

C405.2 Mandatory Lighting Controls – shall comply with one of the following:

Lighting Controls Sections C405.2.1 through C405.2.5

Scope: Lighting controls for interior and exterior. Alterations of greater than or equal to 50% of luminaire replacements or greater than 10% of new lighting system luminaires.

Exceptions: Lighting controls are not required in areas:

- Dwelling units
- Designated as security or emergency areas that require continued lighting
- Interior exit stairways, ramps and passageways
- Emergency egress lighting that is normally off

Automatic off controls

C405.2.1

Occupancy sensor controls

- Auto off within 30 min (C405.2.1.1.1)
- Manual turn off (C405.2.1.1.3)

Primary exceptions:

- Dwelling units
- Designated as security or emergency areas that require continued lighting
- Interior exit stairways
- Interior exit ramps and passageways
- Emergency egress lighting that is normally off

Required in:

- Classrooms
- Lecture
- Training rooms
- Conference
- Copy / Print rooms
- Meeting
- Multipurpose rooms
- Lounge
- Break rooms
- Private offices
- Restrooms
- Storage rooms
- Janitorial closets
- Locker rooms
- Enclosed spaces 300sq ft or less
- Warehouse

C405.2.1.1

Manual ON or partial Auto ON

- Manual ON or Auto ON to < 50% power

Primary exceptions:

- Full auto ON is permitted **ONLY** within these spaces
- Public corridors, stairways, restrooms, primary building entrance, lobbies
 - Where manual ON would endanger the safety or security of occupants

C405.2.1.2

Occupant sensors in warehouses

- Automatically reduce power by > 50% when unoccupied
- Independent aisle controls

Primary exceptions:

- Does not need to comply with auto off, manual or partial on or manual Off provisions of C405.2.1.1

C405.2.2

Time-Switch controls

- Requires manual override (C405.2.2.2)
- Override for less than 2hrs
- Override not larger than 5,000 sq ft

Primary exceptions:

- Sleeping units
- Patient care spaces
- Where auto OFF would endanger safety of occupant
- 24 / 7 Lighting
- Shop and lab classrooms
- Mall concourse, auditoriums sales, areas, manufacturing facilities and sports areas allow override to be > than 2hrs and control of < 20,000 sq ft

Required in:

Areas where occupancy sensor is not used, time-switch must be used

Manual controls

C405.2.2.2

Manual Light-reduction controls

- Manually reduce lighting uniformly >50%

Primary exceptions:

- Daylight responsive control zones
- Corridors, lobbies, electrical rooms and mechanical rooms
- One luminaire with < 100W
- Spaces <0.6W per sqft

Required in:

Choose between switching or dimming light reduction controls

C405.2.2.3

Manual controls

- Occupants have ready access
- Controlled lighting is visible

Primary exceptions:

- Remote manual controls are allowed if a lighting status indicator is included.

Required in:

All spaces where required by this code
Choose between switching or dimming manual controls

Daylight responsive controls

C405.2.3

Daylight-responsive controls

- Continuously dim lighting in offices, classrooms, laboratories, library reading rooms
- All other spaces may use automatic dimming or ON / OFF control
- Configured to completely shut off controlled lighting
- Must have calibration access within the controlled space

Primary exceptions:

- Spaces where patient care is directly provided
- Dwelling units and sleeping units
- Specific application lighting (C405.2.4)
- Sidelit zones on 1st floor above grade in Group A-2 and Group M occupancies

Required in:

- Spaces with >150W of general lighting within primary daylight zone (C405.2.3.2)

Specific application controls

C405.2.4

Specific application controls

- Controlled separately from general lighting in the space

Primary exceptions:

- None

Required in:

- Display and accent
- Lighting in display cases
- Supplemental task lighting
- Under cabinet / shelf lighting
- Lighting equipment for sales
- Lighting education or demonstration
- Plant growth
- Food warming

C405.6.1 (ASHRAE 90.1, 8.4.2)

Automatic receptacle control

- At least 50% of receptacles and 25% of