webpages allow for basic configuration functions. This section discusses:

- Logging in to the WaveLinX CAT Area Hub webpages
- Reviewing and changing general settings
- Updating Ethernet settings
- User setting administration
- Firmware updates

Logging in to the WaveLinX CAT Area Hub Webpages

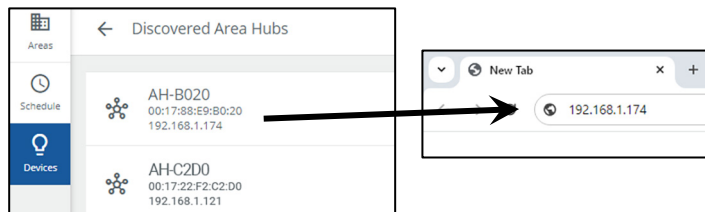
IMPORTANT NOTE: The Area Hub is automatically set to allow DHCP configuration of the IP address. If the Area Hub has been connected to a building LAN with a DHCP server, it will automatically obtain an IP address. When no DHCP server is detected on the network, after 3 minutes, the Area Hub will self-assign an IP address in the range of 192.168.1.100 to 192.168.1.255 (randomized in this range to try to avoid IP conflict with other Area Hubs that may be on the same network)³⁶³.

With either IP method, the status LED on the Area Hub will turn ON solid green indicating an IP address has been set.

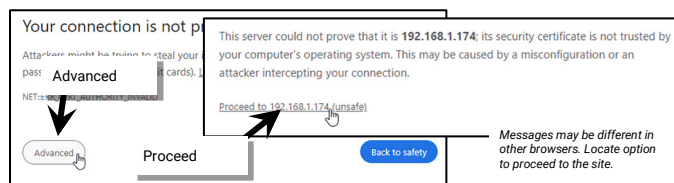
The Area Hub's Configuration screen is accessed by connecting to the Area Hub's IP address using a current web browser. Regardless of whether the Area Hub is addressed using a DHCP address, an auto-assigned static IP address or a manually assigned static IP, the first step is to identify the IP address of the Area Hub. Refer to page 25 to connect to and then discover the Area Hub which will display the IP address in the WaveLinX Mobile App. The laptop being used for configuration must connect to the same network and be given an IP address on the same subnet as the Area Hub and WaveLinX Area Controller for access.

Once the Area Hub's IP address is determined and the laptop being used is connected and configured for an IP on the same Ethernet network, follow the steps below:

- 1: Open a current version web browser and enter the Area Hub's IP address in the address bar.



- 2: Bypass warnings and proceed to the site. This step is needed only for initial login or if browser cache is cleared.



³⁶³ Prior to release 14.1.x.x, all Area Hubs defaulted to the same IP address of 192.168.100.100. If connecting to a device with older firmware, isolate the Area Hub connection to the PoE switch and connect the laptop with a static IP address on this subnet to the network. Use the 192.168.100.100 IP address to open the Area Hub Configurator. Once configuration is complete, repeat with additional Area Hubs.

3: Login to the WaveLinX Area Hub Configurator Webpage.

- Enter the admin username: **WclAdmin**,
- Enter the password:
 - Default for first time logging in: wclAdmin
 - Use assigned password after first log in
- Select **LOGIN**

4: If this is the first login, the system will force a password change. When prompted, submit a new password for the administrative user. Set a complex password when changing passwords, making sure it is something that can be remembered. Once changed, use the new password to login.

IMPORTANT! REMEMBER THE NEW PASSWORD AS IT WILL BE USED FOR ALL FUTURE ADMINISTRATOR LOGINS FOR THE AREA HUB WEBPAGE.

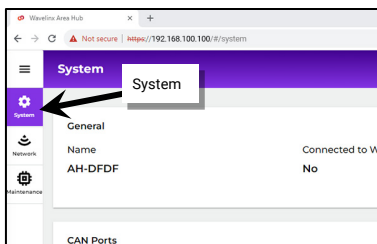
Using the System Page

The System page is used to update the Area Hub name and view the general Area Hub settings. It can also be used for basic port status and identification of the connected WaveLinX CAT ports and devices.

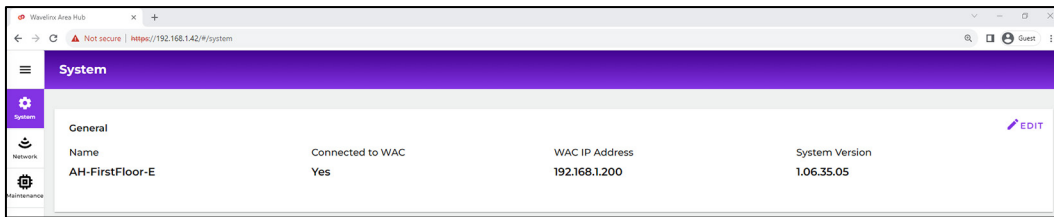
Viewing General Settings and Updating the Area Hub Name


Use the General section in the System page to view the Area Hub Name, connection status, IP address, and version. The Area Hub name can be edited in this section. The default name of an area hub is AH-XXXX where X is the last four characters of the Area Hub's MAC address. If there are multiple Area Hubs, update the name for easy identification in the WaveLinX Mobile Application. Area Hub names should be unique. Avoid duplication. Area Hub names are limited to a maximum 16 alphanumeric characters (hyphen character is allowed).

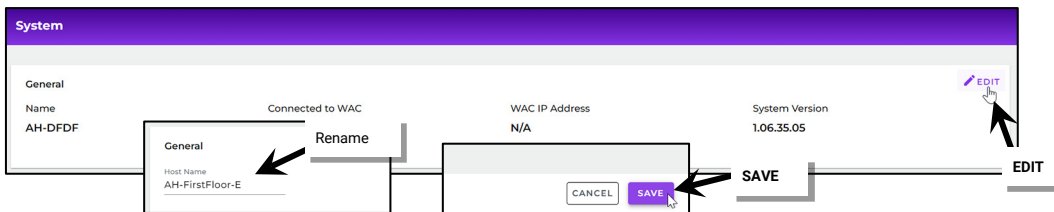
1: If needed, login to the WaveLinX Area Hub Configurator webpage and select **system**.



- 2: Review the General section details. The details include the Area Hub name, the connected WAC information, and the Area Hub software version.



- 3: To edit the Area Hub name, select **EDIT** , and then enter the new Area Hub name and select **SAVE**.



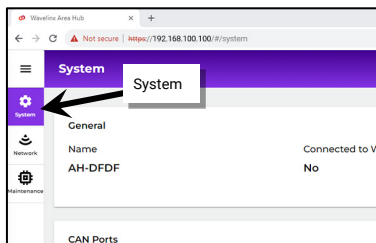
Note: If an Area Hub name is changed AFTER the Area Hub has been discovered and added to the WaveLinX Area Controller, the new name will not automatically appear. To read the new name, run an Area Hub discovery command. The name will be updated.

Using the System CAN Ports Page for Basic Status and Identification

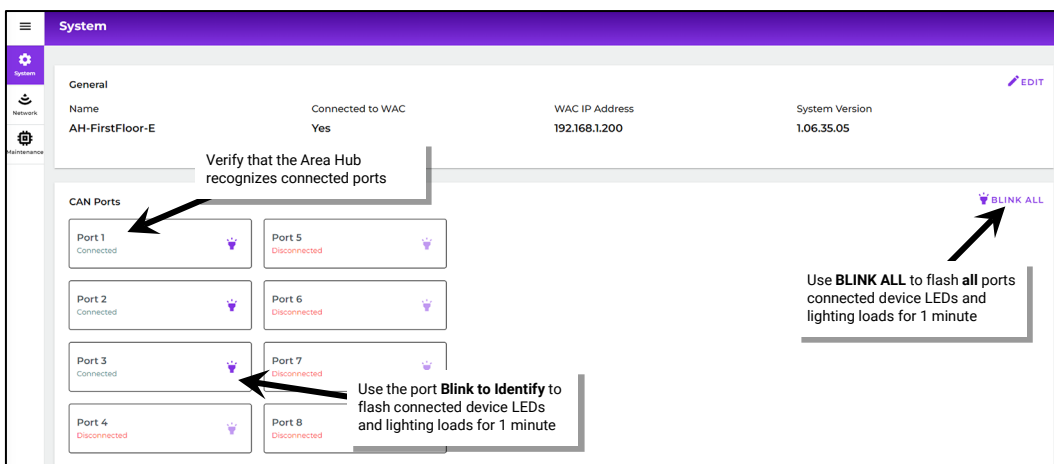
The System page can be used to do basic troubleshooting and identification of the Area Hub ports and connected CAT devices.

To use the CAN Ports section of the System page:

- 1: If needed, login to the WaveLinX Area Hub Configurator webpage and select **system**.



- 2: Use the displayed controls to view connected ports, identify what devices are connected to a specific port, or blink all devices connected to all ports of the Area Controller. (BLINKS FOR 1 MINUTE)

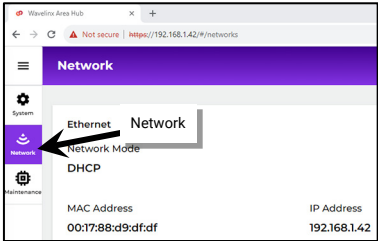


Using the Network Page

The network page is used to view Ethernet and 802.15.4 Network details used by the WAC to assist with connection. Edit the Ethernet settings to change between using DHCP IP addressing, using the auto-assigned static IP address or manually setting a static IP address.

Viewing Current Ethernet and Other Network Settings

1: If needed, login to the WaveLinx Area Hub Configurator webpage and select **network**.



2: Review the **Ethernet** section details. Ethernet details include autoconfig (auto-assigned) manual static, or DHCP setting, IP address information, and the MAC Address.

Ethernet

Network Mode

DHCP

MAC Address

00:17:88:d9:df:df

IP Address

192.168.1.42

Sub-Netmask

255.255.255.0

Gateway

192.168.1.1

EDIT

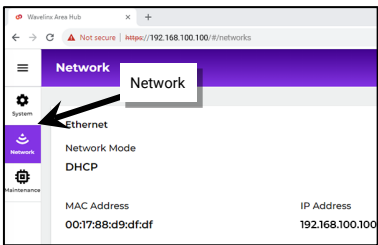
3: Review the **802.15.4 Network** section details. The 802.15.4 details include the MAC Address, PAN ID, and Extended PAN ID.

802.15.4 Network		
MAC Address	PAN ID	Extended PAN ID
051D00CA43E7C54E	ABCD	0011223344556677

Changing Ethernet Settings

The WaveLinx CAT Area Hub is set to use DHCP by default. If using a DHCP server, no further IP address settings are needed. If not using DHCP, the WaveLinx CAT Area Hub is set up to automatically configure an initial IP address in the range of 192.168.1.100 through 192.168.1.255 to allow for initial operation and configuration. Because both the 192.168.100.X and 192.168.1.X networks on the 255.255.255.0 subnet are used for default random IP address assignment, it is recommended that a different subnet be chosen for the final static IP to avoid conflict with any new devices connected to the system. ³⁶⁴

1: If needed, login to the WaveLinx Area Hub Configurator webpage and select **network**. In the **Ethernet** section, select **EDIT** .



Network

Ethernet

Network Mode

DHCP

MAC Address

IP Address

Sub-Netmask

Gateway

00:17:88:d9:df:df

192.168.100.100

255.255.255.0

192.168.100.1

EDIT

³⁶⁴ Prior to release 14.1.x.x, all Area Hubs defaulted to the same IP address of 192.168.100.100. If connecting to a device with older firmware, isolate the Area Hub connection to the PoE switch and connect the laptop with a static IP address on this subnet to the network. Use the 192.168.100.100 IP address to open the Area Hub Configurator. Once configuration is complete, repeat with additional Area Hubs.

- 3: Select between **Obtain an IP address automatically (DHCP)** and **Use the following IP address (Static IP)**. If assigning a static IP, enter the desired **IP address, net mask, and gateway**. Select **SAVE**.

The screenshot shows the 'Ethernet' configuration window. At the top, there are two radio buttons: 'Obtain IP address automatically (DHCP)' and 'Use the following IP address (Static IP)'. The 'Static IP' option is selected. Below this, there are three input fields: 'IP Address' with the value '192.168.2.45', 'Sub-Netmask' with the value '255.255.255.0', and 'Gateway' with the value '192.168.2.1'. At the bottom right, there are two buttons: 'CANCEL' and 'SAVE'. An arrow points to the 'SAVE' button.

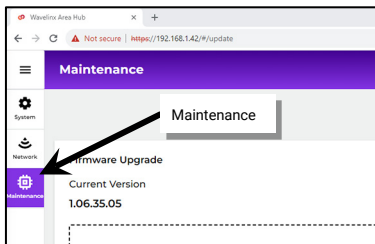
The WaveLinX Area Hub will reboot automatically and operate with the new settings.

Using the Maintenance Page to Factory Reset the Area Hub

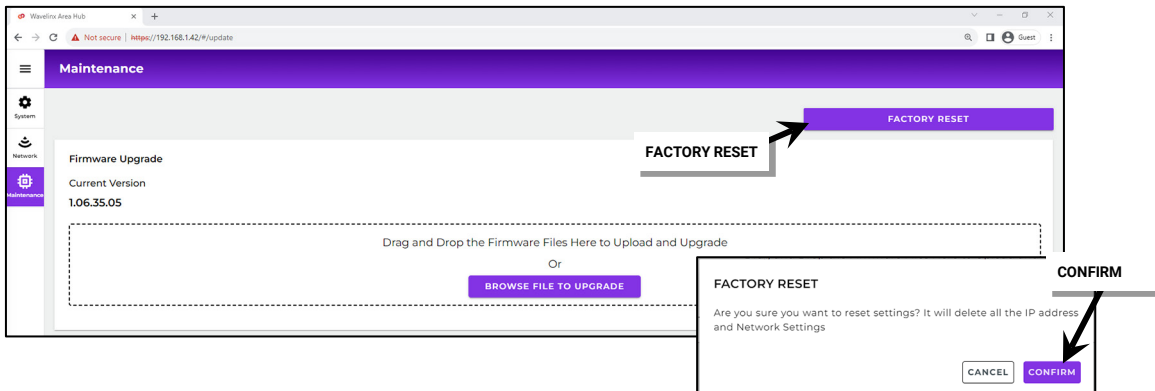
The maintenance page is used for performing a **Factory Reset**. The factory reset will erase all configured area hub settings including the area hub name and network settings. While this webpage also supports the option of updating Area Hub firmware, this function should be done through the WaveLinX Area Controller. For details on updating firmware, see "Updating the Firmware of WaveLinX Devices" on page 308.

To perform a factory reset:

- 1: If needed, login to the WaveLinX Area Hub Configurator webpage and select **maintenance**.



- 2: Select **FACTORY RESET** and then **CONFIRM** the reset.



The Area Hub will factory reset and reboot with the default settings.

Additional Menu Options

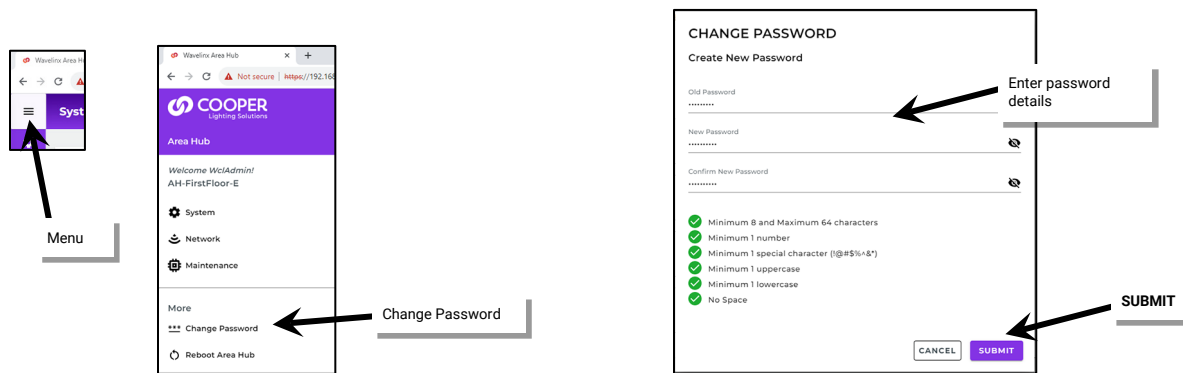
The Area Hub Webpage also contains additional menu options. This includes:

- Change Password
- Reboot Area Hub
- Viewing Disclaimer and License Agreements

Changing the Area Hub Password

To perform a factory reset:

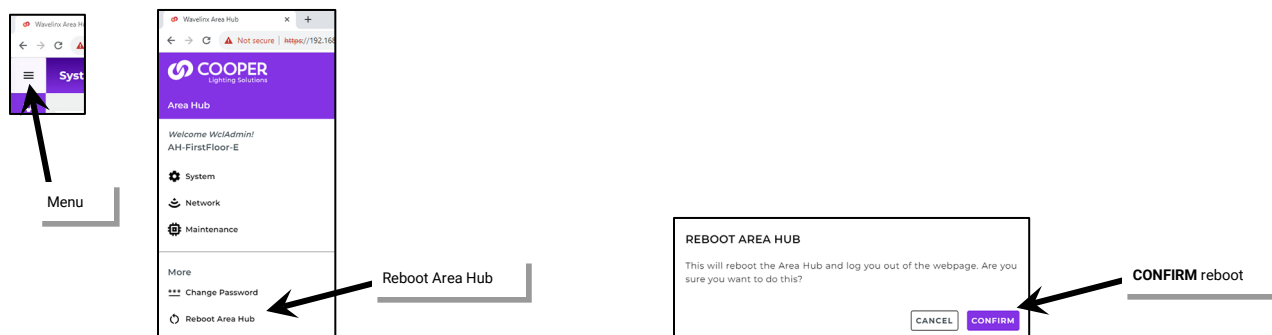
- 1: If needed, login to the WaveLinX Area Hub Configurator webpage.
- 2: Select the **menu** ≡ and then select **Change Password**.
- 3: Enter the current password and then the new desired password. Select **SUBMIT**.



Rebooting the Area Hub

To reboot the Area Hub:

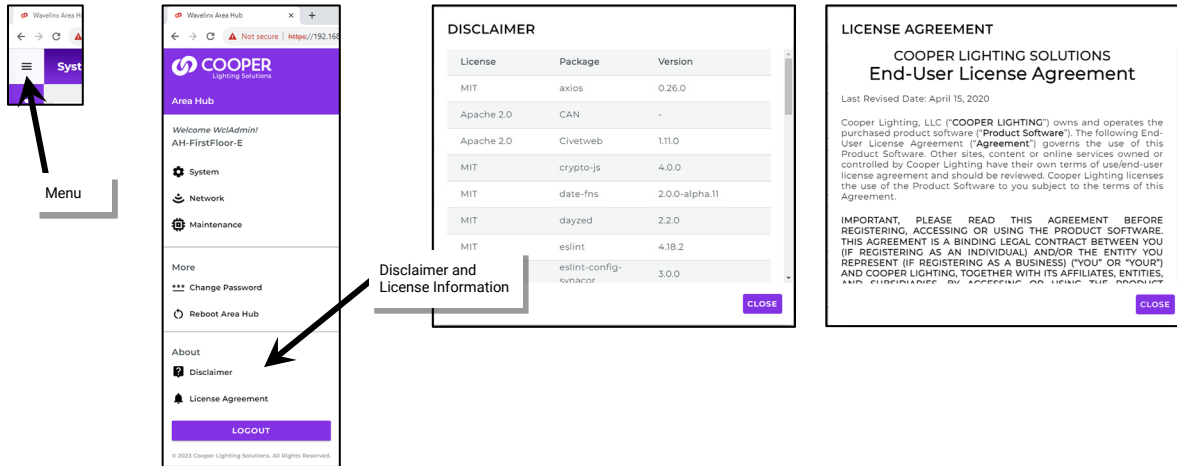
- 1: If needed, login to the WaveLinX Area Hub Configurator webpage.
- 2: Select the **menu** ≡ and then select **Reboot Area Hub**.
- 3: When prompted, select **CONFIRM**. The Area Hub will reboot.



Viewing the Disclaimer and License Agreement

To view Area Hub Disclaimer and License Agreement details:

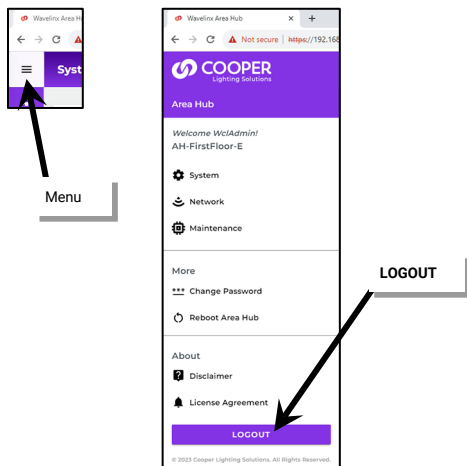
- 1: If needed, login to the WaveLinx Area Hub Configurator webpage.
- 2: Select the **menu** ≡ and then select **Disclaimer** or **License Agreement**. The selected information will be displayed.



Logging Out of the WaveLinx CAT Area Hub Webpages

The WaveLinx CAT Area Hub Webpage contains a manual Logout option to exit the webpage. The Area Hub will also automatically log the user out if the webpage is manually closed without logout or if the webpage is open for longer than 15 minutes with no activity.

To manually logout, select the **menu** ≡ and then select **LOGOUT**.





Replacing a WaveLinX CAT Area Hub

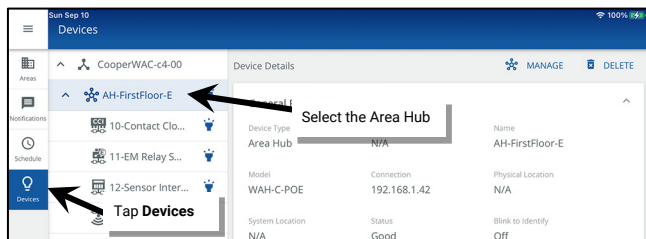
If an Area Hub needs replacement, do not delete the Area Hub from the WaveLinX App. Use the Area Hub replacement feature.

Before disconnecting devices from the Area Hub, make sure to label which port each device network connects to. The connections will need to be made to the same ports on the replacement Area Hub for proper operation.

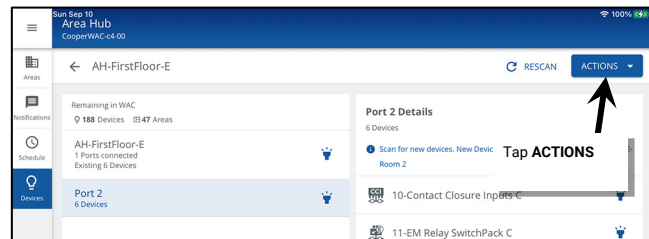
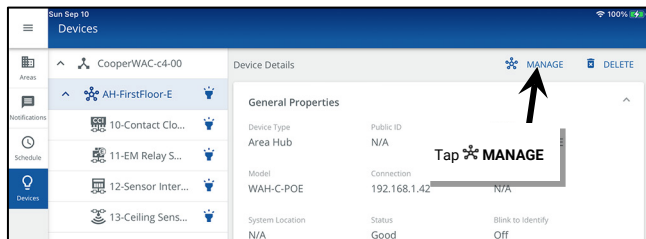
To replace the Area Hub:

- 1: Power down the existing Area Hub and label each port connection before disconnecting the ports.
- 2: Configure the new Area Hub as instructed in “Initial Configuration Steps for the WaveLinX Area Hub” on page 25. Note: the new area hub does not need to have the same IP address as the previous one but does need to be addressed in the same subnet.
- 3: Reconnect CAT device networks to the new Area Hub ports the same way they were connected on the original Area Hub. Reapply power and wait for the Area Hub to boot.
- 2: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 3: From the menu , select **Devices**. From the **Devices** list, tap the **Area Hub**.

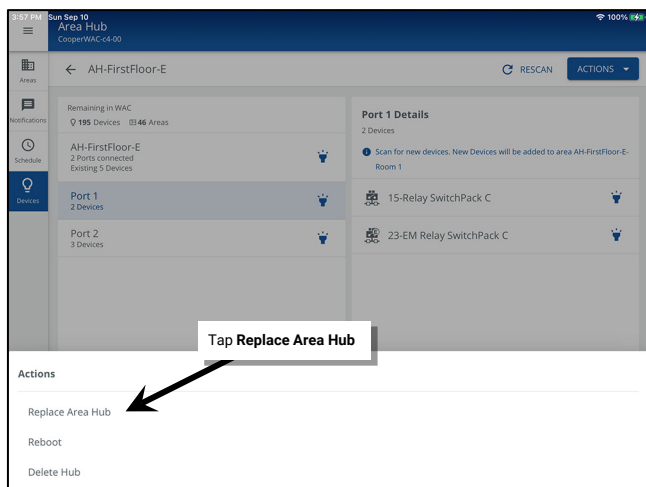
For phone devices being used in portrait view, tap  **Details**.



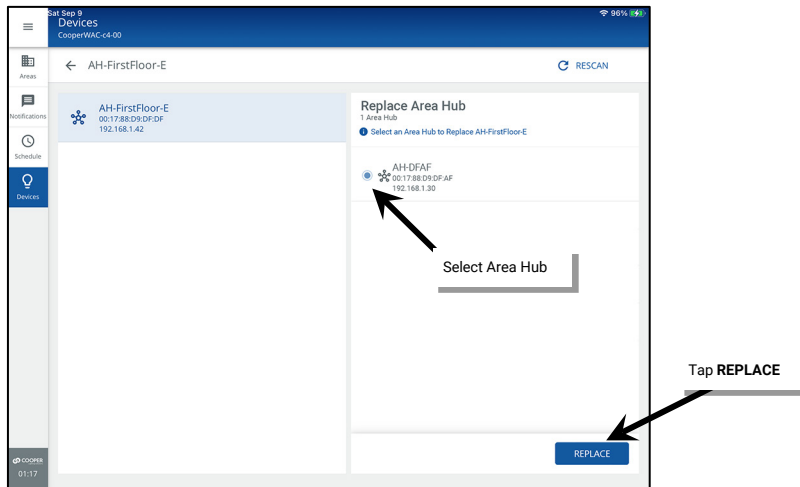
- 5: In **Device Details**, tap  **MANAGE** and then tap the **ACTIONS** dropdown.



- 6: Select **Replace Area Hub** and wait for the Area Hub discovery to complete.



7: Select the desired area hub and click on the **REPLACE** button.



Once replaced, the new Area Hub and connected devices will operate with the same functionality as the original Area Hub/devices.

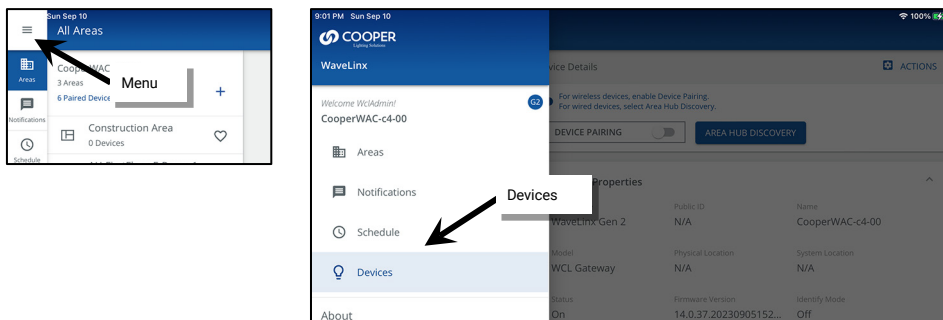
Deleting an Area Hub from the WaveLinX Area Controller

If an Area Hub has been added to the incorrect WaveLinX Area Controller, the Area Hub can be deleted. **If replacing an Area Hub, DO NOT use this method.** Refer to “Replacing a WaveLinX CAT Area Hub” on page 325 for replacement procedures.

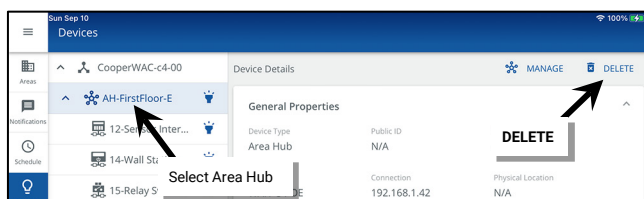
WARNING: Deleting an Area Hub from the WaveLinX Area Controller will also delete all devices and the associated port areas and programming associated with those devices. Use with caution.

To delete the Area Hub:

- 1: Using the WaveLinX Mobile App or the WaveLinX WAC Lighting App³⁶⁵, login to the WaveLinX Area Controller as the administrator user.
- 2: Select menu , and tap **Devices**.

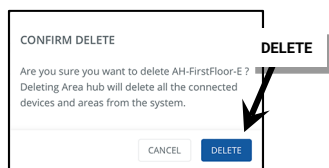


- 3: Tap the WaveLinX **Area Hub** in the **Devices** list and then select **DELETE**.



³⁶⁵ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) min. software version 11.x.x.x and higher.

4: Select **DELETE** again when asked to confirm.



The WaveLinx CAT Area Hub will return to factory defaults, ready to be added to another WaveLinx Area Controller. Any connected CAT devices will return to distributed operation.

WaveLinx Low-Voltage Power Module Administration

This section is dedicated to administrator tasks as they pertain to the WaveLinx Low-Voltage Power Module and Low-Voltage Fixtures. This section will discuss:

- Using the Internal Webpages of the WaveLinx Low-Voltage Power Module
- Identifying Low-Voltage Power Modules and Connected Fixtures
- Reconnecting after IP Address Changes
- Replacing a Low-Voltage Power Module
- Unpairing a Low-Voltage Power Module from a WaveLinx Area Controller
- Rebooting the Low-Voltage Power Module

Using the Internal Webpages of the Low-Voltage Power Module

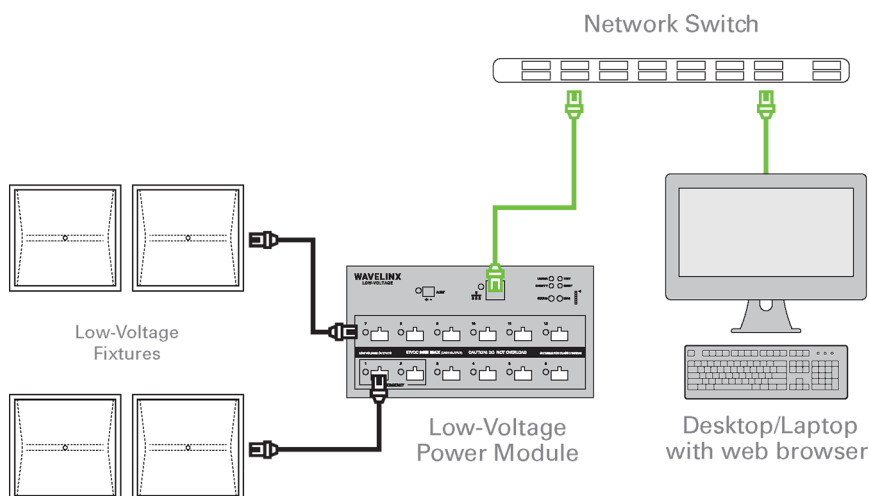
Use a current web browser when accessing the Low-Voltage Power Module's internal webpages. The internal webpages of the Low-Voltage Power Module allow for basic configuration functions including:

- Logging in to the Low-Voltage Power Module webpages
- Reviewing and changing general settings
- Updating Ethernet settings
- User setting administration
- Firmware updates

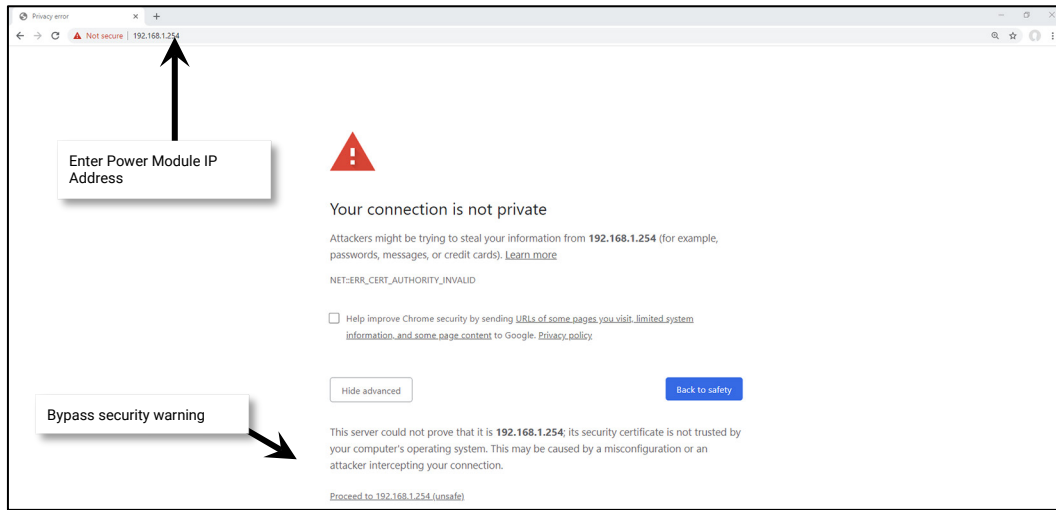
Logging in to the Low-Voltage Power Module Webpages

The steps in this section assume that the Low-Voltage Power Module is still in its factory default state and has not been connected to a DHCP server for IP address assignment. If not in its factory default state, please refer to the network administrator for access information. The Low-Voltage Power Module username and password are stored in the Low-Voltage Power Module and are separate from those used for the WaveLinx Area Controller.

- 1: The default IP address of a Low-Voltage Power Module that has not been configured is 192.168.1.254 on the 255.255.255.0 subnet. Connect a laptop that is configured with an IP address on this same subnet directly to the Low-Voltage Power Module or to the same router or switch the Low-Voltage Power Module is connected to.

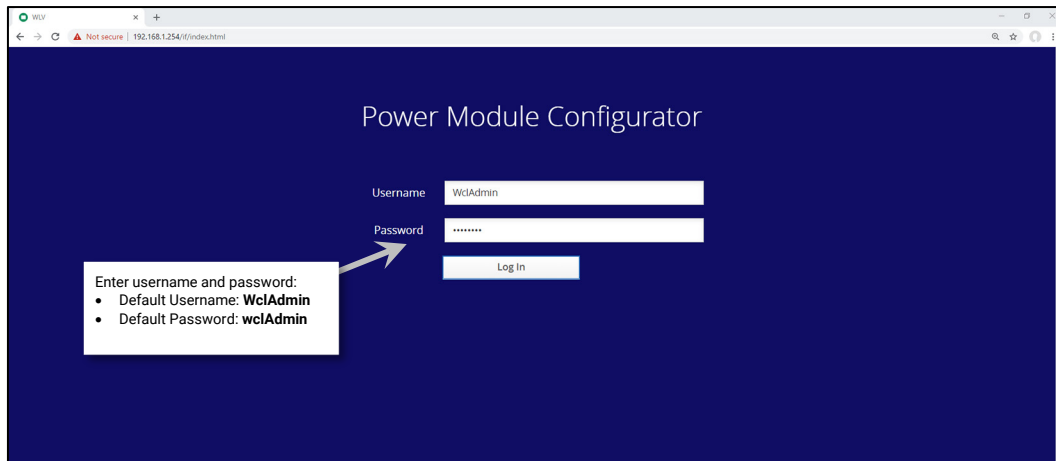


2: Open a current web browser. In the address bar, enter the IP address of the Low-Voltage Power Module (default 192.168.1.254). The browser may display a warning regarding site security. The display and wording of this message may differ. Locate the option to bypass the warning and proceed to the site.

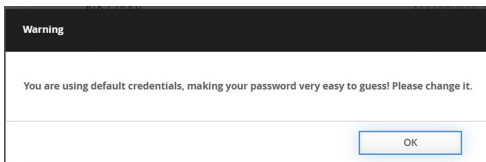


3: In the log in screen, enter the username and assigned password for the Power Module administrator user, and select **Log In**.

- Default Username: **WclAdmin**
- Default Password: **wclAdmin**



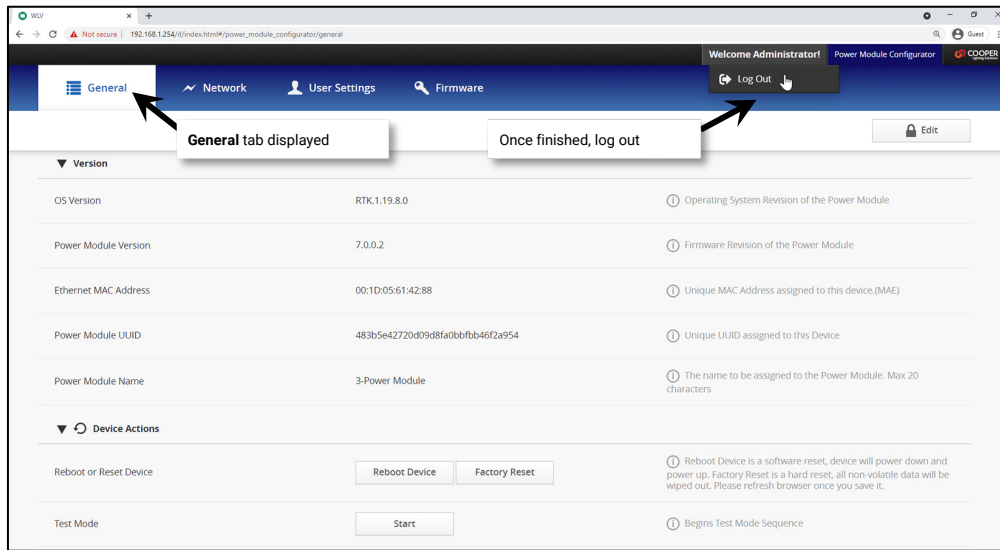
If the password is at the default wclAdmin, a message will display stating that the password should be changed.



For security purposes, change the default password. Users should set a complex password when changing passwords. See "User Settings Administration" on page 332 for this procedure.

4: The Low-Voltage Power Module webpage will open to the **General** tab.

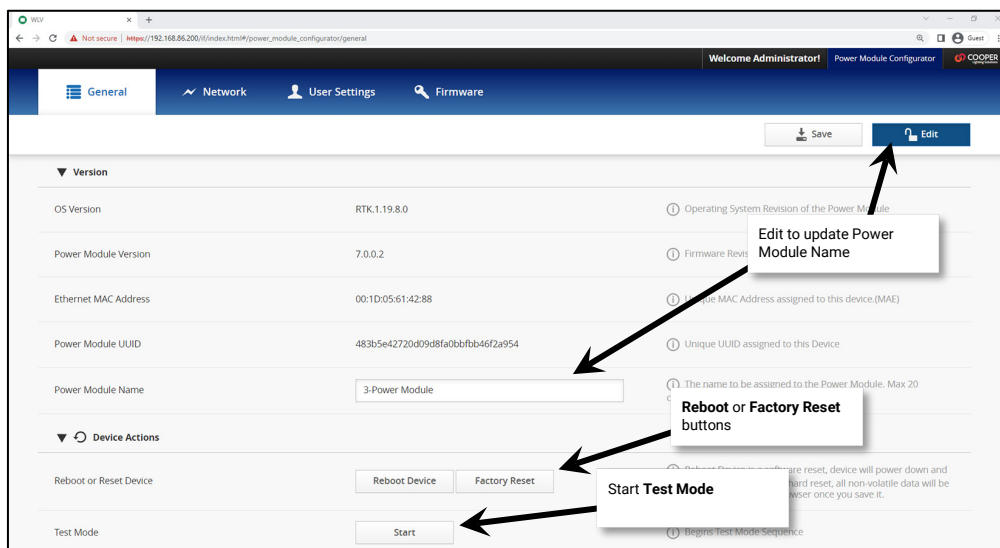
To log out of the page once the settings are reviewed, click on **Welcome Administrator**, and select **Log Out**.



Reviewing and Changing General Settings

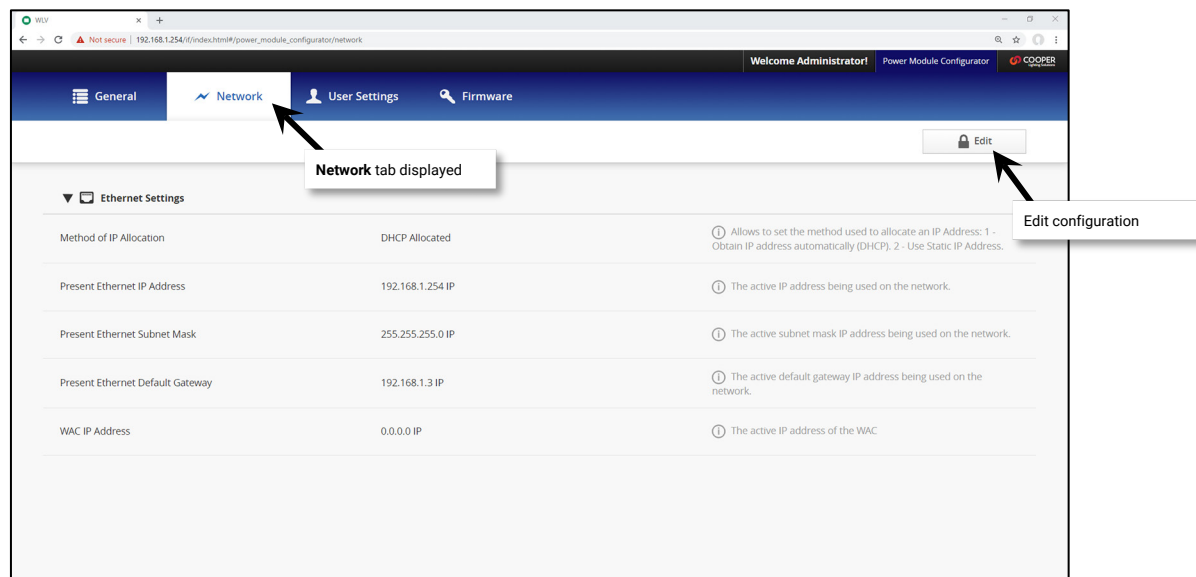
The **General** tab lists information about the Low-Voltage Power Module including the operating system, firmware version, and the **Power Module Name**.

- Select **Edit** to update the Low-Voltage Power Module to a new unique name to make it easier to identify on larger projects.
- Use the buttons for rebooting or factory resetting the Low-Voltage Power Module if necessary.
 - **Reboot Device:** This will cause the device to power down and then power up, forcing a software reset. Data will not be lost.
 - **Factory Reset:** Use with extreme caution. This will cause all settings to be removed, resetting the unit to factory defaults. Pairing information will be lost if the unit has been previously paired with a WaveLinX Area Controller.
- Select **Test Mode:** All lights connected to the Low-Voltage Power Module will cycle between OFF and ON for 15 seconds.



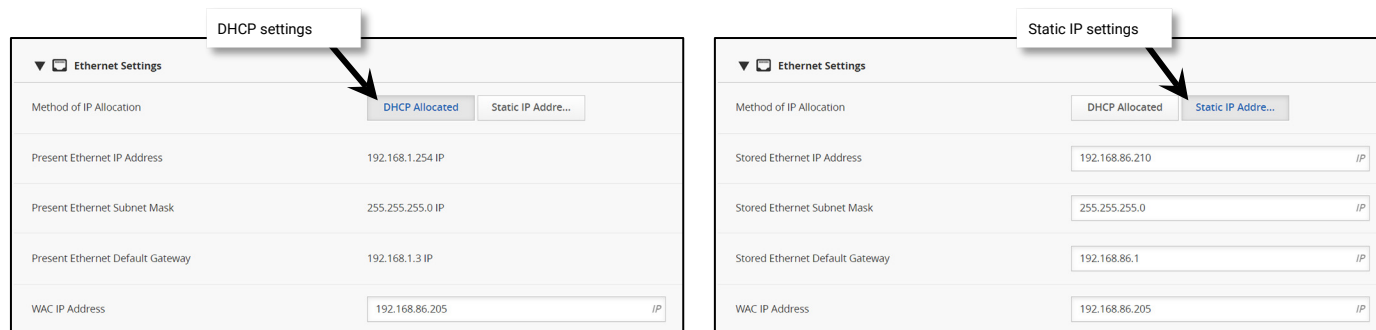
Updating Ethernet Settings

Select the **Network** tab to display the current Ethernet settings. Select **Edit** to modify the settings.



If editing, choose between DHCP and Static IP options. If using a Static IP, type in the desired IP Address, the appropriate subnet mask, and the default Gateway IP.

For best results, enter the WaveLinx Area Controller's IP address that should pair with this Low-Voltage Power Module. This ensures that during pairing, the Low-Voltage Power Module connects to the correct WaveLinx Area Controller. If the **WAC IP** is not entered, once the Low-Voltage Power Module is paired with a WaveLinx Area Controller, the WaveLinx Area Controller's IP will automatically populate in this field.

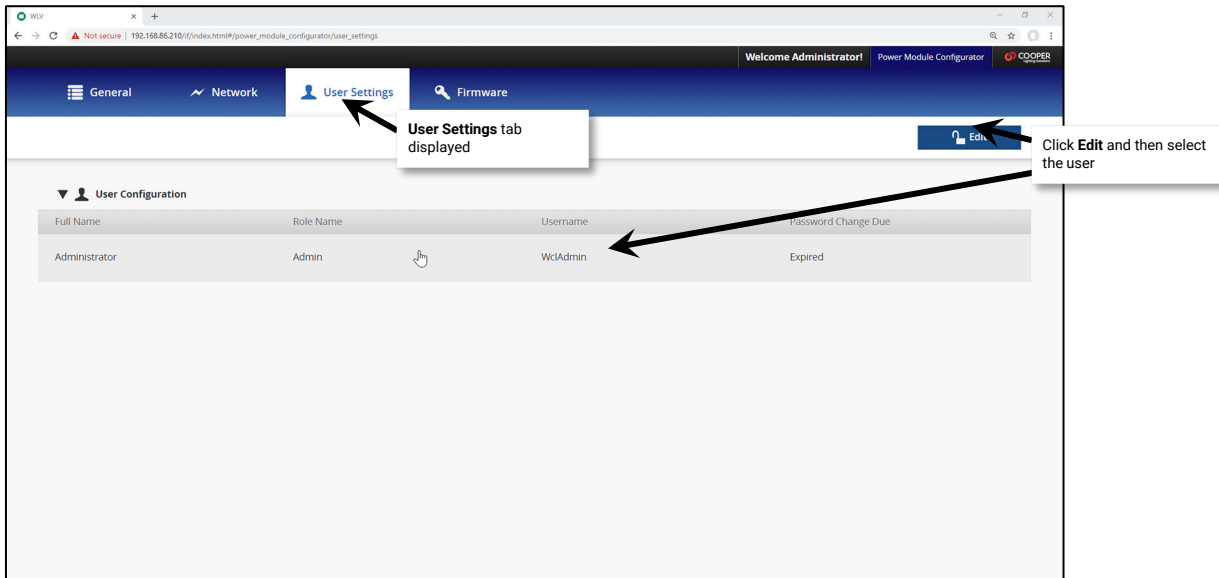


If changes were made, click on **SAVE** and then close the web browser. The Low-Voltage Power Module will automatically reboot once Ethernet setting changes are saved. If the web browser has been left open, it will be disconnected. A Low-Voltage Power Module reboot takes approximately 1 ½ minutes to complete.

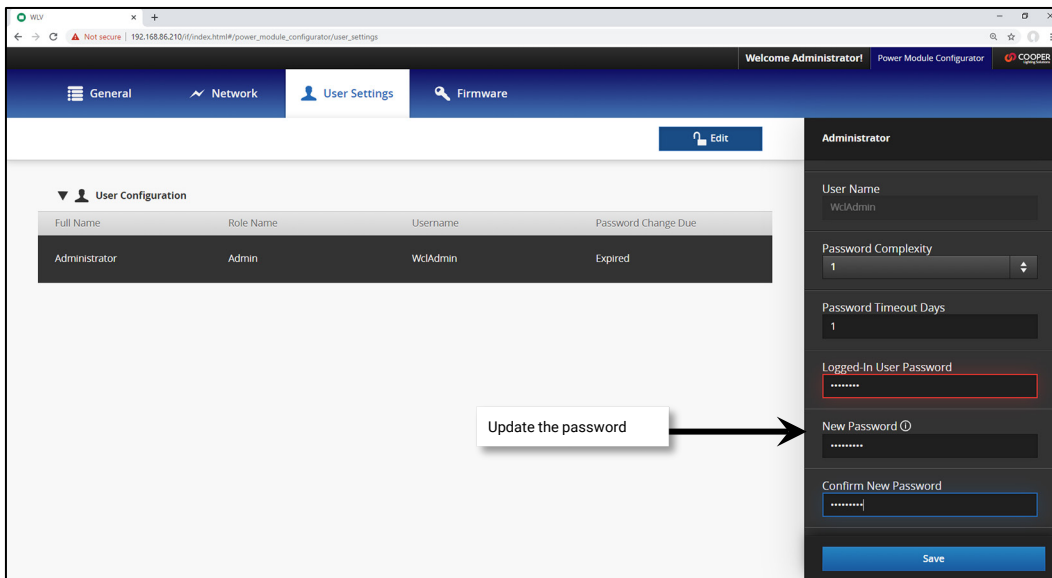
User Settings Administration

For security purposes, change the default password. Users should set a complex password when changing passwords.

Use the **User Settings** tab to change the password for the administrator login. Select Edit, then select the line for the Administrator User.

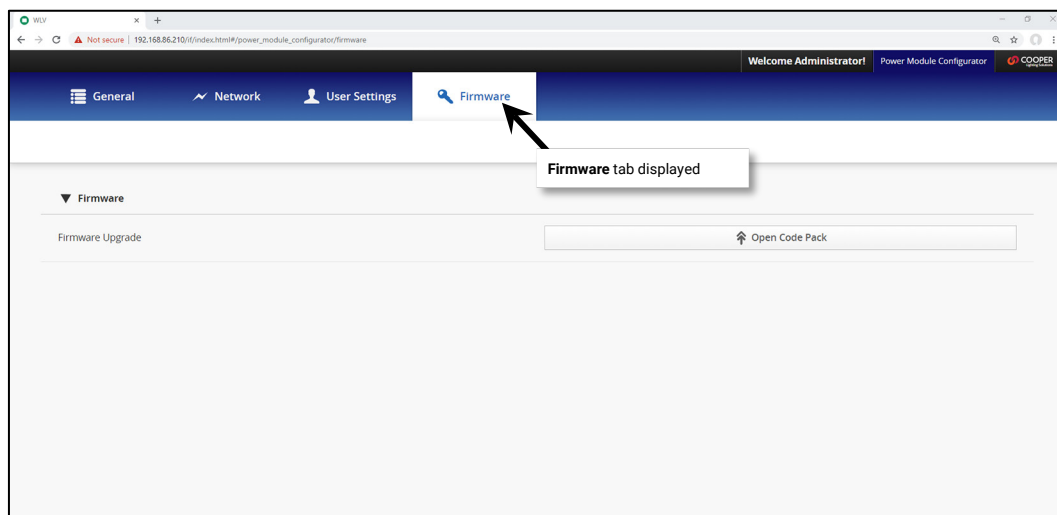


Use the **Administrator** user window to change the password. The remaining fields should be left at defaults. Click **SAVE** when changes are complete.




Firmware Administration

Although it is possible to update the firmware of the Low-Voltage Power Module and connected Low-Voltage devices through the firmware tab, it is recommended to perform this procedure using the WaveLinx Area Controller Webpages. Please see “Updating the Firmware of WaveLinx Devices” on page 308 for upgrade information.³⁶⁶

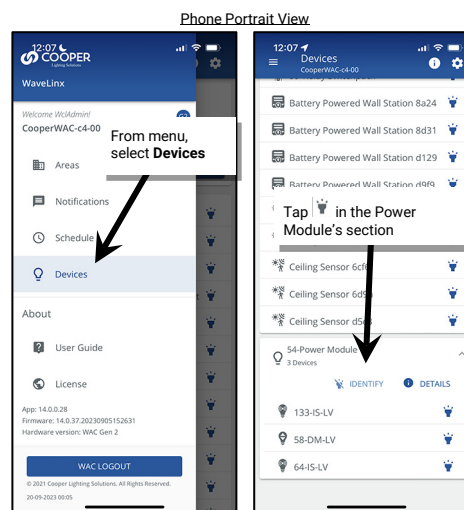
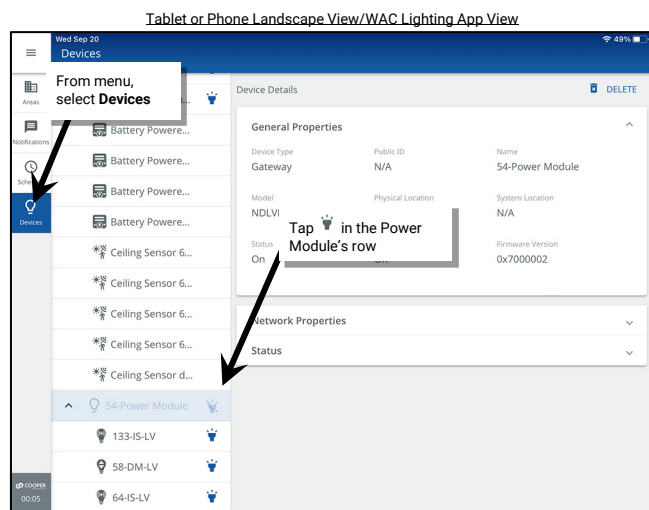


Identifying Power Modules and Connected Fixtures

Use **Blink to Identify** from the WaveLinx App to locate all Low-Voltage Fixtures connected to the Low-Voltage Power Module.

- 1: Open the WaveLinx Mobile App or WaveLinx WAC Lighting App³⁶⁷ and establish a connection with the WaveLinx Area Controller as the administrator user.
- 2: Open the **Devices** view from the menu, and then locate the Low-Voltage Power Module in the device list.
- 3: Tap  in the Low-Voltage Power Module's row to place the device in **Blink to Identify** mode. When placed in **Blink to Identify** mode:
 - All Low-Voltage Fixtures connected to this Low-Voltage Power Module will cycle ON for 1 second, turn OFF for 1 second repeatedly.
 - The Status LED on the Low-Voltage Power Module will flash blue.

After 15 seconds, **Blink to Identify** will automatically time out and return to normal operation.



Note: Use the **Identify** button on the Low-Voltage Power Module to **reverse identify** the device in the **Devices** tab. When the **Identify** button is pressed, the icon in the Mobile App **Devices** list will appear to pulse for 15 seconds.

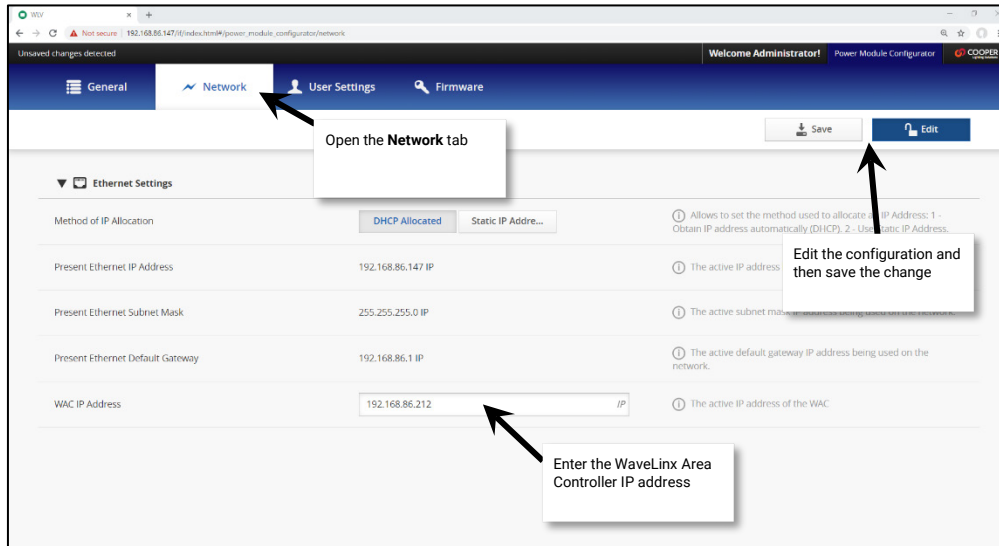
³⁶⁶ If using the Power Module webpage to perform the upgrades, the webpage must stay active and open during the entire update.

³⁶⁷ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

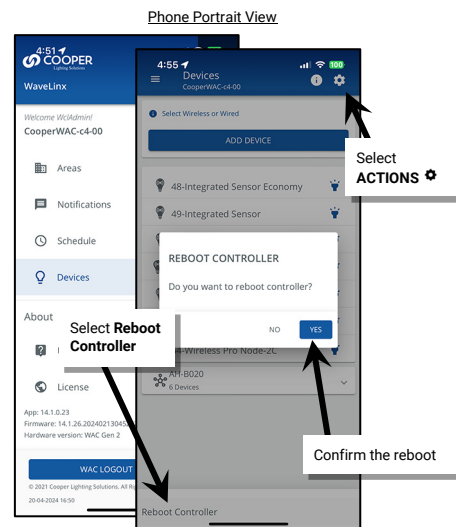
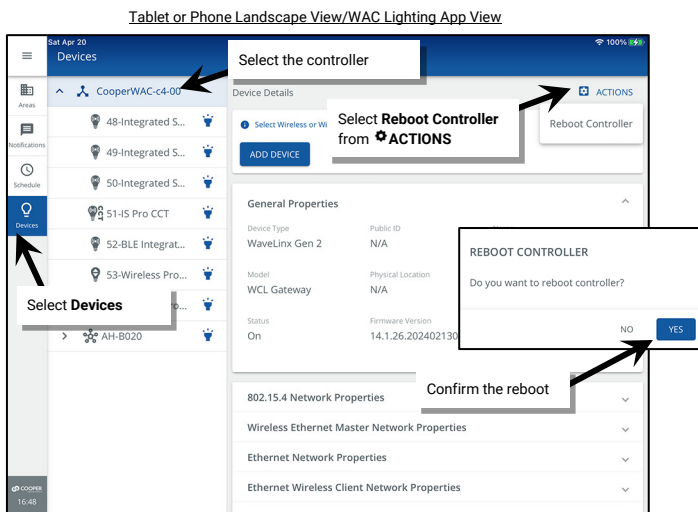
Reconnecting after IP Address Changes

The WaveLinX Area Controller and Low-Voltage Power Module rely on their connection through the Ethernet to communicate information back and forth to the connected WaveLinX LV devices. During the initial pairing process, the IP addresses are stored for connection purposes. If the IP address of either device changes, the connection between them will be lost. To reestablish the connection, follow the steps below.

- 1: (Skip to step 2 if the WaveLinX Area Controller IP address has not changed.) Open the Low-Voltage Power Module internal webpage and update the WaveLinX Area Controller IP Address in the **Network** page. Once saved, wait two minutes so that the Low-Voltage Power Module has a chance to fully reboot.



- 2: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³⁶⁸. Select the **Devices** option from the menu. Select the WaveLinX Area Controller and then tap the **ACTIONS** option. Tap **Reboot Controller** and then confirm. A reboot takes approximately 2 to 4 minutes to complete. During this time, the WaveLinX Area Controller and the Low-Voltage Power Module should reestablish their connection.



It may take several additional minutes before the connected WaveLinX LV devices show online status and begin operation with programmed settings.

³⁶⁸ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Replacing a WaveLinx Low-Voltage Power Module

If the Low-Voltage Power Module needs to be replaced after its connected devices are paired to the WaveLinx App, follow the procedure below.

- 1: Power down the existing Low-Voltage Power Module and disconnect it. **DO NOT** delete the device from the WaveLinx App.
- 2: Install the new Low-Voltage Power Module. Making sure that power to the new Low-Voltage Power Module is still OFF, reconnect all the Low-Voltage Fixture connections.
- 3: Reapply power and then press and release the Low-Voltage Power Module's **Test** button. Verify that all the lighting connected to the Low-Voltage Power Module is responding by cycling between 100% light output and OFF during the 15 second test period. Verify that the status LED is blinking orange, indicating that the Low-Voltage Power Module has not been paired.



- 4: If not using a DHCP server, use the procedure on page 331 to connect to the Low-Voltage Power Module's internal webpage and define the static IP address. Once configuration is complete, be sure to connect the Low-Voltage Power Module to the Building LAN.
- 5: Press and release (1 second press) the PAIR button located on the side or rear panel of the WaveLinx Area Controller to start pairing mode. Wait for the new Low-Voltage Power Module to pair with the WaveLinx Area Controller and display a steady green status LED. Manually cancel pairing mode by pressing and releasing the PAIR button on the WaveLinx Area Controller. The blue 802.15.4 LED should turn solid ON.




- 6: Wait at least five minutes after pairing and then, open the WaveLinx Mobile App or WaveLinx WAC Lighting App³⁶⁹. Select the **Devices** option from the menu. Both the old and the new power module should be listed in the devices list.
- 7: Click on the **Blink to Identify** option for the newly paired Low-Voltage Power Module. Visually verify that all the Low-Voltage Fixtures connected to this Low-Voltage Power Module are cycling ON and OFF for the 15 second test period.
- 8: Wait an additional five minutes to give the WaveLinx Area Controller time to process the changeover and then verify that the Low-Voltage Fixtures show online. Next, verify that the Low-Voltage Fixtures operate from the controls in the space.
- 9: Once operation is fully verified, in the WaveLinx App, select the original Low-Voltage Power Module and then tap **delete** . Confirm the deletion to remove the device from the application.

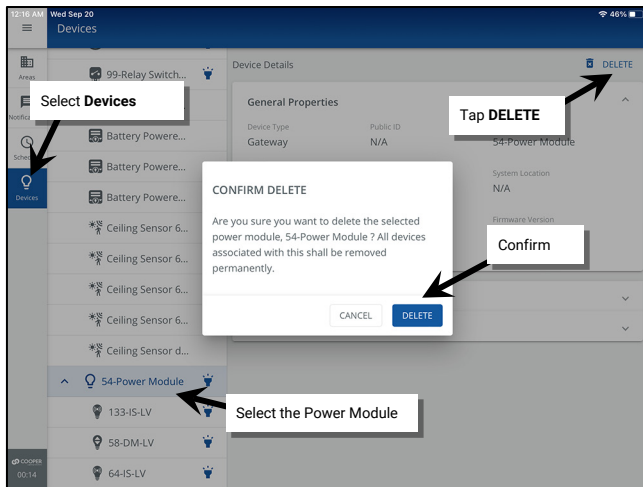
³⁶⁹ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Unpairing a Low-Voltage Power Module from the WaveLinX Area Controller

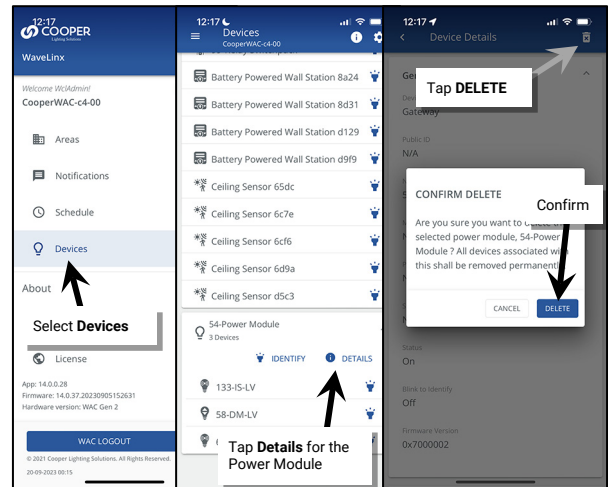
If a Low-Voltage Power Module has paired to the incorrect WaveLinX Area Controller, the Low-Voltage Power Module can be removed using one of two methods.

- **To remove the Low-Voltage Power Module Using the WaveLinX Mobile App or the WaveLinX WAC Lighting App³⁷⁰:** Open the WaveLinX App. In the **Devices** view, tap the Low-Voltage Power Module and verify that the status field in **General Properties** reads **Good**. In the **Devices** list, locate the Low-Voltage Power Module and then tap **DELETE** . When prompted, confirm the deletion. Allow several minutes for the WaveLinX Area Controller to process the change for all the connected low-voltage devices.

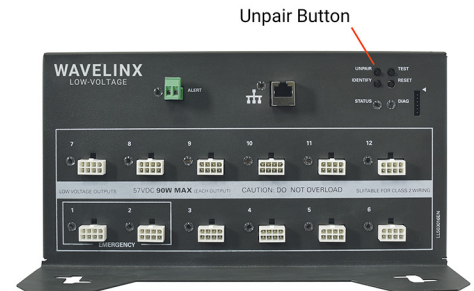
Tablet or Phone Landscape View/WAC Lighting App View



Phone Portrait View



- **To remove the Low-Voltage Power Module using the onboard pushbuttons:** Press and hold the **Unpair** button for longer than 10 seconds to unpair it from the WaveLinX Area Controller.



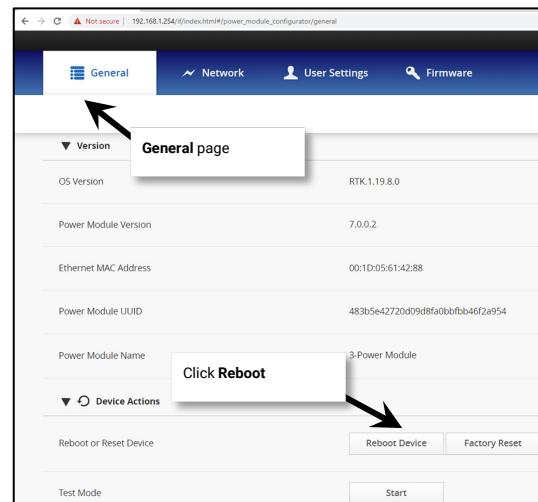
Any connected Low-Voltage Fixtures will return to out-of-the-box behavior once the Low-Voltage Power Module is unpaired.

³⁷⁰ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

Rebooting the Low-Voltage Power Module

Reboot the Low-Voltage Power Module from the onboard pushbuttons or from the Low-Voltage Power Module's internal webpages. A reboot is a soft reset which restarts the software in the Low-Voltage Power Module without affecting configured settings. Once started, the reboot will take approximately 1 ½ minutes to complete.

- To perform the reboot using the onboard pushbuttons, momentarily press the reset button (push and release).
- To perform the reboot from the Low-Voltage Power Module's internal webpages, log in and then select **Reboot** from the **General** page.



WaveLinX Device Administration

This section describes how to perform Device Maintenance tasks including how to:

- Replace and sync WaveLinX PRO devices
- Replace Low-Voltage Fixtures and Low-Voltage Fixtures with Integrated Sensors
- Perform a factory reset

Adding a New Device to the WaveLinX Area Controller

If a new device is added after the initial pairing/discovery and addition of devices to the WaveLinX Area Controller, the new device can be added. The method of how the device is added depends on the type of device it is.

Adding a WaveLinX PRO Device

To add a WaveLinX PRO device to the WaveLinX Area Controller:

- 1: Place the WaveLinX Area Controller into pairing mode. By either pressing (1 second press) the PAIR button or through the WaveLinX Mobile App (see page 122 for instructions). The blue 802.15.4 LED on the WaveLinX Area Controller will blink to indicate pairing mode is active.
- 2: Place the WaveLinX PRO device into pairing mode. Refer to the device reference sheets beginning on page 14 for details on how to place the device into pairing mode.
- 3: Wait a few minutes as the device pairs with the WaveLinX Area Controller and then cancel pairing mode.

Once paired, the devices should exhibit the successful paired device behavior described in the device reference sheets and be shown in the Construction Area and in the Unassigned Devices. Proceed with adding the device to a zone or area.

Adding a WaveLinX LV Device

To add a WaveLinX LV device to the WaveLinX Area Controller:

- 1: Power down the Low-Voltage Power Module. Hot swapping is not supported.
- 2: Install the new Low-Voltage Fixture or Low-Voltage Fixture with Integrated Sensor and then reapply power.
- 3: Wait at least two minutes for the Low-Voltage Power Module to fully boot and connect to the WaveLinX Area Controller. During this time, the Low-Voltage Power Module will communicate the new device's presence to its paired WaveLinX Area Controller and the device will join the construction area. The device may display a message briefly on the WaveLinX App as it joins the WAC.

Note: If the device does not pair automatically after the Low-Voltage Power Module is fully powered, place the WaveLinX Area Controller in pairing mode. The device should then pair to the construction area.

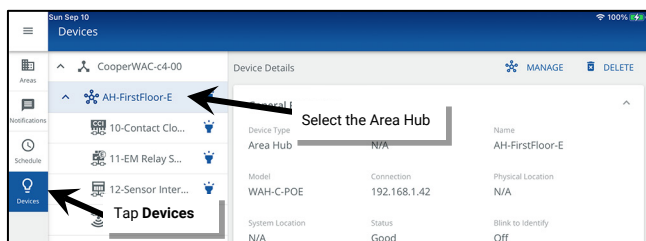
Once paired, the devices should exhibit the successful paired device behavior described in the device reference sheets and be shown in the Construction Area and in the Unassigned Devices. Proceed with adding the device to a zone or area.

Adding a WaveLinX CAT Device

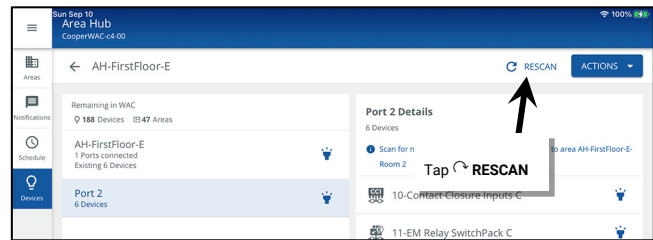
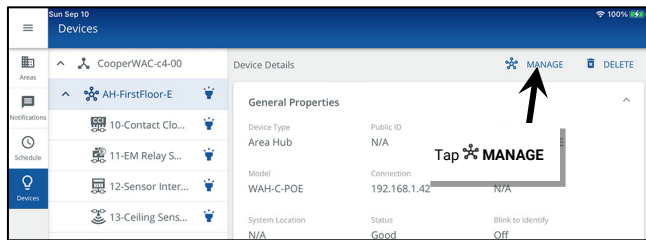
If a new WaveLinX CAT device is added to the system or a new room of devices is connected to an unused Area Hub port, follow the steps below to bring the device into the WaveLinX mobile app:


- 1: Power down the Area Hub and connect the new device or port of devices. Reapply power and wait for the Area Hub to boot and reconnect with the WaveLinX Area Controller.
- 2: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
3. From the menu ☰, select **Devices**. From the **Devices** list, tap the **Area Hub**.

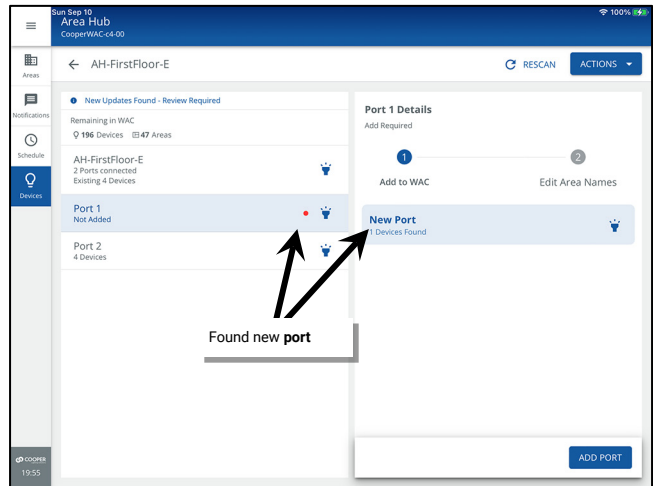
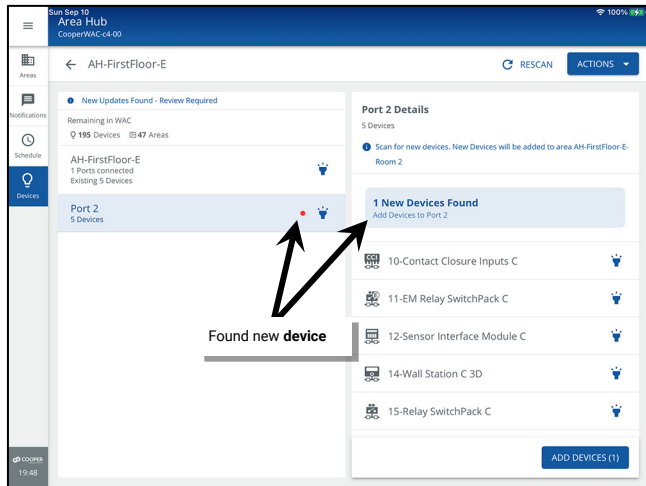
For phone devices being used in portrait view, tap ⓘ **Details**.



5: In **Device Details**, tap  **MANAGE** and then tap  **RESCAN**.

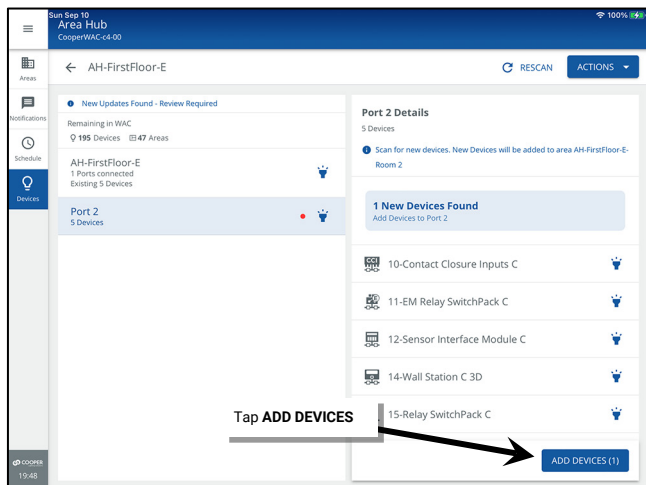



6: Wait for the scan to complete (may take several minutes.) Locate the row with the new item indicator  and then tap it to open the details.

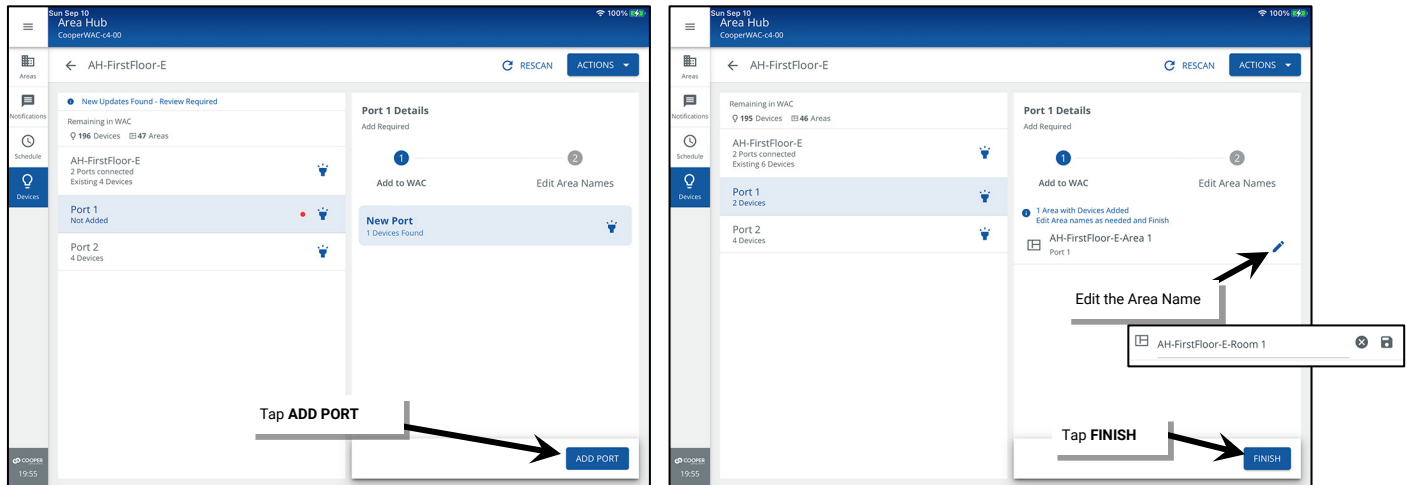


7: Add either the new device or the new port and devices:

- To add a device, tap **ADD DEVICES**. The device will be added to the WAC.




- To add a new port, tap **ADD PORT**. Optionally tap **edit**  to change and save the default area name and then tap **FINISH**. The devices will be added to the WAC.




Once added, the new device(s) will show in the area created for the Area Hub port it is connected to.

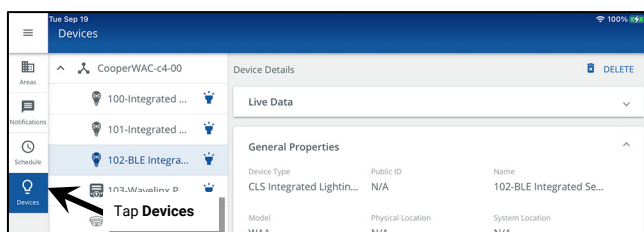
Deleting a Device from a WaveLinX Area Controller


Devices can be deleted from the WaveLinX Area Controller if they are not being used in that WaveLinX Area Controller.

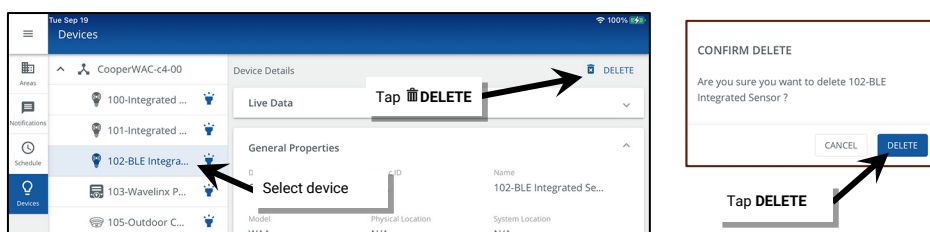
- With WaveLinX PRO devices, the device will be returned to factory defaults, ready to be paired with another WaveLinX Area Controller.
- With WaveLinX LV devices, the device will be deleted. However, if the device is still physically attached to the same WaveLinX Low-Voltage Power Module, the device may pair as a new device the next time the WaveLinX Area Controller is placed in pairing mode.
- With WaveLinX CAT devices, the device will be deleted. If the device is still physically attached to the same WaveLinX Area Hub, it can be read through the WaveLinX Area Hub  **RESCAN** command.

To delete a device:

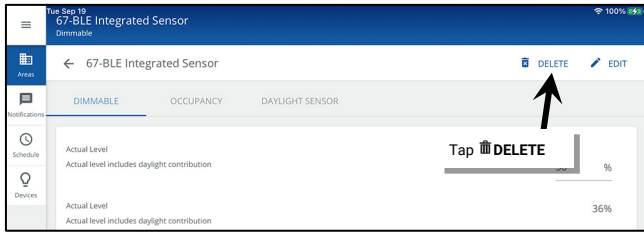
- 1: Open the WaveLinX App and login to the WaveLinX Area Controller as the administrator.
- 2: From the menu , select **Devices**.



- 3: Locate and select the device in the **Devices** list and then tap  **DELETE**. When prompted, tap **DELETE** to confirm.



Note: Devices can also be deleted within the Areas view by accessing the device and tapping the DELETE option at the top of the page.



Adding a Deleted Device

If a WaveLinX device has been deleted in error, it is easy to re-add the device. The device will need to be reconfigured once added back to the WAC.

Pairing a Deleted WaveLinX PRO Device

If a WaveLinX PRO device is deleted in error, pair the device as if it is a new device.

- 1: Place the WaveLinX Area Controller into pairing mode.
- 2: Place the WaveLinX PRO device into pairing mode.
- 3: Wait a few minutes as the device pairs with the WaveLinX Area Controller and is added to the Construction Area and then cancel pairing mode.

Pairing a Deleted Low-Voltage Device

If a Low-Voltage Fixture or Low-Voltage Fixture with Integrated Sensor has been removed from the WaveLinX Area Controller, either by deleting it manually from the WaveLinX App, or by removing unpaired devices using the WaveLinX Area Controller advanced PAIR button functionality, the device will not automatically rejoin the Construction Area even though it is communicating to a paired Low-Voltage Power Module.

To pair a low-voltage device that was removed in error:

- 1: Place the WaveLinX Area Controller into pairing mode.
- 2: Wait for the Low-Voltage Device to pair with the WaveLinX Area Controller and be added to the Construction Area before cancelling pairing mode.

Adding a Deleted WaveLinX CAT Device

If a WaveLinX CAT device has been removed from the WaveLinX Area Controller by deleting it the device will not automatically rejoin the WAC even though it is communicating to a discovered WaveLinX Area Hub. It will be necessary to run the **Rescan** command just like adding a new CAT device. Refer to "Adding a WaveLinX CAT Device" on page 338 for these details.

Moving a WaveLinX LV Device to a Different Low-Voltage Output

Remember to always power down the Low-Voltage Power Module before disconnecting or connecting devices.

To avoid overloading or to make wire routing easier, it may be necessary to move a Low-Voltage Fixture connection to a different Low-Voltage Output after it has been through the pairing process.

- If the output is on the same Low-Voltage Power Module that the device was connected to originally, no further steps are necessary. After the reboot process, the device will automatically reconnect and begin to operate with the originally programmed settings.
- If the output is on a different Low-Voltage Power Module, and the Low-Voltage Power Module is paired to the same WaveLinX Area Controller as the original Low-Voltage Power Module, no further steps are necessary. After the reboot process, the device will automatically reconnect and begin to operate with the originally programmed settings.
- If the output is on a different Low-Voltage Power Module and the Low-Voltage Power Module is paired to a different WaveLinX Area Controller, the device will be treated as a new device. Once the Low-Voltage Power Module reboots and communicates the new device's presence to the WaveLinX Area Controller, the device will need to be programmed.

Replacing WaveLinX Devices

If a device is no longer operating properly and it is determined to be a device issue, replace the device. The WaveLinX App allows for device replacement without the need of reprogramming if the new device is the exact same type of device as the previous device.

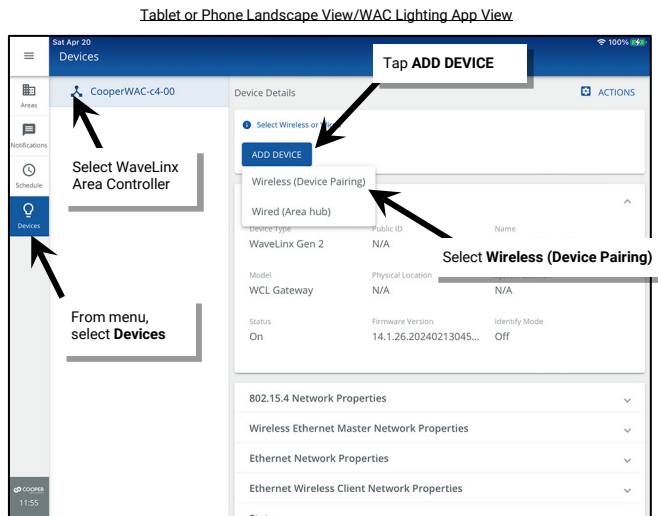
Replacing WaveLinX PRO Devices

This section discusses the procedures to replace a WaveLinX PRO device.

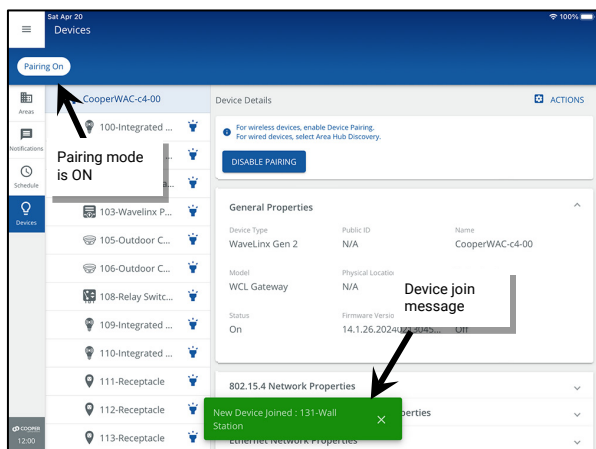
DO NOT delete the device from the WaveLinX App.

To perform the device replacement:

- 1: Install the replacement device per the device's installation instructions.
- 2: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³⁷¹ and establish a connection with the WaveLinX Area Controller as the administrator user.
- 3: Turn on pairing mode:
 - Tablet users/phone users in landscape view or WAC Lighting App users: From the menu, select **Devices**. Select the **WaveLinX Area Controller**, tap **ADD DEVICE** and select **Wireless (Device Pairing)**.
 - Phone users in portrait view: From the menu, select **Devices**, tap **ADD DEVICE** and select **Wireless (Device Pairing)**.

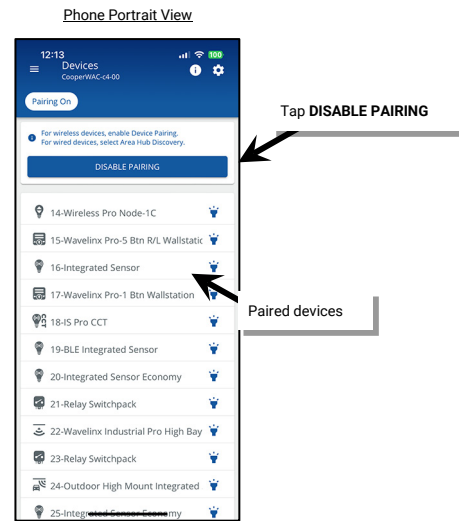
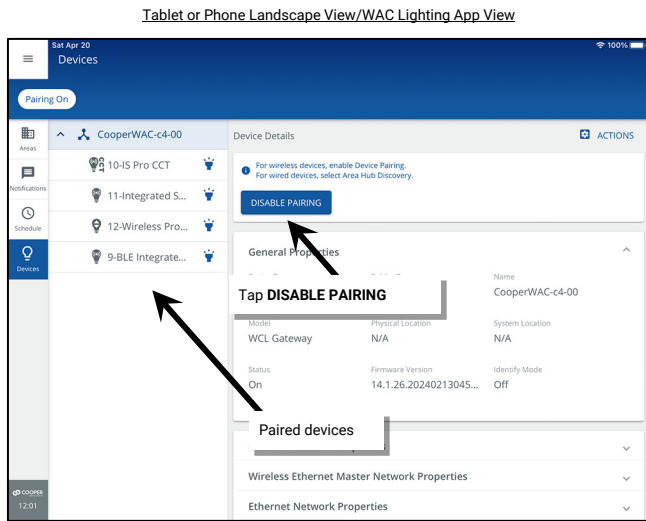


- 4: Place the replacement device in pairing mode. Refer to the device reference sheets beginning on page 14 for how to place the device into pairing mode.
- 5: Wait a few minutes to give the system enough time to find the device. The device may display a message briefly on the WaveLinX App when it joins the paired construction group. The device will also be shown in the construction group and in the Unassigned Devices.

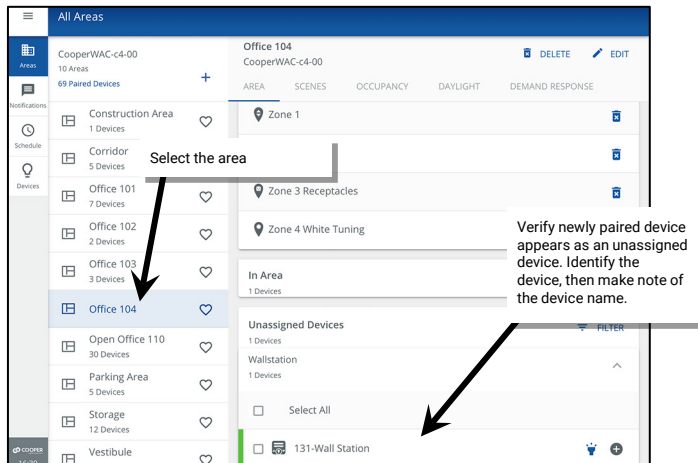


³⁷¹ The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

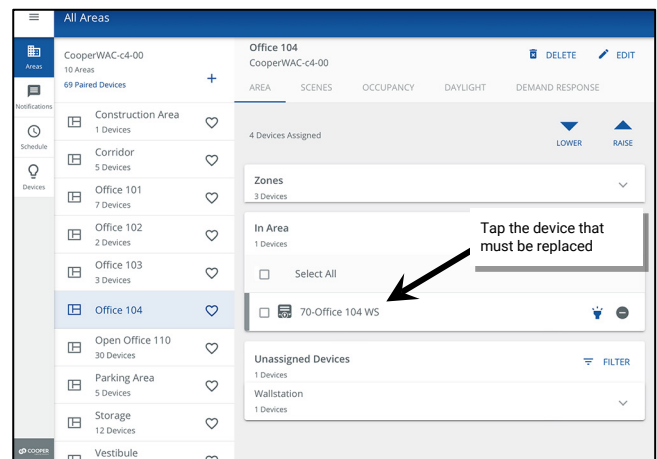
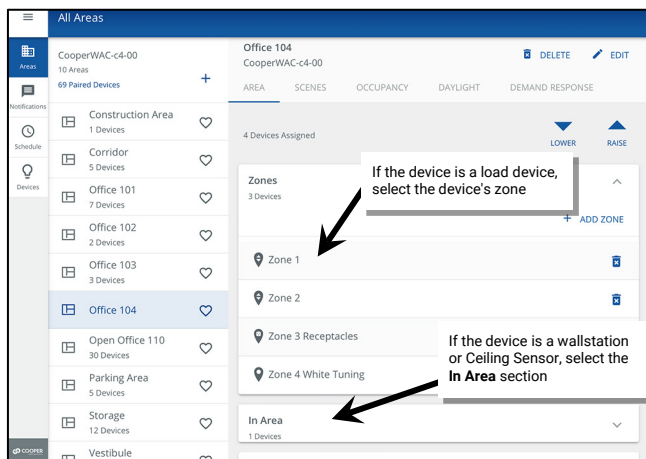
6: Once the device has joined, tap **DISABLE PAIRING**.




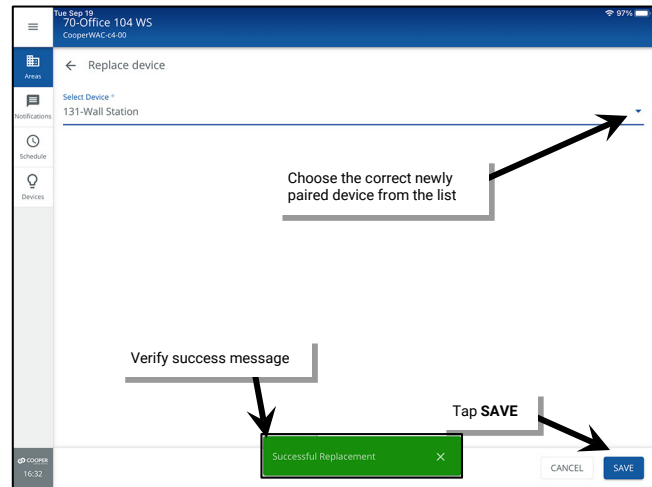
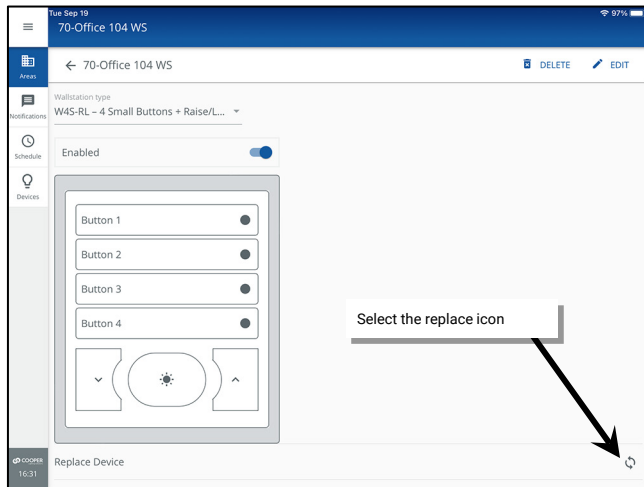
7: In the **All Areas** list, select the area that the replacement has been installed in. Verify that a new device shows in unassigned devices section. While still in the area screen for the desired space, place the device into identification mode using one of the methods described in the device's reference sheet and ensure that the expected device responds. Make note of the device's default name.



8: Locate the original device in the WaveLinx App. For load devices, open the appropriate control zone. For wallstations or WaveLinx Ceiling Sensors, locate the device in the **In Area** section. Note that the online indicator for the device may be gray or red indicating that the device has lost communication. Tap the device to open it.



- 9: In the device's page tap **replace** , and when prompted, select the newly installed device, and **SAVE** it. A success message should be displayed, and the new device will take over the functionality of the previous device.



It may take up to ten minutes for some devices to begin operation with the new settings. Some device types may display a message regarding this delay during the replacement process. Do not adjust programming for the devices within the suggested time.

Replacing WaveLinx LV Devices

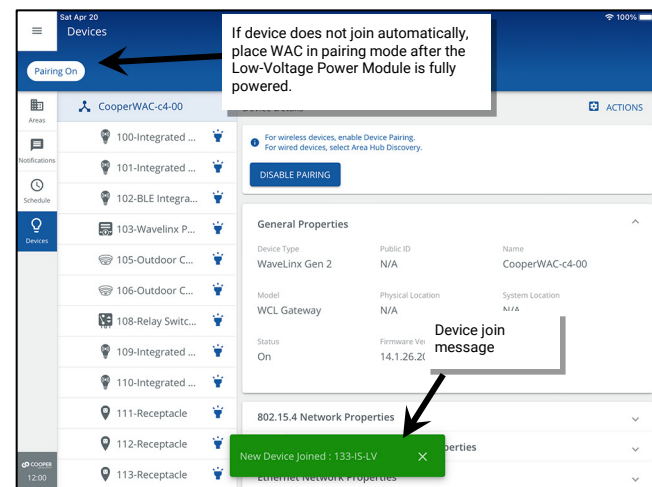
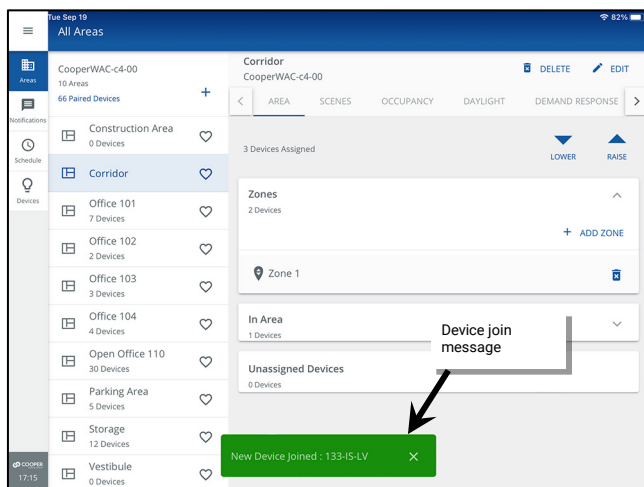
If it becomes necessary to replace a Low-Voltage Fixture or Low-Voltage Fixture with Integrated Sensor, the WaveLinx App can be used to sync the previous device's settings to the new device.

DO NOT delete the device from the WaveLinx App.

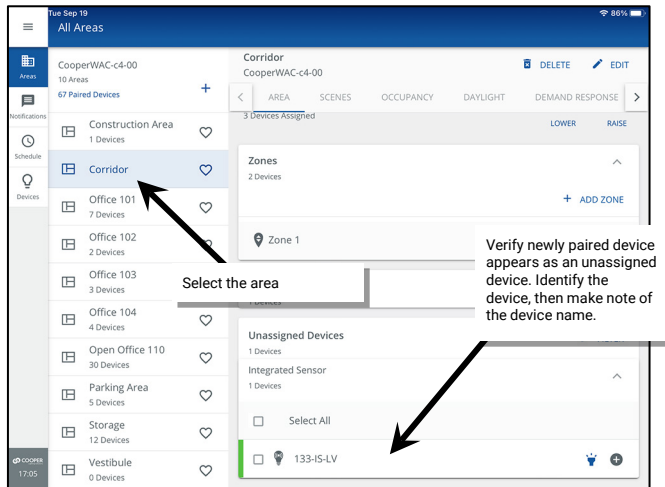
To perform the device sync:

- 1: Power down the WaveLinx Low-Voltage Power Module. Hot swapping is not supported.
- 2: Install the replacement WaveLinx LV device and then reapply power to the Low-Voltage Power Module.
- 3: Wait at least two minutes for the WaveLinx Low-Voltage Power Module to fully power up. During this time, the Low-Voltage Power Module will communicate the new device's presence to its paired WaveLinx Area Controller and the device will join the construction area. The device may display a message briefly on the WaveLinx App when it joins the paired construction group.

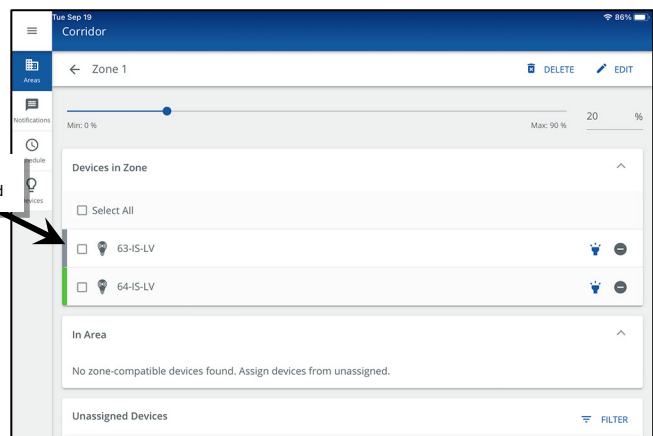
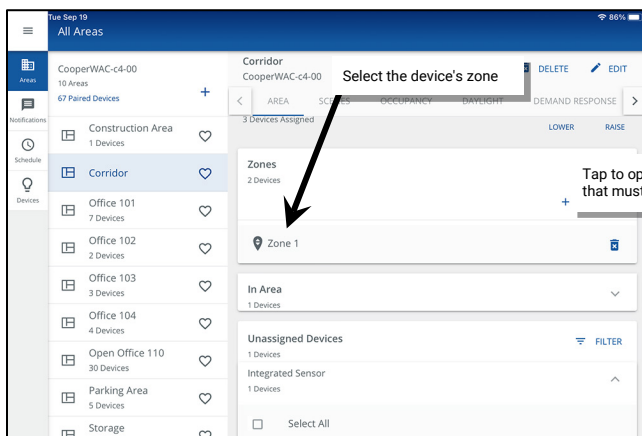
Note: If the device does not pair automatically after the Low-Voltage Power Module is fully powered, place the WaveLinx Area Controller in pairing mode. The device should then pair to the construction area.




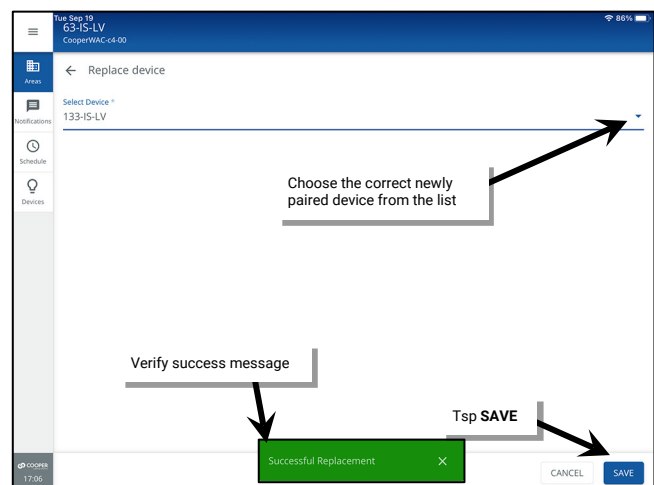
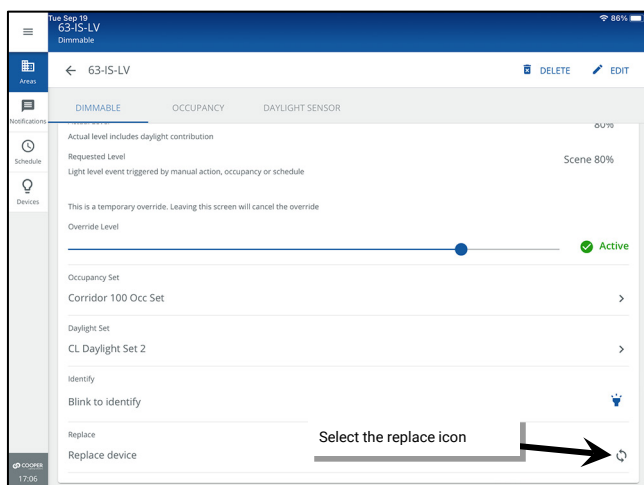
- 3: In the **All Areas** list, select the area that the replacement has been installed in. Verify that a new device shows in unassigned devices section. While still in the area screen for the desired space, place the device into identification mode using one of the methods described in the device's reference sheet and ensure that the expected device responds. Make note of the device's default name.



- 4: Locate the original device in the WaveLinx App. For Low-Voltage Fixtures or Low-Voltage Fixtures with Integrated Sensors, open the appropriate control zone. Note that the online indicator for the device may be gray or red indicating that the device has lost communication. Tap the device to open it.



- 5: In the device's page tap **replace** , and when prompted, select the newly installed device, and **SAVE** it. A success message should be displayed, and the new device will take over the functionality of the previous device (it may take up to five minutes for some devices to begin operation with the new settings).





Replacing WaveLinX CAT Devices

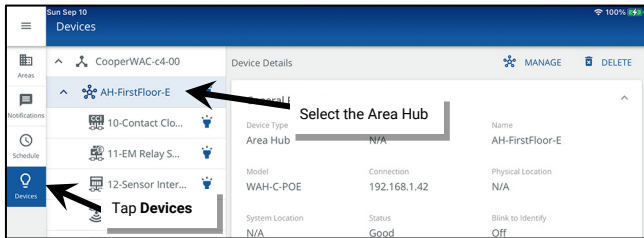
This section discusses the procedures to replace a WaveLinX CAT device.

DO NOT delete the device from the WaveLinX App.

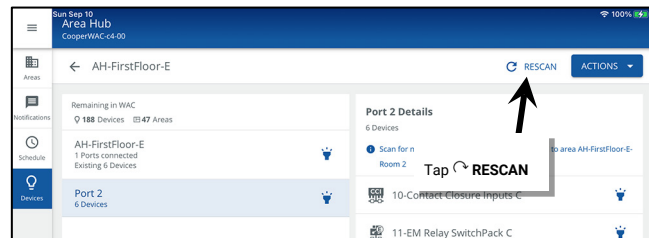
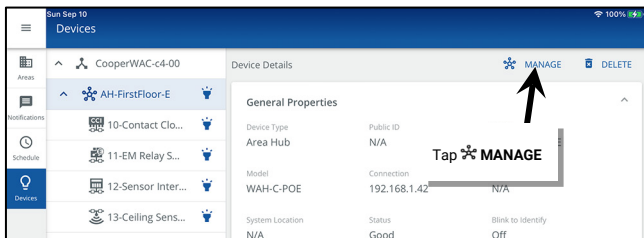
To perform the device replacement:


- 1: Install the replacement device per the device's installation instructions.
- 2: Open the WaveLinX Mobile App or WaveLinX WAC Lighting App³⁷² and establish a connection with the WaveLinX Area Controller as the administrator user.
- 3: From the menu , select **Devices**. From the **Devices** list, tap the **Area Hub**.

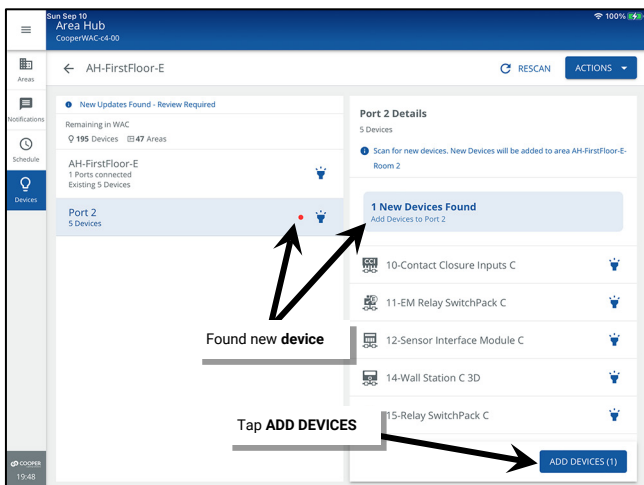
*For phone devices being used in portrait view, tap  **Details**.*




- 5: In **Device Details**, tap  **MANAGE** and then tap  **RESCAN**.

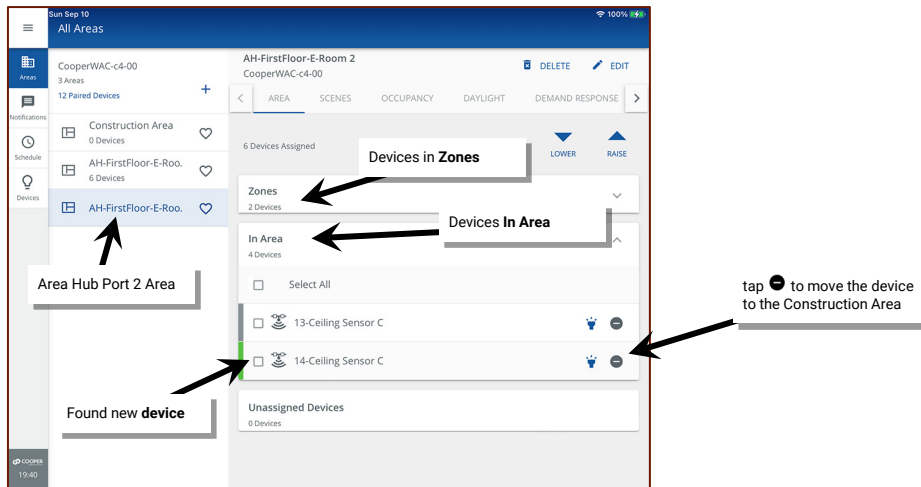


- 6: Wait for the scan to complete (may take several minutes.) Locate the row with the new item indicator  and then tap it to open the details. Tap **ADD DEVICES**. The device will be added to the WAC.

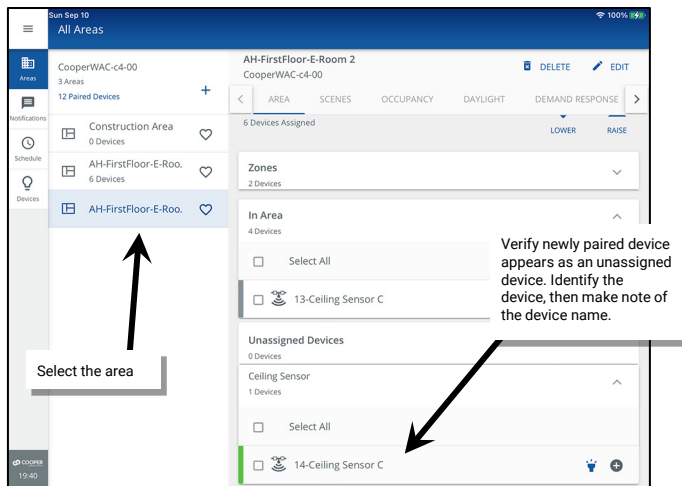


³⁷² The WaveLinX WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

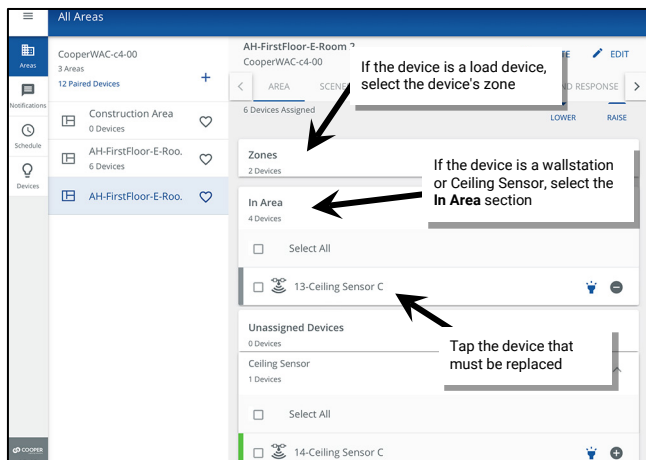
- 7: Locate the new device in the area created for the Area Hub port. WaveLinx CAT Switchpacks will show in the **Zone** while other devices will show in the **Devices in Area** section. Once found, tap  to remove the device from the area and move it to the **Construction Area**.




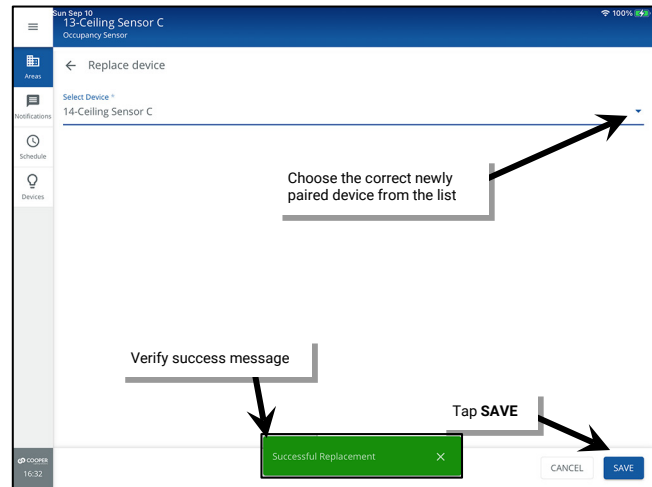
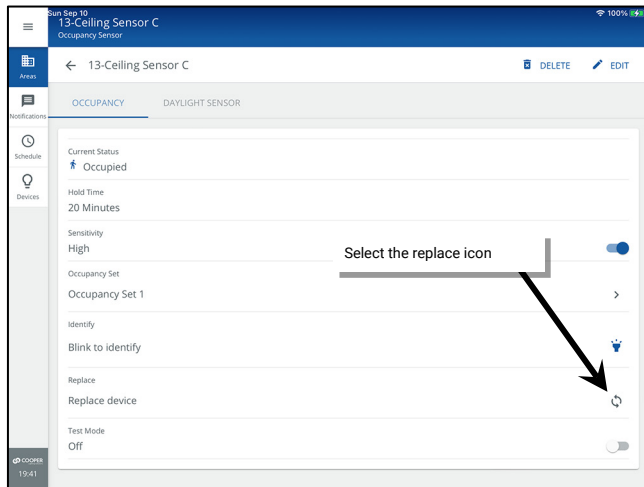
- 8: In the **All Areas** list, select the area that the replacement has been installed in. Verify that a new device shows in unassigned devices section. While still in the area screen for the desired space, place the device into identification mode using one of the methods described in the device's reference sheet and ensure that the expected device responds. Make note of the device's default name.



- 9: Locate the original device in the WaveLinx App. For load devices, open the appropriate control zone. For wallstations or WaveLinx Ceiling Sensors, locate the device in the **In Area** section. Note that the online indicator for the device may be gray or red indicating that the device has lost communication. Tap the device to open it.



10: In the device's page tap **replace** , and when prompted, select the newly installed device, and **SAVE** it. A success message should be displayed, and the new device will take over the functionality of the previous device.



Performing a Factory Reset

All WaveLinx devices have a method of restoring the device to factory defaults. This command should be used with caution as settings will be lost when the factory default command is used. Please refer to the device reference sheets starting on page 14 for details on how to perform a factory reset in each device type.

WaveLinx Mobile App Administration

This section describes how to perform Mobile App administration tasks including how to:

- View application version details
- Update the Mobile App
- Delete a WaveLinx Mobile App Cloud Account

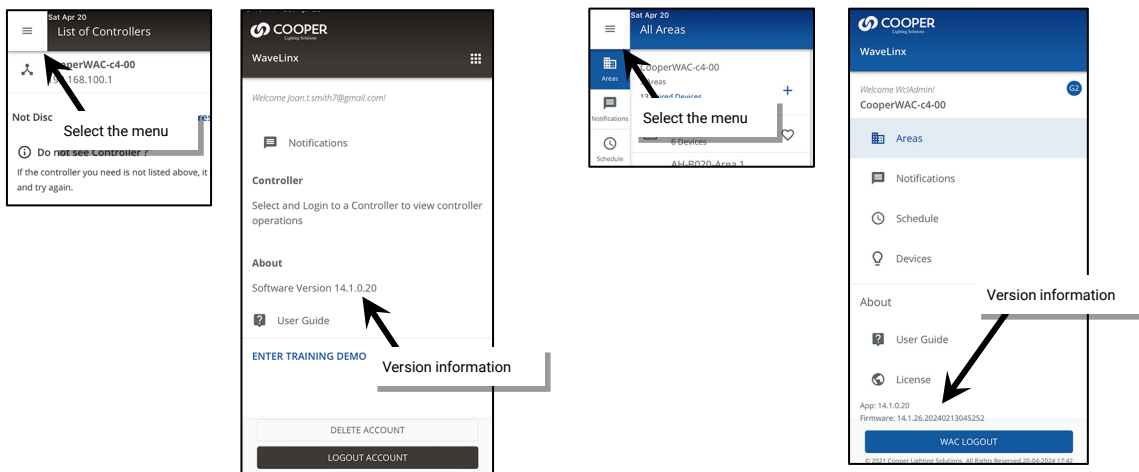
Viewing Mobile App Version

Use the WaveLinx Mobile App to view the current application version.

1: On the user's mobile device, open the WaveLinx Mobile App. The Mobile App does not need to be connected to the WaveLinx Area Controller to view the version information.

2: At the top-left corner of the screen, tap the menu icon and then select the information icon. The screen will display the application version.

Alternate option: Login to the WaveLinx Area Controller. The WaveLinx Area Controller firmware version will also be displayed.



Updating the Mobile App

From time to time, updates may be available for the WaveLinx Mobile App. Updates will be performed per the user's preference settings on each mobile device. If not updated automatically, updates may be installed manually from the updates section of the App Store or Google Play Store.

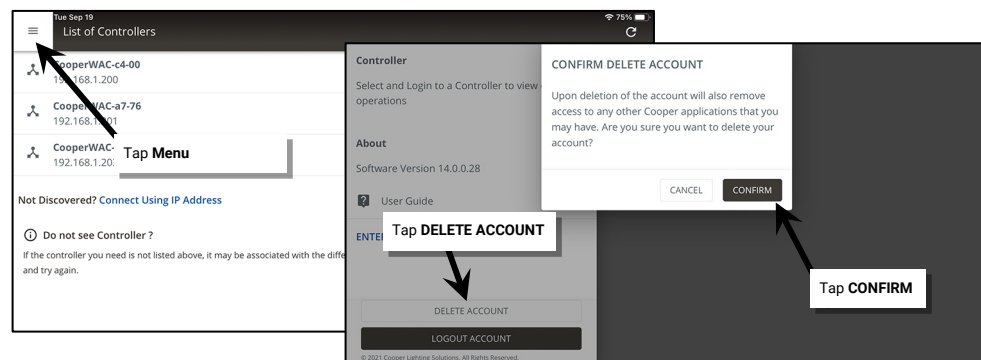
Deleting a WaveLinx Mobile App Cloud Account

The mobile app allows users to delete the cloud account created when the user first registered to login to the Mobile App. As the cloud account may be used for multiple Cooper Lighting Applications, deleting the cloud account will affect access to all Cooper Lighting Applications that use the same cloud account. Delete users with caution!

To delete a user's Cooper Lighting WaveLinx Mobile App user account:

- 1: Tap **Menu**.
- 2: Select **DELETE ACCOUNT**.
- 3: Tap **CONFIRM**.

The user account will be deleted, and the mobile app will return to the login page.




Common Questions

This section has some commonly encountered scenarios that may occur when following the procedures in this manual. Refer to this section for solutions to these scenarios.

One of my devices does not display the correct out-of-the-box functionality. What should I do?

Refer to the following chart organized by device type for troubleshooting steps. After performing the resolution steps, if the unexpected condition is not resolved, contact technical support using one of the following communications methods:

- Phone: 1-800-553-3879
- Email:
United States: Controltechsupport@cooperlighting.com
Canada: CANSupport@cooperlighting.com

Device	Unexpected Condition	Resolution Steps
<div>WaveLinx Area Controller 2 (Gen 2)</div> <div></div>	<ul style="list-style-type: none">• The blue power/health LED is not illuminated.• The green LAN LED is not illuminated.• The blue 802.15.4 LED is not illuminated.• Other LEDs are illuminated on the unit.	<ul style="list-style-type: none">• Ensure the unit is connected to a PoE switch or injector for power.• Try to perform the pairing function. If the pairing operation works and the unit appears operational, continue with configuration.• Other LEDs may be illuminated depending on the other connections to the WaveLinx Area Controller.<ul style="list-style-type: none">• Blue Wi-Fi LED will be ON unless the Wi-Fi access point or client has been disabled. The LED may also flash depending on the enabled options.• WAN LED will be ON if there is an active connection from a third-party device or WaveLinx CORE system.• LAN LED will be ON if the WaveLinx Area Controller has a defined IP address (DHCP/static) and is on the building network. It will blink when the WAC2 is in pairing mode.• PAN LED/Bluetooth LED should always be OFF.• If connected properly and the pairing functionality does not work, make note of the current LED statuses, and contact technical support.

Device	Unexpected Condition	Resolution Steps
WaveLinX PRO <ul style="list-style-type: none"> Ambient Integrated Sensor WaveLinX Tilemount Sensor WaveLinX Industrial Integrated Sensor WaveLinX Outdoor Integrated Sensor 	No LED in the sensor window and the connected fixture is OFF.	<ul style="list-style-type: none"> For industrial and outdoor sensors, verify that the sensor is fully seated on the fixture mounting. For outdoor sensors, during daytime hours, the sensor may have lighting turned OFF due to out-of-the-box ON at dusk, OFF at dawn operation. Verify operation after dusk. Verify that the fixture's power source is connected and powered from the circuit breaker. Ensure that there is motion activity within the sensor's viewing field. Try to perform the pairing function. If the pairing operation works, the LED may be turned OFF via a software setting. Once the device is paired and accessible in the WaveLinX App, select the device to review the occupancy sensor settings and ensure that the LED function is enabled. If the pairing function fails to find the fixture/sensor and the fixture/sensor is still not responding, contact technical support.
	Note In high mount applications, it may be difficult to see the LED.	<ul style="list-style-type: none"> Try to perform the pairing function. If the pairing operation works, the LED may be turned OFF via a software setting. Once the device is paired and accessible in the WaveLinX App, select the device to review the occupancy sensor settings and ensure that the LED function is enabled. If the pairing function fails to find the fixture/sensor, contact technical support.
	LED in the sensor window blinks white with motion instead of green. Device has not been paired with the desired WAC. OR LED in the sensor window blinks yellow and repeats indefinitely. Device has not been paired with the desired WAC.	<p>The sensor has been previously paired with a WaveLinX Area Controller.</p> <ul style="list-style-type: none"> Method 1: If there is more than one WaveLinX Area Controller at the facility, identify which WaveLinX Area Controller is paired by successively placing the WaveLinX Area Controllers into pairing mode to locate which unit prompts a dimming response in the load in question. Then, use the WaveLinX App to identify and delete the device manually from the incorrectly paired WaveLinX Area Controller. Method 2: Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. <p>The device's LED should then blink green with motion indicating its ready state for pairing.</p>
	LED in the sensor window blinks green, then white every 3 seconds.	<p>The sensor has been previously paired with a WaveLinX Area Controller but has lost communication with the controller.</p> <ul style="list-style-type: none"> Make certain that the WaveLinX Area Controller is powered and operational and that the device is within range. Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. <p>The device's LED should then blink green indicating its ready state for pairing.</p>
	LED in sensor window flashes white and repeats the flash indefinitely.	The sensor has been previously paired with a WaveLinX Area Controller and has been disabled using either a time schedule event or manual disable through the WaveLinX App. ³⁷³
	LED in sensor window flashes white, then yellow with motion.	The sensor has been previously paired with a WaveLinX Area Controller and daylighting is holding the lighting OFF due to the daylight exceeding the OFF threshold.

Device	Unexpected Condition	Resolution Steps
WaveLinX PRO <ul style="list-style-type: none"> Outdoor Lighting Control Module 	Connected load is OFF or ON continuously.	<ul style="list-style-type: none"> This device will operate the connected fixture via the onboard daylight sensor until the device is paired with a WaveLinX Area Controller. To verify functionality, power down, then power up the device via the circuit breaker. Immediately after power up, verify that the lighting load turns ON to 100% initially. The daylight sensor will then dictate whether the load remains ON or turns OFF. If load does not turn on initially upon power up, verify all connections and ensure the module is properly seated in the fixture's onboard mounting receptacle. Contact technical support if the problem persists.

³⁷³ If the device is a SWPD1 Integrated Sensor (IS), this flash pattern indicates that the lighting is OFF due to the daylight sensor exceeding the OFF threshold.

Device	Unexpected Condition	Resolution Steps
WaveLinx PRO • WaveLinx PRO Node	The connected fixture is OFF	<ul style="list-style-type: none"> • Verify that the fixture's power source is connected and powered from the circuit breaker. • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • Try to perform the pairing function. • If the pairing function fails to find the device and the fixture is still not responding, contact technical support.

Device	Unexpected Condition	Resolution Steps
WaveLinx PRO • Wireless Fixture	The connected fixture is OFF.	<ul style="list-style-type: none"> • Verify that the fixture's power source is connected and powered from the circuit breaker. • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • Try to perform the pairing function. • If the pairing function fails to find the device and the fixture is still not responding, contact technical support.

Device	Unexpected Condition	Resolution Steps
WaveLinx PRO • WaveLinx Universal Voltage Dimming Switchpack • RSP-P-010-347 • WSP-MV-010 • WSP-UV-010	LED and connected load are OFF.	<ul style="list-style-type: none"> • Press and release the onboard push button (1 second press) to try to toggle the load between ON and OFF. • If the load and LED do not respond, verify that the circuit wiring is properly connected and energized. • Disconnect 0-10V wiring from switchpack. The load should go to full bright when these wires are separated. • Contact technical support if the problem persists.
WaveLinx PRO • WaveLinx Universal Voltage Dimming Switchpack with Emergency • WSP-UV-010-EM	LED and connected load are OFF.	<ul style="list-style-type: none"> • Verify that the circuit wiring is properly connected and energized. • Disconnect 0-10V wiring from switchpack. The load should go to full bright when these wires are separated. • Contact technical support if the problem persists.
WaveLinx PRO • WaveLinx Universal Voltage Dimming Switchpack with contact closure • WSP-CA-010	Connected load is OFF.	<ul style="list-style-type: none"> • Verify that the circuit wiring is properly connected and energized. • Disconnect 0-10V wiring from switchpack. The load should go to full bright when these wires are separated. • Contact technical support if the problem persists.

Device	Unexpected Condition	Resolution Steps
WaveLinx PRO • Receptacle	The outlet LED does not illuminate and there is no power on both outlets.	<ul style="list-style-type: none"> • Verify that the circuit wiring is properly connected and energized. • Contact technical support if the problem persists.
	The outlet LED does not illuminate and there is no power to the controlled outlet. The constantly powered outlet is operational.	<ul style="list-style-type: none"> • Press the onboard manual push button to try to toggle the LED and outlet state. • If the problem persists, contact technical support.

Device	Unexpected Condition	Resolution Steps
WaveLinX PRO • Ceiling Sensor	LED does not flash	<ul style="list-style-type: none"> Ensure that the sensor batteries are installed and charged. Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14.

Device	Unexpected Condition	Resolution Steps
WaveLinX PRO • W-Series Wallstation	All the button LEDs are flashing quickly.	<ul style="list-style-type: none"> The wallstation is in pairing mode and indicates a successful connection to a WaveLinX Area Controller. The wallstation will automatically time-out from this function after 1 hour. If the WaveLinX Area Controller has exited pairing mode already, the press of the wallstation button should also cancel the LED flash behavior.
	When a button is pressed, no LEDs illuminate.	<ul style="list-style-type: none"> Verify that the circuit wiring is properly connected and energized. Contact technical support if the problem persists.
	When a button is pressed the LED flashes ON 500ms/OFF 1 sec. Repeats for 10 sec.	<ul style="list-style-type: none"> The wallstation has not been paired with a WaveLinX Area Controller. Press the PAIR button on the WaveLinX Area Controller to reinitialize the pairing process, and then press the button on the wallstation again to reissue the join request (the button LED will flash slowly for 10 seconds again to indicate the join request will be sent. As it joins the network, the LED may flash very rapidly for approximately 5 seconds, and then flash all LEDs to indicate it is paired). If the problem persists, verify that the distance of the wallstation to the WaveLinX Area Controller is within the expected range and that there are fewer than 150 devices paired before contacting technical support.
	When the button is pressed, the LED stays ON.	<ul style="list-style-type: none"> The wallstation has been previously paired and is part of either a construction group or WaveLinX App defined area. If paired with the incorrect WaveLinX Area Controller, locate the WaveLinX Area Controller that is responding to the button presses. Then, use the WaveLinX App to identify and delete the device manually from the incorrectly paired WaveLinX Area Controller to allow pairing to the correct WaveLinX Area Controller.
	When a button is pressed the LED flashes ON 1 sec/OFF 1 sec. and repeats for 10 sec.	<ul style="list-style-type: none"> The wallstation has been previously paired and is part of a WaveLinX App defined area and has been disabled using a time schedule event or manual WaveLinX App disable command. Verify that the wallstation is enabled and check for time schedule events that may be disabling the wallstation.

Device	Unexpected Condition	Resolution Steps
WaveLinX PRO • WB-Series Battery Powered Wallstations	When a button is pressed, no button LEDs illuminate.	<ul style="list-style-type: none"> Out-of-the-box, this is the correct behavior.
	When my hand is in proximity to the wallstation, the red LED under the bottom button does not flash.	<ul style="list-style-type: none"> Verify that the batteries are installed properly for the wallstation and that they are fully charged. Verify that your hand is within approximately 5cm of the wallstation. Contact technical support if the problem persists.
	When the button is pressed, the LED on the button illuminates then turns OFF. When I have my hand close to the station, the LED on the button turns ON again.	<ul style="list-style-type: none"> The wallstation has been previously paired and is part of either a construction group or WaveLinX App defined area. If paired with the incorrect WaveLinX Area Controller, locate the WaveLinX Area Controller that is responding to the button presses. Then, use the WaveLinX App to identify and delete the device manually from the incorrectly paired WaveLinX Area Controller to allow pairing to the correct WaveLinX Area Controller. The LEDs will turn OFF automatically to conserve battery life conserving energy until the wallstation is used again.

Device	Unexpected Condition	Resolution Steps
WaveLinx PRO • WW-Series Wallstation	When a button is pressed, no LEDs illuminate	<ul style="list-style-type: none"> • Verify that the circuit wiring is properly connected and energized. • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • Contact technical support if the problem persists.
	When a button is pressed, the LED flashes white for 300ms/OFF for 1.7 sec and repeats for 10 seconds instead of green.	<p>The wallstation has been previously paired with a WaveLinx Area Controller.</p> <ul style="list-style-type: none"> • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • The device's LED should then blink green when a button is pressed indicating its ready state for pairing.
	The LED is flashing yellow repeatedly OR The LED is flashing magenta repeatedly	<p>The wallstation has been previously paired with a WaveLinx Area Controller.</p> <ul style="list-style-type: none"> • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • The device's LED should then blink green when a button is pressed indicating its ready state for pairing.
	When a button is pressed, the LED flashes green, and then white, repeating for 10 seconds.	<p>The wallstation has been previously paired with a WaveLinx Area Controller but has lost communication with the controller.</p> <ul style="list-style-type: none"> • Make certain that the WaveLinx Area Controller is powered and operational and that the device is within range. • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • The device's LED should then blink green when a button is pressed indicating its ready state for pairing.
	When a button is pressed, the LED flashes white for 1 sec./OFF for 1 sec. and repeats for 10 seconds.	<ul style="list-style-type: none"> • The wallstation has been previously paired and is part of a WaveLinx App defined area and has been disabled using a time schedule event or manual WaveLinx App disable command. Verify that the wallstation is enabled and check for time schedule events that may be disabling the wallstation.

Device	Unexpected Condition	Resolution Steps
WaveLinx PRO • WWB-Series Battery Powered Wallstation	When a button is pressed, no LEDs illuminate	<ul style="list-style-type: none"> • Verify that the batteries are installed properly for the wallstation and that they are fully charged. • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • Contact technical support if the problem persists.
	When a button is pressed, the LED flashes white* (300ms ON/1.7sec. OFF) for 15 seconds instead of green. OR When a button is pressed the LED flashes white then magenta* for 15 seconds instead of green.	<p>The wallstation has been previously paired with a WaveLinx Area Controller.</p> <ul style="list-style-type: none"> • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. <p>The device's LED should then blink green when a button is pressed indicating its ready state for pairing.</p> <p>*Note: may be followed by a yellow or red flash indicating a low or very low battery status.</p>
	When a button is pressed, the LED flashes green and then white*, repeating for 10 seconds.	<p>The wallstation has been previously paired with a WaveLinx Area Controller but has lost communication with the controller.</p> <ul style="list-style-type: none"> • Make certain that the WaveLinx Area Controller is powered and operational and that the device is within range. • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • The device's LED should then blink green when a button is pressed indicating its ready state for pairing. <p>*Note: instead of white, the green flash may be followed by a yellow or red flash indicating a low or very low battery status.</p>

Device	Unexpected Condition	Resolution Steps
CONTINUED <ul style="list-style-type: none"> WWB-Series Battery Powered Wallstation 	When a button is pressed, the LED flashes white* (1 sec. ON/1 sec. OFF) for 15 seconds	<ul style="list-style-type: none"> The wallstation has been previously paired and is part of a WaveLinX App defined area and has been disabled using a time schedule event or manual WaveLinX App disable command. Verify that the wallstation is enabled and check for time schedule events that may be disabling the wallstation. *Note: may be followed by a yellow or red flash indicating a low or very low battery status.

Device	Unexpected Condition	Resolution Steps
WaveLinX <ul style="list-style-type: none"> Low-Voltage Power Module 	All LEDs and connected lighting are OFF	<ul style="list-style-type: none"> Verify that the Low-Voltage Power Module is properly connected to a powered circuit breaker. Contact technical support if the problem persists.
	ALL LEDs are OFF Some of the fixtures are ON	<ul style="list-style-type: none"> Verify that the power circuit wiring is properly connected. The Low-Voltage Power Module has separate wiring compartments that allow outputs 1 and 2 to operate from an emergency circuit. Make certain that both powering circuits are connected and powered. If not using an emergency circuit, make sure to remove the wiring barrier and route the normal power circuit to both the normal and emergency connection.
	The Status LED is Solid RED	<ul style="list-style-type: none"> The Low-Voltage Power Module has encountered an error condition. Press and release (1 second press) the onboard RESET button to reboot the Low-Voltage Power Module. Wait approximately 2 minutes for the reboot to complete. If Status LED is still RED, contact technical support.
	The Alert LED is solid RED.	<ul style="list-style-type: none"> The Low-Voltage Power Module is receiving a contact closure on its Alert wiring terminal. Remove the terminal to clear the alert. Review the connected device operation is set properly.
	An Output LED is blinking	<ul style="list-style-type: none"> The output voltage is out of specification. The output channel may be overloaded. Power down the Low-Voltage Power Module and try redistributing the load on that channel. Continue to redistribute until when powered up, the Output LED remains lit continuously.
	The Output LEDs are OFF on channels 1 and 2	<ul style="list-style-type: none"> Verify that the power circuit wiring is properly connected. The Low-Voltage Power Module has separate wiring compartments that allow outputs 1 and 2 to operate from an emergency circuit. Make certain that both powering circuits are connected and powered. If not using an emergency circuit, make sure to remove the wiring barrier and route the normal power circuit to both the normal and emergency connection.

Device	Unexpected Condition	Resolution Steps
WaveLinX LV <ul style="list-style-type: none"> Low-Voltage Fixture with Integrated Sensor 	No LED in the sensor window and the connected fixture is OFF.	<ul style="list-style-type: none"> Verify that the Low-Voltage Power Module is connected and energized. The status LED may flash orange when not configured. Verify that the Low-Voltage Fixture's low-voltage connection cable is securely plugged into the output channel. Power down the Low-Voltage Power Module whenever plugging or unplugging connection cable. Hot swapping is not supported. Verify that the Low-Voltage output channel's green LED is lit continuously. If blinking, the output voltage is out of specification (too low or too high). Power down the Low-Voltage Power Module and re-distribute the connected loads. Press and release the Low-Voltage Power Module's TEST button. All lights connected to the Low-Voltage Module will cycle between OFF and ON for 15 seconds. If other loads are responding properly, try moving this load to the good location and connect with the known good cabling. Power down the Low-Voltage Power Module whenever plugging or unplugging connection cable. Hot swapping is not supported. If load is still not responsive, contact technical support.

Device	Unexpected Condition	Resolution Steps
CONTINUED • Low-Voltage Fixture with Integrated Sensor	No LED in the sensor window and the connected fixture is ON.	<ul style="list-style-type: none"> Press and release the Low-Voltage Power Module's TEST button. All lights connected to the Low-Voltage Module will cycle between OFF and ON for 15 seconds. Verify that the fixture responds. Try to perform the pairing function. If the pairing operation works, the LED may be turned OFF via a software setting. Once the device is paired and accessible in the WaveLinx App, select the device to review the occupancy sensor settings and ensure that the LED function is enabled. If the problem persists, contact technical support.
	LED in the sensor window blinks white instead of green (tricolor model)	<ul style="list-style-type: none"> The Low-Voltage Power Module has been previously paired with a WaveLinx Area Controller and paired its connected Low-Voltage devices. The status LED on the Low-Voltage Power Module may be solid GREEN. The Low-Voltage Fixture with Integrated Sensor does not have a unique Factory Reset command. Refer to the Low-Voltage Power Module reference sheet on page 74 for information on how to perform a Factory Reset for the Low-Voltage Power Module if it has been paired in error.

Device	Unexpected Condition	Resolution Steps
WaveLinx LV • Low-Voltage Fixture	Connected load is OFF.	<ul style="list-style-type: none"> Verify that the Low-Voltage Power Module is connected and energized. The status LED may flash orange when not configured. Verify that the Low-Voltage Fixture's low-voltage connection cable is securely plugged into the output channel. Power down the Low-Voltage Power Module whenever plugging or unplugging connection cable. Hot swapping is not supported. Verify that the Low-Voltage output channel's green LED is lit continuously. If blinking, the output voltage is out of specification (too low or too high). Power down the Low-Voltage Power Module and re-distribute the connected loads. Press and release the Low-Voltage Power Module's TEST button. All lights connected to the Low-Voltage Module will cycle between OFF and ON for 15 seconds. If other loads are responding properly, try moving this load to the good location and connect with the known good cabling. Power down the Low-Voltage Power Module whenever plugging or unplugging connection cable. Hot swapping is not supported. If load is still not responsive, contact technical support.

Device	Unexpected Condition	Resolution Steps
WaveLinx • Area Hub	All LEDs on the Area Hub are OFF	<ul style="list-style-type: none"> Verify that the Area Hub is connected to PoE network switch and that the network switch is powered. Contact technical support if the problem persists.
	WaveLinx Mobile App is not discovering the WaveLinx Area Hub	<ul style="list-style-type: none"> Confirm that the Area Hub is powered and connected to the PoE network switch. Verify that the Area Hub Status LED is ON solid green. If ON solid white, the Area Hub has already been added to a WaveLinx Area Controller and will not allow discovery. If using static IP addresses, confirm that the IP addresses given to the WaveLinx Area Controller and the WaveLinx Area Hub are in the same subnet. In the WaveLinx Mobile app Devices menu, run Area Hub Discovery to rescan. Factory reset the Area Hub. Hold down the reset button on the Area Hub for 10 seconds until the status LED turns yellow. Reconfigure the Area Hub and open the WaveLinx Mobile App to retry discovery. Contact technical support if the problem persists.

Device	Unexpected Condition	Resolution Steps
CONTINUED WaveLinX • Area Hub	The Main Status LED and/or a CAN Bus port LED is Solid RED	<ul style="list-style-type: none"> A fault is present on the connected CAT bus. Power down the Area Hub and disconnect any CAT bus connections. Power up with no CAT buses attached and verify the status LED resumes normal operation. Power down the Area Hub and connect one CAT bus. Power up the Area Hub. If the status LED stays clear, continue this process to add back a bus at a time until the bus that is causing the issue is located. Troubleshoot the bus to determine the cause of the fault (improper CAT cabling/broken or shorted wiring, etc....)
	The LED is off on one of the connected CAT Bus Ports and the devices are not being read.	<ul style="list-style-type: none"> Verify that the Area Hub is powered and the main status LED is ON either green or white. Verify that the devices on the connected CAT bus are connected to the CAT Bus with a WaveLinX CAT Dimming Switchpack (not emergency model). This device provides power to the CAT bus. Verify that the connected WaveLinX CAT Dimming Switchpack is wired properly and that the circuit breaker is ON. Verify that all devices on the CAT bus are connected properly and that the end device has the termination port connector installed. Power down the Area Hub and try connected the CAT bus to a different Area Hub port. Power up. If the problem persists, contact technical support.
	My CAT devices are not operating with their programming but appear to have some response to motion and wallstation presses. The LED on the Area Hub is flashing green/white/OFF and repeating.	<ul style="list-style-type: none"> The Area Hub has lost communications with the connected WaveLinX Area Controller and the CAT devices are operating in Distributed Mode. Verify that the WaveLinX Area Controller is powered and operational. Verify that the IP address of the WaveLinX Area Controller is still in the same subnet as the IP address of the Area Hub. Try issuing a soft reset to the WaveLinX Area Controller and the Area Hub. If the problem persists, contact technical support.

Device	Unexpected Condition	Resolution Steps
WaveLinX CAT • Dimming Switchpack • RSP-C-010-Z1	LED and connected load are OFF.	<ul style="list-style-type: none"> Try using a wall switch wired to the same CAT bus to turn lighting ON. Verify that the circuit wiring is properly connected and energized. Disconnect 0-10V wiring from switchpack. The load should go to full bright when these wires are separated. Contact technical support if the problem persists.
	The LED is Blue and the device is not responding properly	<ul style="list-style-type: none"> The device is operating in Distributed Mode and is not yet added to a WaveLinX Area Controller. The device may respond to devices on the same CAT bus when in Distributed Mode. Verify that the device's CAT bus is connected to an Area Hub port. Use the WaveLinX Mobile App to discover the connected Area Hub and Add Devices. The LED should turn White and the device should be available for programming. Contact technical support if the problem persists.

Device	Unexpected Condition	Resolution Steps
WaveLinX CAT • Emergency Dimming Switchpack • ESP-C-010-Z1	LED and connected load are OFF.	<ul style="list-style-type: none"> Try using a wall switch wired to the same CAT bus to turn lighting ON. Verify that the circuit wiring is properly connected and energized. Disconnect 0-10V wiring from switchpack. The load should go to full bright when these wires are separated. Contact technical support if the problem persists.

Device	Unexpected Condition	Resolution Steps
CONTINUED WaveLinx CAT <ul style="list-style-type: none"> Emergency Dimming Switchpack <ul style="list-style-type: none"> ESP-C-010-Z1 	The connected lighting remains ON and cannot be controlled. The LED may be flashing Red.	<ul style="list-style-type: none"> The device is in Emergency Mode. Verify that normal power is present for the non-emergency devices on the same CAT bus. For proper operation, at least one WaveLinx CAT Dimming Switchpack (non-emergency model) on the same CAT bus must be set to Emergency Lighting Mode to generate the normal power present signal that the WaveLinx CAT Emergency Dimming Switchpack requires. Please refer "Step 7: Program Power Sensing Devices for Emergency Device Operation" on page 159. If the emergency mode has been properly set for the WaveLinx CAT Dimming Switchpack(s) and normal power is present for the devices that send the normal power present signal to the emergency switchpack, contact technical support for additional assistance.
	The LED is Blue and the device is not responding properly	<ul style="list-style-type: none"> The device is operating in Distributed Mode and is not yet added to a WaveLinx Area Controller. The device may respond to devices on the same CAT bus when in Distributed Mode. Verify that the device's CAT bus is connected to an Area Hub port. Use the WaveLinx Mobile App to discover the connected Area Hub and Add Devices. The LED should turn White and the device should be available for programming. Contact technical support if the problem persists.

Device	Unexpected Condition	Resolution Steps
WaveLinx CAT <ul style="list-style-type: none"> Occupancy Ceiling Sensor 	LED does not flash with motion	<ul style="list-style-type: none"> Verify that the devices on the connected CAT bus are connected to the CAT Bus with a WaveLinx CAT Dimming Switchpack (not emergency model). This device provides power to the CAT bus. Verify that the connected WaveLinx CAT Dimming Switchpack is wired properly and that the circuit breaker is ON. Verify that all devices on the CAT bus are connected properly and that the end device has the termination port connector installed. Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. Contact technical support if the problem persists.
	The LED flashes blue and the device is not controlling lighting properly	<ul style="list-style-type: none"> The device is operating in Distributed Mode and is not yet added to a WaveLinx Area Controller. The device may respond to devices on the same CAT bus when in Distributed Mode. Verify that the device's CAT bus is connected to an Area Hub port. Use the WaveLinx Mobile App to discover the connected Area Hub and Add Devices. The LED should turn White and the device should be available for programming. Contact technical support if the problem persists.
	LED in sensor window flashes white and repeats the flash indefinitely.	<ul style="list-style-type: none"> The sensor has been added to a WaveLinx Area Controller and has been disabled using either a time schedule event or manual disable through the WaveLinx App.

Device	Unexpected Condition	Resolution Steps
WaveLinx CAT <ul style="list-style-type: none"> WST-C Series Wallstation 	When a button is pressed, no LEDs illuminate	<ul style="list-style-type: none"> Verify that the devices on the connected CAT bus are connected to the CAT Bus with a WaveLinx CAT Dimming Switchpack (not emergency model). This device provides power to the CAT bus. Verify that the connected WaveLinx CAT Dimming Switchpack is wired properly and that the circuit breaker is ON. Verify that all devices on the CAT bus are connected properly and that the end device has the termination port connector installed. Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. Contact technical support if the problem persists.
	When a button is pressed, the LED flashes blue for 300ms/OFF for 1.7 sec and repeats for 10 seconds instead of white.	<ul style="list-style-type: none"> The device is operating in Distributed Mode and is not yet added to a WaveLinx Area Controller. The device may respond to devices on the same CAT bus when in Distributed Mode. Verify that the device's CAT bus is connected to an Area Hub port. Use the WaveLinx Mobile App to discover the connected Area Hub and Add Devices. The LED should flash white when a button is pressed and the device should be available for programming. Contact technical support if the problem persists.
	The LED flashes white continuously.	<ul style="list-style-type: none"> The wallstation has been added to a WaveLinx Area Controller and has been disabled using either a time schedule event or manual disable through the WaveLinx App.

Device	Unexpected Condition	Resolution Steps
WaveLinx CAT <ul style="list-style-type: none"> Contact Closure Input Module 	No LEDs illuminate on the device	<ul style="list-style-type: none"> Verify that the devices on the connected CAT bus are connected to the CAT Bus with a WaveLinx CAT Dimming Switchpack (not emergency model). This device provides power to the CAT bus. Verify that the connected WaveLinx CAT Dimming Switchpack is wired properly and that the circuit breaker is ON. Verify that all devices on the CAT bus are connected properly and that the end device has the termination port connector installed. Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. Contact technical support if the problem persists.
	The device LED is flashing blue but nothing is happening when the contacts are closing	<ul style="list-style-type: none"> The device is operating in Distributed Mode and is not yet added to a WaveLinx Area Controller. The device may issue basic commands to devices on the same CAT bus when in Distributed Mode. Verify that the device's CAT bus is connected to an Area Hub port. Use the WaveLinx Mobile App to discover the connected Area Hub and Add Devices. The LED should flash white and the device should be available for programming. Contact technical support if the problem persists.
	The device LED is flashing white but nothing is happening when the contacts are closing	<ul style="list-style-type: none"> The contact closure module has been added to a WaveLinx Area Controller but may not be programmed. Verify that the contact closure actions have been programmed for the desired actions through the WaveLinx Mobile App.

Device	Unexpected Condition	Resolution Steps
WaveLinx CAT • Sensor Input Module	No LEDs illuminate on the device	<ul style="list-style-type: none"> • Verify that the devices on the connected CAT bus are connected to the CAT Bus with a WaveLinx CAT Dimming Switchpack (not emergency model). This device provides power to the CAT bus. • Verify that the connected WaveLinx CAT Dimming Switchpack is wired properly and that the circuit breaker is ON. • Verify that all devices on the CAT bus are connected properly and that the end device has the termination port connector installed. • Perform a factory reset on the device. Refer to the procedure in the device reference sheet starting on page 14. • Contact technical support if the problem persists.
	The device LED is flashing blue but the programming does not seem to be operating as expected	<ul style="list-style-type: none"> • The device is operating in Distributed Mode and is not yet added to a WaveLinx Area Controller. The device may issue basic commands to devices on the same CAT bus when in Distributed Mode. • Verify that the device's CAT bus is connected to an Area Hub port. • Use the WaveLinx Mobile App to discover the connected Area Hub and Add Devices. The LED should flash white and the device should be available for programming. • Contact technical support if the problem persists.
	The LED flashes white continuously.	<ul style="list-style-type: none"> • The module has been added to a WaveLinx Area Controller and has been disabled using either a time schedule event or manual disable through the WaveLinx App.

Pairing mode timed out before I was done adding my devices or before I confirmed that my devices paired properly. What should I do?

Simply press the PAIR button on the WaveLinx Area Controller again to re-establish pairing mode. All paired devices that are in the construction group will respond with the paired behavior and additional devices may be added. Review the details for how each device should respond in pairing mode in the WaveLinx device reference sheets starting on page 14.

One or more of my devices did not pair to the WaveLinx Area Controller or does not appear in my WaveLinx App. What should I do?

First verify that the device still exhibits the proper out-of-the box behavior described in the device reference sheets starting on page 14. If not displaying the proper behavior, refer to the troubleshooting chart beginning on page 350 to determine the cause before proceeding.

If the device is exhibiting the proper behavior press the PAIR button on the WaveLinx Area Controller and then place the device into pairing mode as described in the device reference sheets starting on page 14. If the device still does not pair properly, verify that the distance is within the expected range and that the WaveLinx Area Controller supports the quantity of devices paired with it before contacting technical support.

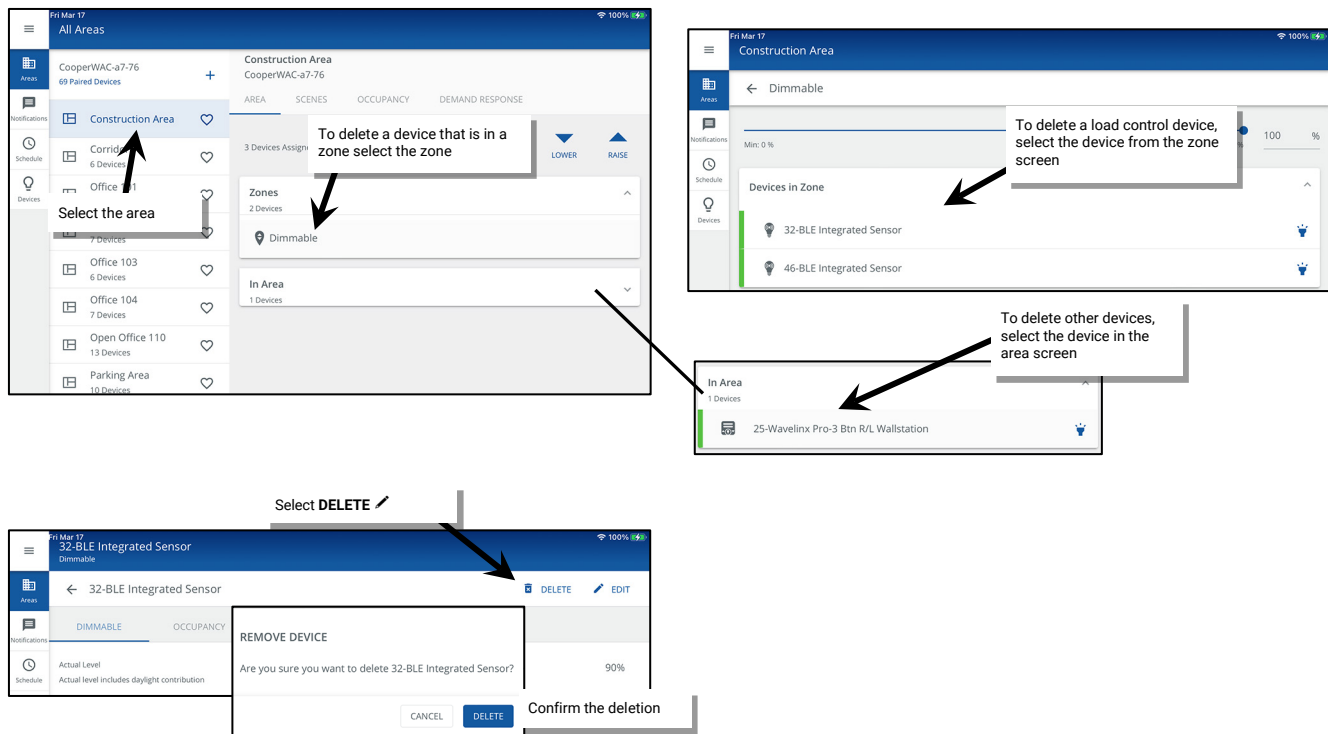
How do I remove devices that have paired with the wrong WaveLinx Area Controller?

In the WaveLinx Mobile Application or WaveLinx WAC Lighting App³⁷⁴, these devices will appear in the **Unassigned Devices** section of the WaveLinx App and should be in the default construction area.

³⁷⁴ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

To remove a single device

For a single device, select the device to open the device screen, then select the trash can icon and confirm the deletion. The device should exhibit out-of-the-box behavior and be ready to pair with the correct WaveLinx Area Controller.



To remove multiple devices

Remove all devices still assigned to the default construction group by pressing and holding the PAIR button on the WaveLinx Area Controller for 4 seconds. Wait up to 15 minutes for the devices to be removed from the WaveLinx Area Controller. Then, go through the pairing process to pair the devices with the correct WaveLinx Area Controller. This command will only affect devices that are still in the default construction area. Devices still in the default construction area can also be removed by using the WaveLinx Area Controller's debug page. See page 314 for steps on using this feature.

How do I manually force a device to unpair?

If a device is showing paired behavior but it is not visible in the WaveLinx App, it may have been paired previously with a different WaveLinx Area Controller. It is possible to manually force a device to unpair by performing a Factory Reset. For device specific instructions, refer to the "WaveLinx Device Reference Sheets" beginning on page 14.

I am done assigning my devices to areas, but devices still show in the WaveLinx App's Unassigned Devices. What should I do?

If this is the only WaveLinx Area Controller in the facility: A device may have been added that is not shown on the plans. Connect to the WaveLinx Area Controller Using the WaveLinx Mobile App or the WaveLinx WAC Lighting App³⁷⁵. Refer to the "WaveLinx Device Reference Sheets" beginning on page 14 for how the specific device should behave in **Blink to Identify** and then open the device configuration and select the **Blink to Identify** option located at the bottom of the screen. Walk around the space until the device is identified, continuing to refresh the **Blink to Identify** command as needed.³⁷⁶

If there are other WaveLinx Area Controllers in the facility: The device may have paired with the incorrect WaveLinx Area Controller. Follow the steps on page 361 to remove the device and to prepare it for pairing to the correct WaveLinx Area Controller.

I installed a new device or I found a device that was not powered during the pairing process. How do I pair the new device?

To pair an additional device after the initial construction pairing is complete, press the PAIR button on the WaveLinx Area Controller to reinitialize pairing and then place the device in pairing mode per the steps found in the device reference sheets starting on page 14. The device should join the existing construction group within the 60-minute pairing process.

³⁷⁵ The WaveLinx WAC Lighting App can be used with WAC2 (Gen 2) minimum software version 11.x.x.x and higher.

³⁷⁶ Battery powered WaveLinx Ceiling Sensors and WaveLinx Battery Powered Wallstations do not have the option to blink to identify.

How do I switch users?

It is easy to change users in the WaveLinX App. Simply logout and then login as the desired user.

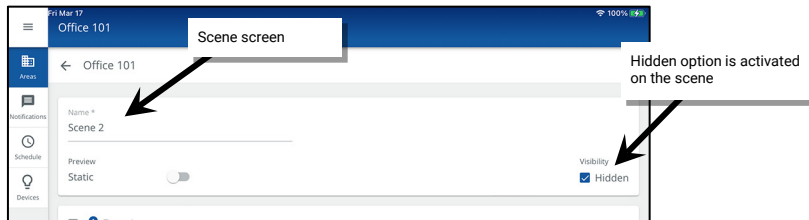
When I open the Mobile App, I get an error message. What should I do?

Review the displayed message. If it is a connection error, verify that the mobile device is still connected to the proper wireless network.

If it is not a connection error, completely close the app. Disconnect and then reconnect to the correct wireless network, and then open the application. Contact technical support if the problem persists.

When I log in as the personal control user, not all the scenes are showing when I go to the scene screen. Why is this happening?

It is possible that the administrator of the system has hidden the scene during the configuration process. If this was done in error, log in to the system as the administrator user, and then select the area to modify. In the area's scene editor, select the affected scene and ensure that the hidden option is not active for the scene.

**In personal control, I selected a scene, but the lighting did not appear to change. Why?**

First, try selecting a different scene, or adjusting a zone. If there is still no change in the light level, ensure that the loads respond to basic ON and OFF control commands. If loads do not respond, look at the device LEDs or log in as the administrator user and verify that the devices have not lost communication with the system.

If ON and OFF commands operate but the light level remains dim or if the light level remains OFF, the daylight sensors or an active demand response signal may be lowering the light output level. If demand response is not being used and the light level remains at a low level or OFF, ensure that the daylight sensors are properly calibrated by following the procedures on page 235 or page 240.

The lights are dimmed but the personal control screen or other screen indicators says that they are at 100%. Why?

This can occur on WAC Gen 1 and WAC2 Gen 2 with versions prior to 12.0.x.x. In these earlier WAC versions, the system may have any of the following active commands that can cause the lights to be dimmed:

- The maximum level (high-end trim) assigned to the device's zone
- Active demand response signals
- Daylight sensor signals

If any of these items is calling for a light reduction, the system response is a reduced light output. Therefore, it is possible to have the light range reduced by the daylight sensor and still see that the light zone is at 100%. This reflects that the electric light is at the full 100% potential of the calibrated daylight level. If the light level does not seem to be correct for the space, ensure that the daylight sensors are properly calibrated by following the procedures on page 235 or page 245.

For WAC2 Gen 2 with version 12.0.x.x or higher, the actual level should be shown for most devices.

I work between two different spaces in my facility. Can I control both rooms through the Mobile App?

It is possible to control any area as a personal control user. During setup, one of the areas may have been assigned as a favorite area, meaning the application will open to that area by default. To navigate to a different area, simply tap the other area or touch the back button at the top-left corner of the screen, and then select the desired area in the list.

If the area is controlled through a different WaveLinX Area Controller, you may need to logout of the first WaveLinX Area Controller and then login to the second to access the additional area. If the WaveLinX Area Controllers are not connected to the facility's building LAN, it may be necessary to switch the mobile device connection to a different wireless network to control the additional area.

I am not using demand response. How do I disable it?

There is no need to disable the demand response feature. If a demand response system is not connected, the system will not trigger a demand response command unless placed into test mode through the WaveLinX App. The test mode may be cancelled through the WaveLinX App or will time-out automatically after 30 minutes if it is triggered in error.

I want to use demand response. How do I make the connection to my demand response system?

If connecting via a contact closure input, the WaveLinx CAT Contact Closure Input can be used to issue the demand response signal. If integrating via Ethernet or other means, refer to the WaveLinx CORE system User Guide.

My schedule events are running but they are running at the incorrect time. What could be causing this?

The WaveLinx Area Controller may not be on the correct time and date or may be set for the incorrect time zone. Refer to page 294 to set the time, date, and time zone in the WaveLinx Area Controller. Also, make sure that the schedule event time has been entered in military time format and has been configured to operate on the desired days of the week.

How do I define the astronomic clock's latitude and longitude?

The astronomic clock's latitude and longitude as well as the time zone are set through the WaveLinx Area Controller's internal webpages. Refer to page 294 to set the location and time zone for the WaveLinx Area Controller.

I am installing a replacement WaveLinx Area Controller. Do I need to go through the construction grouping process to pair the devices with the new WaveLinx Area Controller?

During database restoration, the previous WaveLinx Area Controller's ID and device tables will be populated into the new WaveLinx Area Controller negating the need to pair the devices with the new WaveLinx Area Controller. Simply restore the backup to the new WaveLinx Area Controller and once the backup is completed, the devices will begin to operate. The restoration process may take approximately 1½ hours to propagate to all devices.

My backup was done prior to a firmware update. Can I restore the older backup if I have updated the firmware in my devices?

Yes, you can. The backup contains not only the saved settings, but also a backup of the firmware that was present in the WaveLinx Area Controller at the time that the backup was created. During the restoration, the WaveLinx Area Controller firmware will be replaced with the version that was present during the backup.³⁷⁷ The firmware of paired devices will remain and will continue to run. This may cause some incompatibilities that will need to be resolved once the restoration is complete. Once restored, wait approximately 1½ hours to allow devices to rejoin the network and then ensure that the WaveLinx Area Controller and devices are updated to the latest firmware. Make sure to create a new backup.

After I calibrated the closed loop sensors, I noticed that the light output is different for each fixture. Why is this occurring?

Each sensor in a closed loop system maintains a light level for its directly connected fixture(s). This can result in a different electric light output for each separately controlled fixture making the ceiling light output look uneven. Keep in mind that the goal of closed loop is to keep the light level at the work surface consistent, not the light output at the ceiling.

The lights over my desk appear to adjust to different dimming levels even though the daylight does not appear to change. Why is this happening?

Sensor placement is critical to proper daylight function. With both open and closed loop sensors, what the sensor is viewing will affect the reading of the sensor. Darker furnishing may be less reflective, resulting in the electric light being brighter. Lighter furnishing may be more reflective, resulting in electric light being dimmer. Placement of a sensor over a surface that frequently changes will affect the overall performance. This also includes papers on the desk surface, or even what the occupant of the space is wearing.

After I programmed the open loop daylight sets, the work surface light level is not consistent over the controlled zone. Why is this occurring?

In open loop daylighting, because larger areas are controlled, the uniformity of the work surface light level across the zone may vary due to differences in daylight exposure, furniture placement, as well as surface colors within the space. Ceiling light output is more uniform with open loop daylight approaches, but the work surface level may be less consistent for larger controlled zones. It may be necessary to create additional zones to group lighting in smaller control groups that can be controlled by different open loop daylight sets so that different light levels may be set to accommodate these differences.

My exterior lighting does not respond ON or OFF at the same time. Why is this occurring?

If Outdoor Integrated Sensors are being used in closed loop daylighting, each fixture responds to its own sensor for daylighting commands. While calibration should get fixture response to daylighting close, there is no way of ensuring that all lighting will respond in the same manner at the same time. If fixture response seems very disparate, refer on the process on page 235 to recalibrate the sensors or configure for open loop daylighting, selecting one sensor to control the group of fixtures. See page 240 for details on configuring open loop control.

If WaveLinx Outdoor Lighting Control Modules are being used, it is possible to have one sensor control daylighting for the fixture it is mounted on or for a defined group of fixtures. If fixtures are not responding at the same time to daylighting commands, they may be assigned to different daylight sets. In this circumstance, determine which sensor will be the sensor in control and ensure that it is assigned to a single daylight set controlling all lighting zones in the area. See page 240 for further configuration details.

³⁷⁷ When restoring a WAC (Gen 1) database into a WAC2 (Gen 2), the WAC (Gen 1) firmware files will not be restored. Once restored, the WAC2 will function with the restored database.

My wallstation or occupancy sensors only work at night. Why is this occurring?

First check that there is not a schedule event disabling the devices from operating during the day. If there is no disable event, this could also be due to daylighting. Daylighting filters the fixture's response to other control commands. A command from a wallstation button or occupancy sensor to go to 100% will adjust the electric light level output to meet the calibrated daylight level. A command from a wallstation button or occupancy sensor to go to 50% will adjust the electric light level to meet 50% of the calibrated daylight level. The actual electric light level output with these commands will vary based on the available amount of daylight in the space and how much electric light needs to be contributed to maintain the commanded target. If the electric light has daylight dimmed to OFF, lighting will remain OFF if wallstation, schedule events or occupancy commands are received, preventing unnecessary energy waste when adequate daylight is present. If the space is too dim during the daytime hours, recalibrate the sensors.

I get the message, Scheduling details are editable via WaveLinx CORE since this controller is being centrally managed. Why is this message appearing?

For sites using a WaveLinx CORE, if schedules are administered in the WaveLinx CORE applications, the WaveLinx App will not allow schedule modification and will display a message box in the scheduling screen. If this occurs, continue to administer any necessary schedule changes through the WaveLinx CORE applications.

My schedule event actions do not always appear to run. Why is this occurring?

There are a few items to check if schedule events do not appear to be running. First, check that the schedule event has been correctly configured AND is enabled. Also, verify that the time in the WaveLinx Area Controller has been set properly. If these settings are correct, there are other factors that may affect schedule event operations.

First, if a time schedule event that issues a scene or zone level command is assigned to an area that has occupancy sensors, at the time of the schedule event, if the area is occupied, the lighting and receptacle loads will go to the commanded levels. If the area is not occupied, the lighting and receptacle loads will remain at the unoccupied commanded levels.

Second, daylighting filters the fixture's response to other control commands and may be reducing the light level due to adequate daylight being present. If daylighting strategies are being used, the actual electric light level output from schedule event commands will vary based on the available amount of daylight in the space and how much electric light needs to be contributed to maintain the commanded target. If the electric light has daylight dimmed to OFF, lighting will remain OFF if wallstation, schedule or occupancy commands are received, preventing unnecessary energy waste when adequate daylight is present.

What will my devices do if they lose communication with the WaveLinx Area Controller?

A load device will maintain its current command for approximately a 15-minute period (some devices may respond faster). If a device is not able to communicate with the WaveLinx Area Controller for more than 15 minutes, the device will begin its loss of communications mode. Refer to the device reference sheets starting on page 14 for information on the expected behavior of each device. Once communication with the WaveLinx Area Controller is re-established, the device will begin to operate per the programmed parameters.

I am using a WaveLinx Universal Voltage Dimming Switchpack's contact closure input. My switchpack does not have the additional icon showing in the In Area section of the WaveLinx App or I do not see the option to set the input type. Why is this icon/input type not showing?

If the Universal Voltage Dimming Switchpack does not show the secondary icon for the contact closure in the **In Area** section of the WaveLinx App, verify the following things:

- Make certain that the device has been correctly identified in the WaveLinx App.
- Make certain that the WaveLinx App is the latest version.
- Make certain that the switchpack being used is the correct model. Only the WaveLinx Universal Dimming Switchpack model WSP-CA-010 supports connection to a contact closure device and will display this additional icon and input type selection.
- If the switchpack is connected to a lighting load as well as a contact input, make sure that the device has been assigned to the correct area and zone. If the switchpack has been left in the **In Area** section, it will not display the link icon but will still allow for selection of an input type.
- After verifying that the correct switchpack model is being used, make sure that the switchpack firmware is updated to the latest version. Firmware must be version 0x2180560 or later to support the contact closure functionality. Refer to "Updating the Firmware of WaveLinx Devices" on page 308 for details on updating device firmware. (The model WSP-CA-010 Universal Voltage Dimming Switchpack will display as a **347 Switchpack** device type in the WaveLinx internal webpages).

Appendix A: Assigning Point Guards in WaveLinX PRO

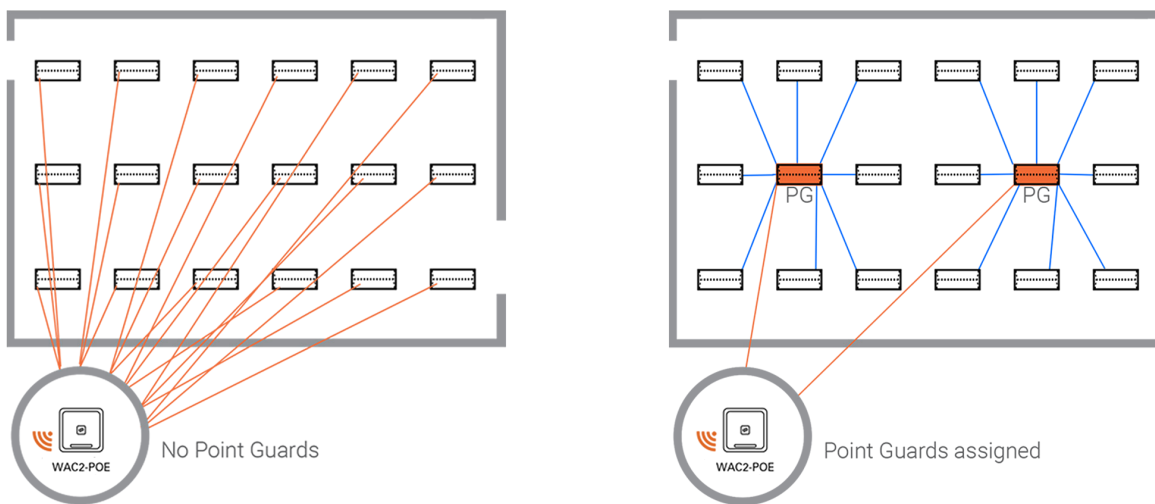
This section is for advanced technician use only for WaveLinX PRO devices. Use these steps with caution and upon the advice of technical support. Changing settings other than those shown in this section can produce unexpected results.

Setup technicians: Use this section to assign Point Guards in a user defined area that has a large quantity of devices reporting to a single zone. This feature assumes advanced knowledge and is intended to be used by technicians familiar with large zone applications or when working under guidance from technical support.

What is a Point Guard?

In a zone that has a large quantity of devices, a **Point Guard** is an assigned device that receives and passes WaveLinX PRO wireless communications to other devices in the zone to streamline communications. One zone may contain multiple Point Guards. The zone may also be referred to as a DomZone when the Point Guard is assigned.

In a large zone, WaveLinX PRO devices that are further away from the WaveLinX Area Controller may have a delay in response to commands. For instance, if the zone is turned ON, lighting devices that are closer to the WaveLinX Area Controller may turn ON earlier than others that are farther away, generating a “popcorn” effect. In addition, if not all lights in a zone respond to zone level changes consistently and it not always the same fixtures have the inconsistent response, this could indicate the need to assign a Point Guard. Assigning a Point Guard(s) may be helpful to bring about a more uniform device response in these scenarios.



Zones that contain Industrial or Outdoor Integrated Sensors will automatically be disabled from DomZone/Point Guard operation unless manually enabled.³⁷⁸ Other WaveLinX PRO lighting control devices such as WaveLinX PRO Ambient and Tilemount sensors, WaveLinX PRO Nodes, and WaveLinX PRO Dimming Switchpacks are automatically enabled for DomZone operation when a Point Guard is assigned.

Point Guard Details

- With zones that contain eight (8) or fewer devices, typically no point guard is necessary. All the devices in the zone will communicate individually with the WaveLinX Area Controller. No Point Guard will be assigned.
- With zones that contain nine (9) or more devices, the WaveLinX Area Controller will automatically select the first device added to the zone to be the Point Guard once the ninth device is added. The Point Guard receives the messages from the WaveLinX Area Controller and then shares the message with the additional devices in the zone. Approximately 30 devices can communicate with the Point Guard.
- The WaveLinX Area Controller automatically selects the first device in its list of paired devices to be the Point Guard if the device has a “good” device status. If the WaveLinX Area Controller senses a problem with the first device, it will assign the next status “good” device as the Point Guard for the communication. It monitors the device status with each communication, changing the Point Guard as needed.

³⁷⁸ If the remote or /wlm page is used to set an Outdoor or Industrial Integrated Sensor to be a Point Guard, the /wlm engine page for the zone will show the device as a Point Guard. However, the point guard will not be active unless the zone is enabled for DomZone function.

- In larger zones, a single Point Guard may not be adequate. In addition, the automatic Point Guard device selected may not be in the ideal location. Typically, the Point Guard should be selected in a central location for the devices being controlled.
- Point Guards can be assigned through the method described in this chapter using the WaveLinX Area Controller webpages or by using the WaveLinX Programming Remote (IR remote works on devices that contain sensors). Using one of these methods, assign more devices to be Point Guards within any zone (max. 5 point guards for the IR remote assignment method), optimizing communications for larger zones (approx. 30 devices per Point Guard). For details on using the WaveLinX Programming Remote for this procedure, refer to the WaveLinX PRO IR Remote User Guide.

Point Guard Best Practices

When dealing with larger zones, there are some best practices to aid with Point Guard assignment.

- During the initial setup of large zones with more than 8 devices, identify the device that is within 150 feet (approx. 45 meters) of the WaveLinX Area Controller and is centrally located in the zone.
- When placing devices into the Zone, place the identified device into the zone first. This will automatically assign it as the Point Guard for the zone once the ninth device is added to the zone. This process may also be referred to as creating a DomZone.

Using the WaveLinX Area Controller Webpage to Assign Point Guards/Create DomZones

This section describes the steps necessary to assign Point Guards/Create DomZones. This includes:

- Enabling the /wlm webpage
- Logging in to the /wlm webpage
- Enable the HBIS DomZone (Industrial and Outdoor Integrated Sensors Only)
- Assign the Point Guard
- Close and Log Out

Step 1: Enabling the /wlm Webpage

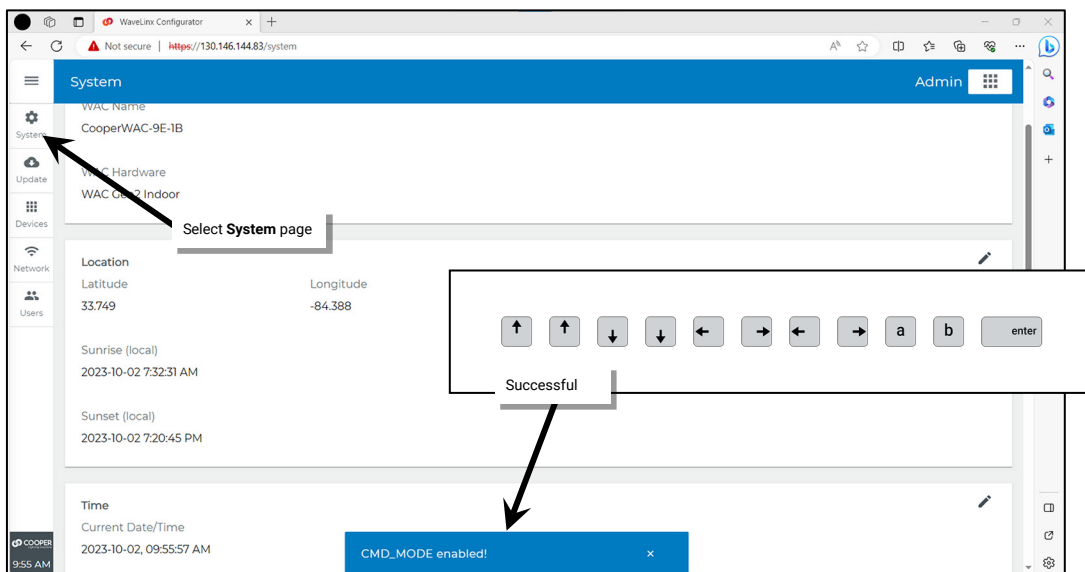
In order to use the WaveLinX Area Controller Webpage for DomZone/Point Guard assignment, access to the /wlm feature must be enabled. Use the steps in this section to enable this feature. Once the /wlm access is enabled, it will remain enabled for two hours or until the WAC reboots, whichever comes first.

To enable /wlm:

- 1: Establish a connection from the computer to the WaveLinX Area Controller webpage as the administrator user.
- 2: Open the **System** page and then, using the keyboard press the following key sequence:



A message should display stating **CMD_MODE enabled!**



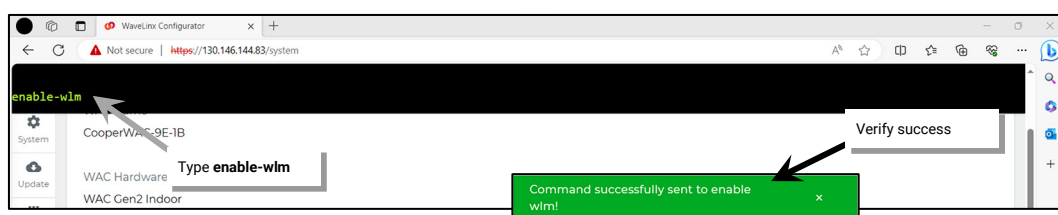
3: Next press **ctrl** followed by **/**.



A command window will open at the top of the screen.



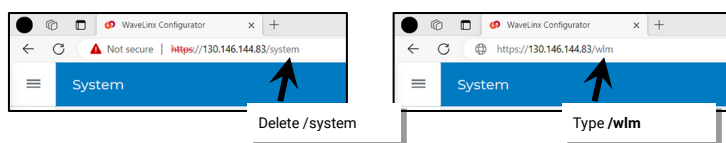
4: Type **enable-wlm** and then press **enter**. Confirm that the message displays that the command was successfully sent.



At this point, the WaveLinX Configurator may automatically sign out the administrator. Continue to the next step.

Step 2: Logging in to the /wlm Webpage

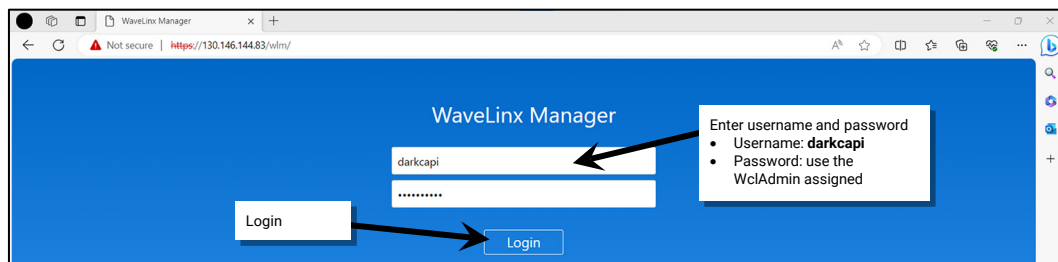
- 1: Establish a connection from the computer to the WaveLinX Area Controller webpage as the administrator user.
- 2: Open the **System** page and then in the web address/URL bar, **delete /system** and **type in /wlm**.



3: When prompted, login to the WaveLinX Manager using the following details:

- Username: **darkcapi**
- Password: *use the password assigned the WclAdmin administrator user*

Click **Login**.



Once logged in, continue to the next step.

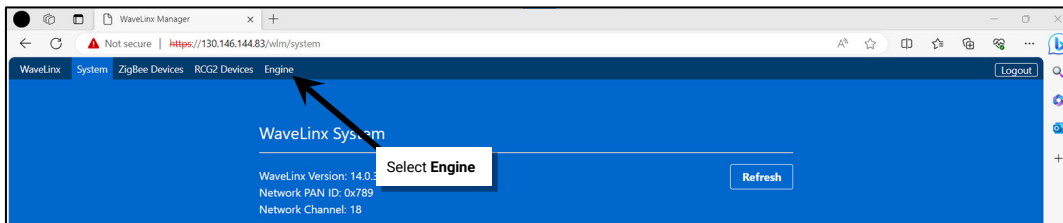
Step 3: Enable the HBIS DomZone (Industrial and Outdoor Integrated Sensors Only)

If the zone only contains WaveLinx PRO Ambient Integrated Sensors, WaveLinx PRO Tilemount Sensors, WaveLinx PRO Nodes, or WaveLinx PRO Dimming Switchpacks, skip this step.

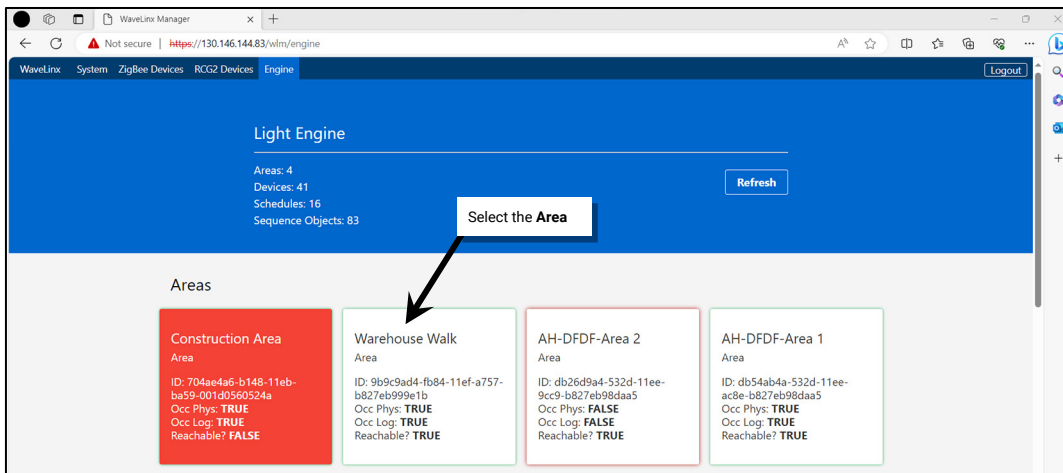
WaveLinx PRO Industrial and Outdoor Integrated Sensors do not have DomZone functionality enabled by default. This capability must be turned ON prior to the assignment of Point Guards if the Zone contains these device types.

To enable the HBIS DomZone:

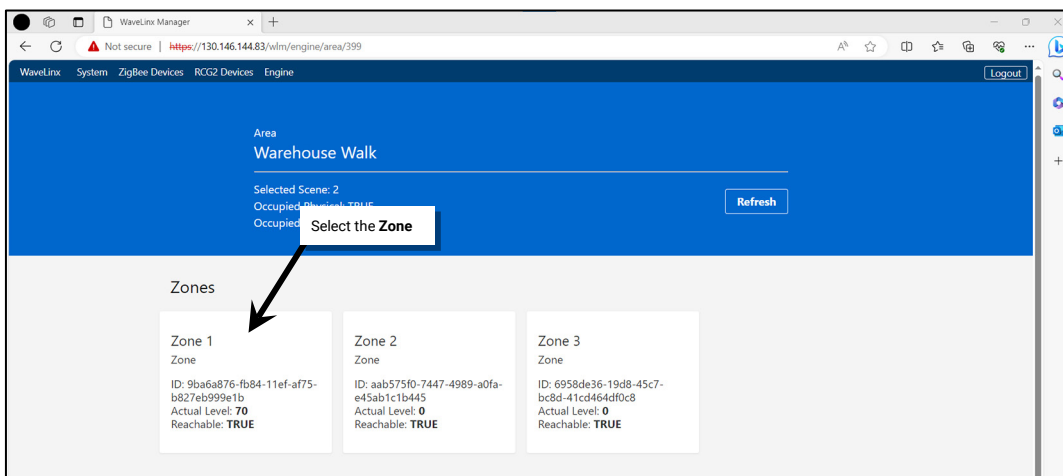
- 1: Establish a connection from the computer to the WaveLinx Area Controller webpage as the administrator user and then login to the /wlm WaveLinx Manager as the darkcapi user.
- 2: Select **Engine** from the /wlm page toolbar.



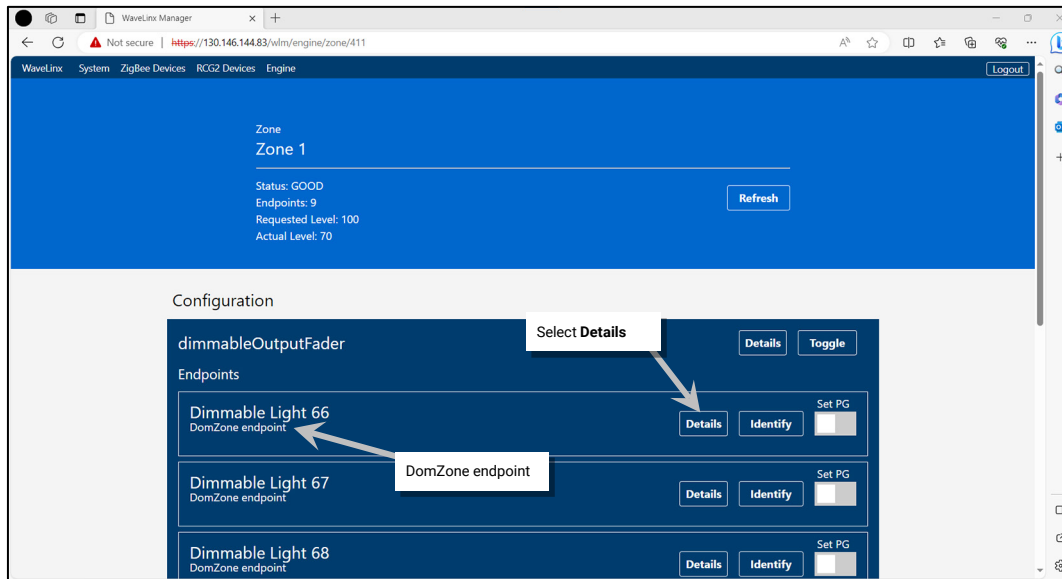
- 3: Click on the **Area** that contains the zone.



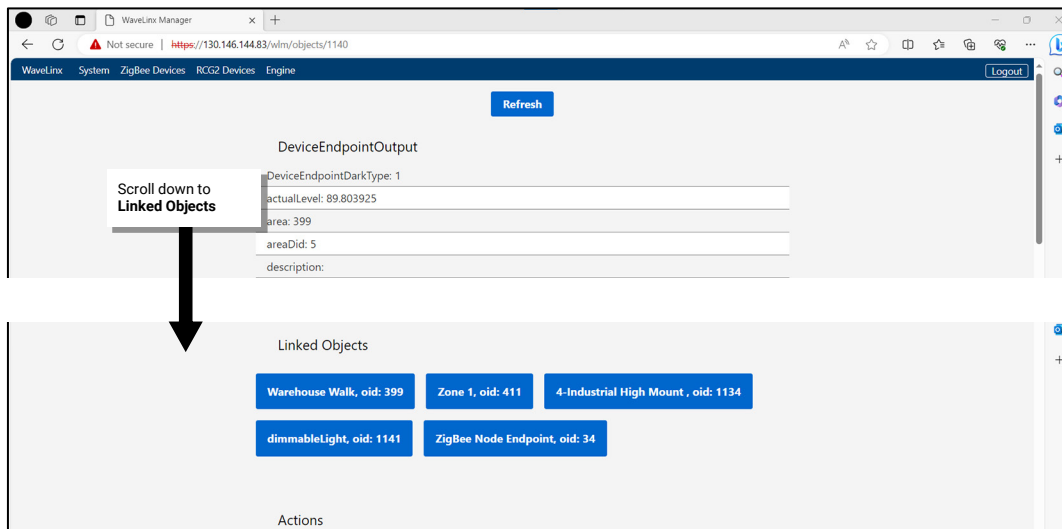
- 4: Click on the desired **Zone**.



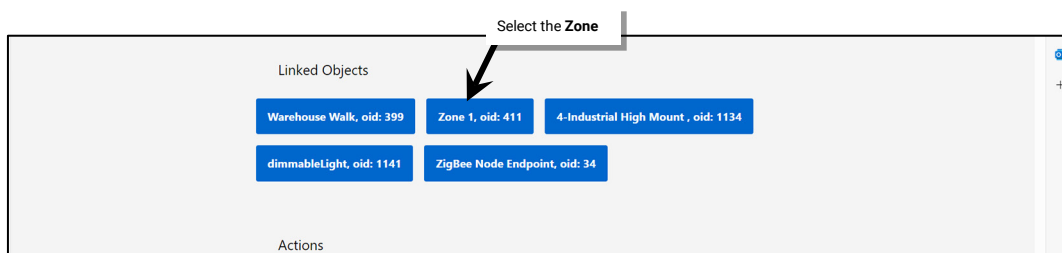
5: On any listed DomZone endpoint, select **Details**.



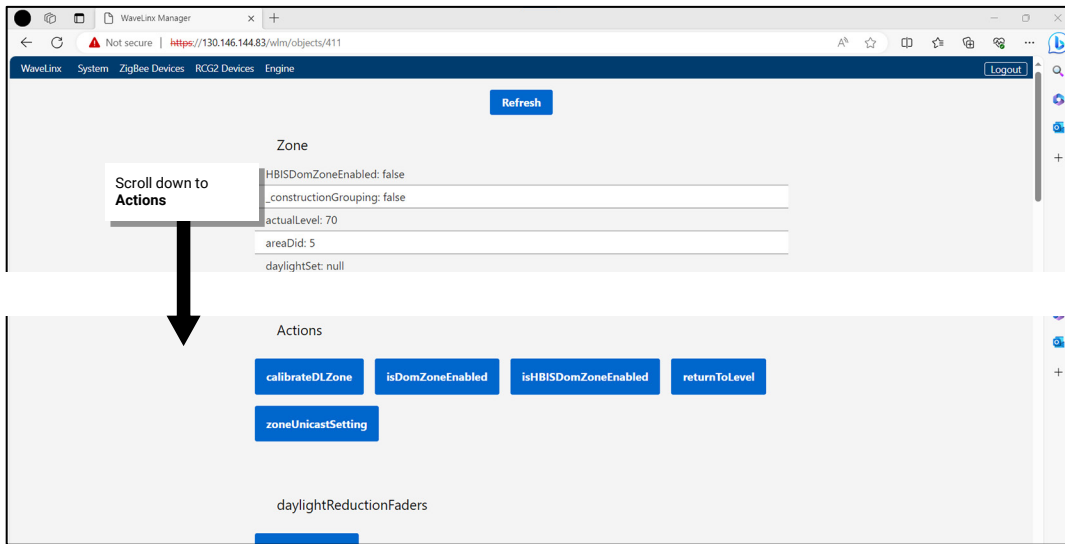
6: Scroll down the **DeviceEndpointOutput** page until the **Linked Objects** are shown.



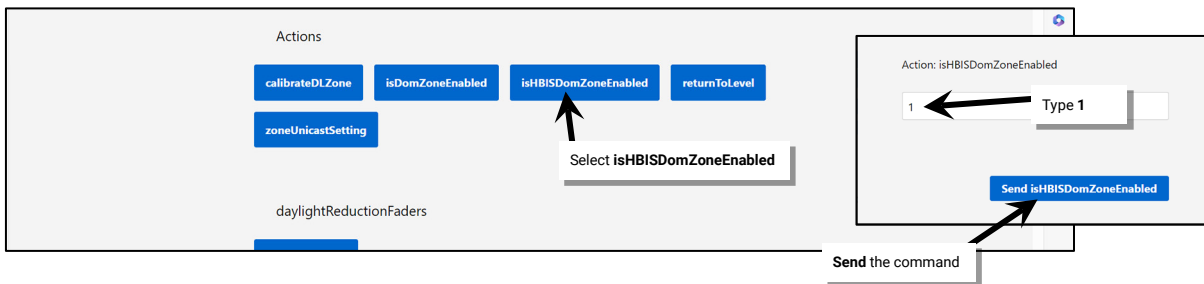
7: Locate and then select the **Zone** name in the **Linked Objects**.



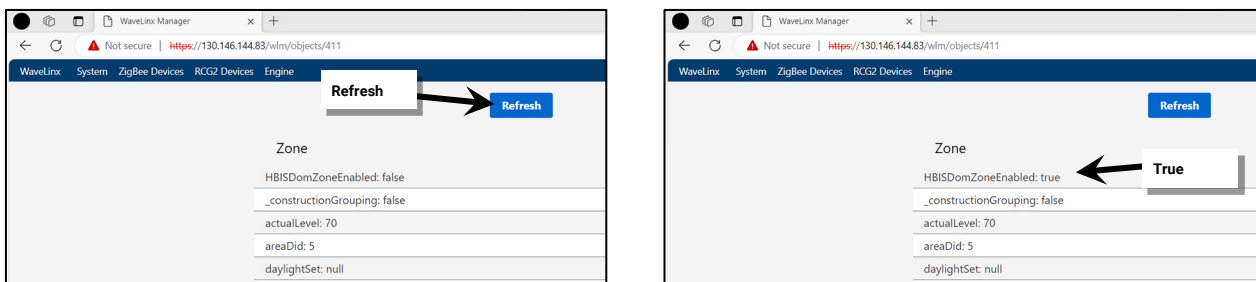
8: Scroll down the **Zone** page until the **Actions** are shown.



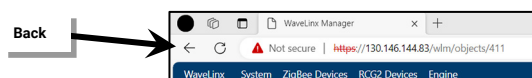
9: Select **isHBISDomZoneEnabled**. In the popup, type **1** in the entry window and then select **Send isHBISDomZoneEnabled**.



10: In the **Zone** page, click **Refresh** and then make sure that the **HBISDomZoneEnabled** property is set to **true**.



11: Tap the browser **back** button to return to the **Zone** or **Area** page and then repeat these steps for other zones in the area that contain Industrial or Outdoor Integrated Sensors. If other areas contain Industrial or Outdoor Integrated Sensors and need Point Guards assigned, repeat for these additional areas.



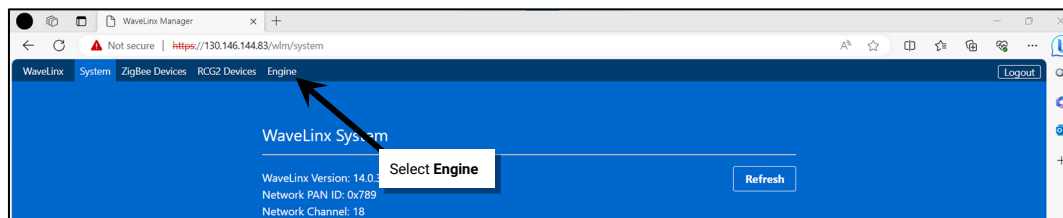
It is easy to lose track of what screen is active due to many screens looking similar in the /wlm WaveLinx Manager. Multiple screens may contain similar buttons. If unsure if the screen is the correct one, return to the Engine menu from the toolbar and then restart these steps.

Step 4: Assign the Point Guard(s)

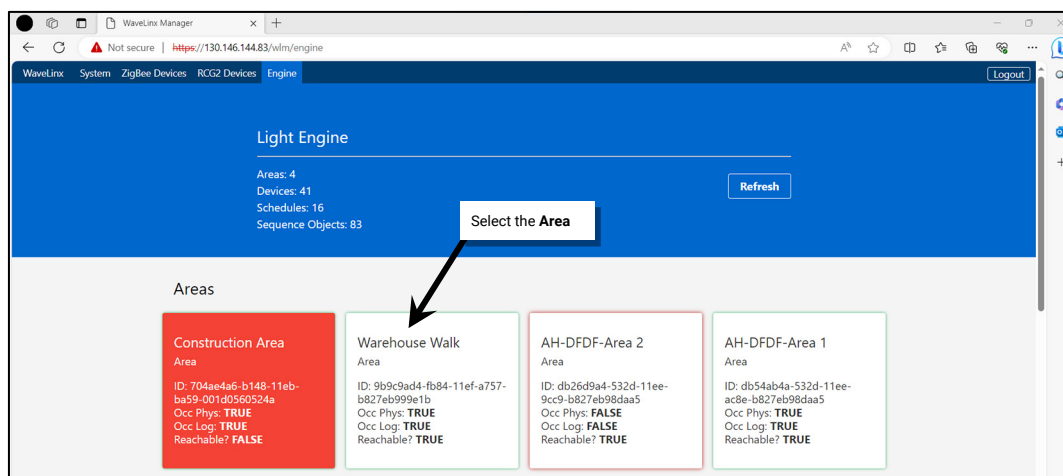
Before beginning this step, identify the best device(s) to be Point Guard(s), ideally within 150 feet (approx. 45 meters) of the WaveLinx Area Controller and centrally located in the zone.

To assign the desired Point Guard(s):

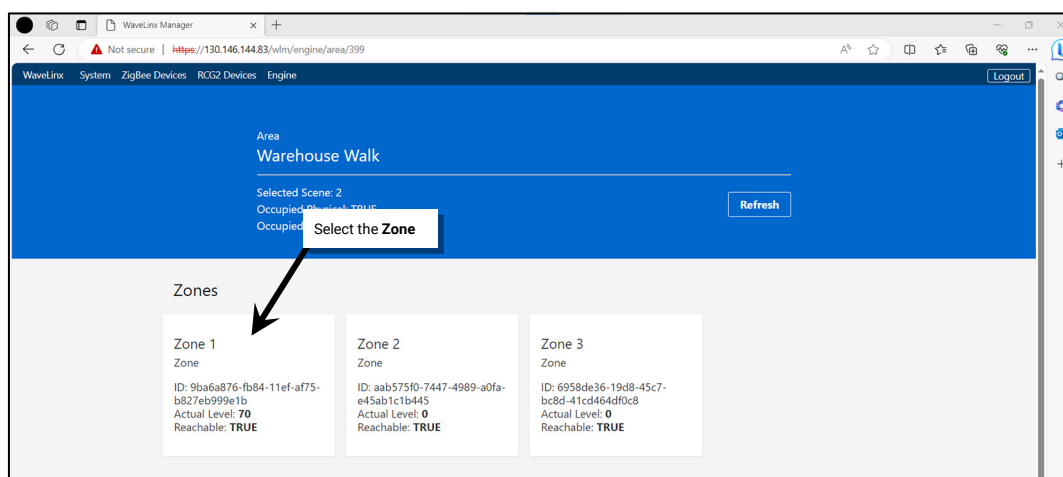
- 1: Establish a connection from the computer to the WaveLinx Area Controller webpage as the administrator user and then login to the /wlm WaveLinx Manager as the darkcapi user.
- 2: Select **Engine** from the /wlm page toolbar.



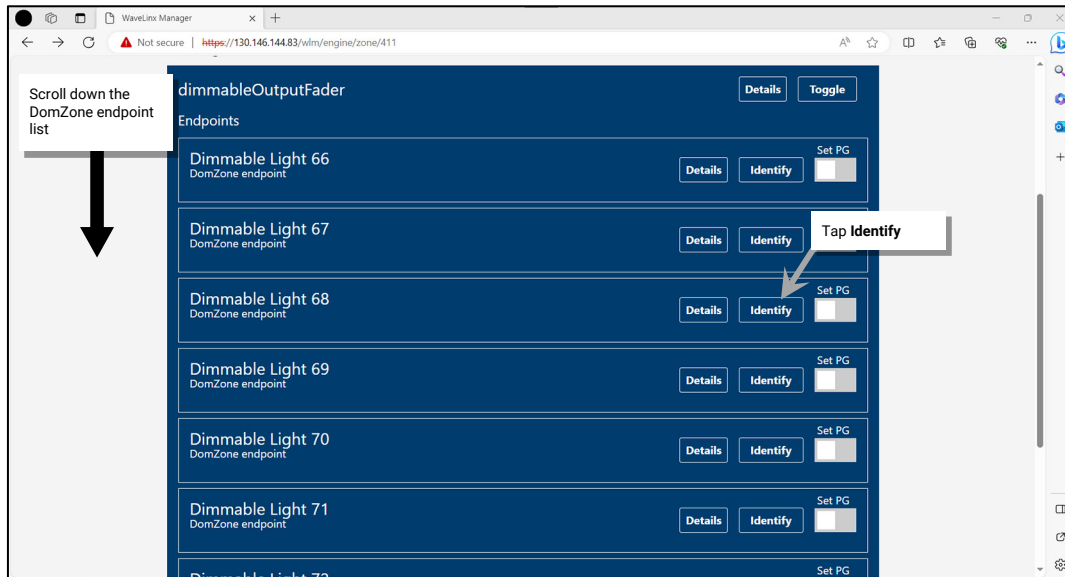
- 3: Click on the **Area** that contains the zone.



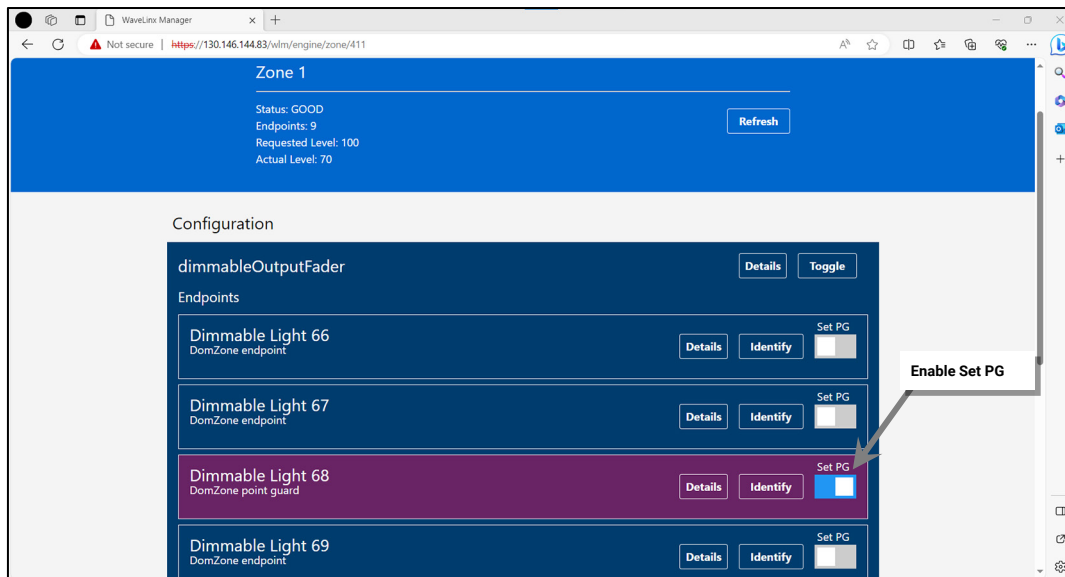
- 4: Click on the desired **Zone**.



- 5: Scroll down the list of DomZone endpoints in the zone. Each endpoint corresponds with a device in the zone. Click **Identify** on the first device to place one of the device in **Blink to Identify** mode. If it is not the desired device, continue to click on **Identify** until the correct device is located.



- 6: In the row for the desired device, click the **Set PG** toggle to **enabled**. The row will turn purple indicating the device is activated as a Point Guard.



- 7: Repeat steps 5 and 6 for additional devices that need to act as Point Guards in this zone.
- 8: If the zone contained more than 8 devices, typically the first device added has been automatically assigned as the Point Guard. If this is not one of the desired devices, click **Set PG** to **disable** the Point Guard for this device.



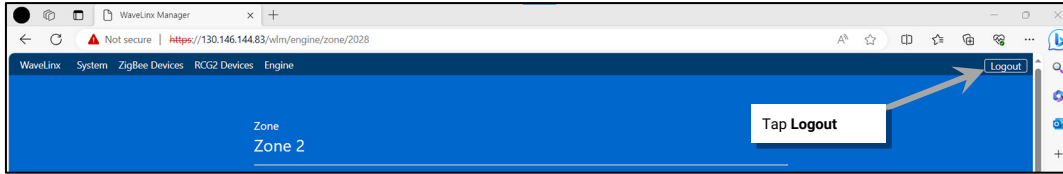
- 9: Repeat these steps for additional zones in the area and then for additional areas as needed.

Step 5: Logout and Close

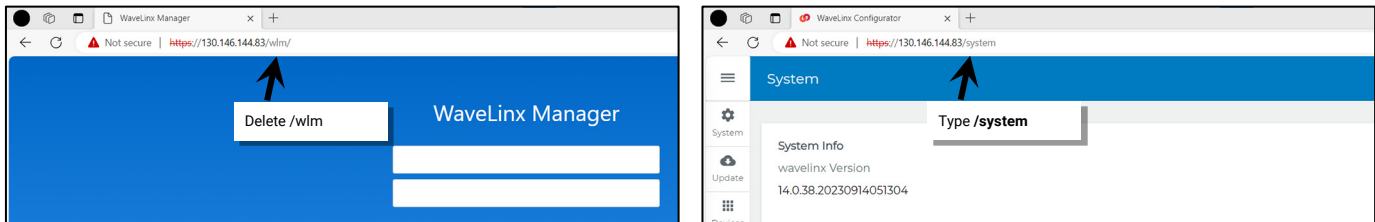
Once the changes are complete, logout and close the WaveLinx Manager and the WaveLinx Area Controller webpages.

To logout and close:

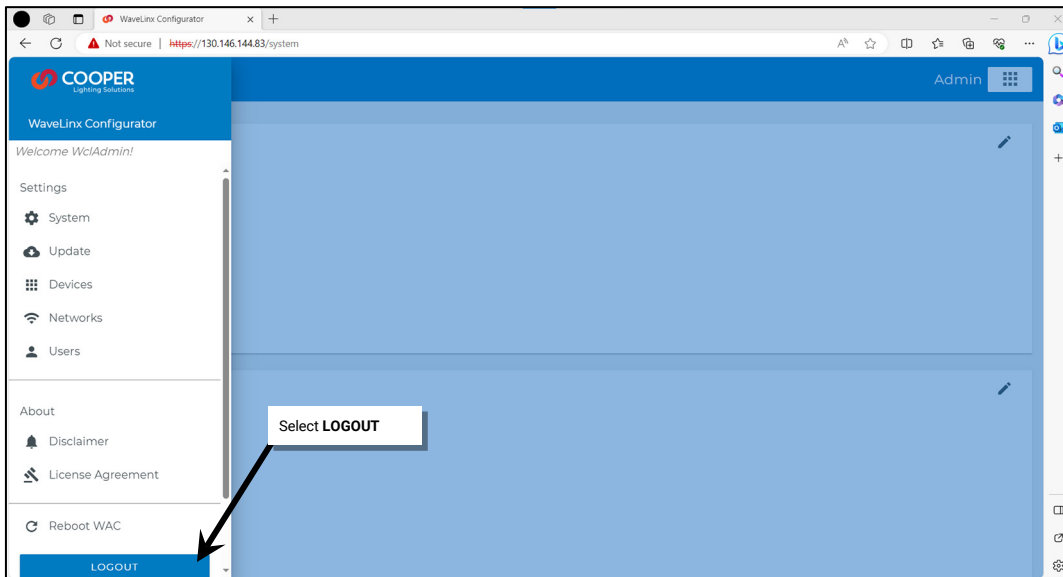
1: At the top of the /wlm webpage, select **Logout**.



2: In the web address/URL bar, delete /wlm and type in **/system**.



3: From the **menu**, select **LOGOUT**.



Close the web browser window.

FCC Statement

• This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

Note: The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

Note: The equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

Warranties and Limitation of Liability

Please refer to www.cooperlighting.com for our terms and conditions.

Garanties et limitation de responsabilité

Veuillez consulter le site www.cooperlighting.com pour obtenir les conditions générales.

Garantías y Limitación de Responsabilidad

Visite www.cooperlighting.com para conocer nuestros términos y condiciones.



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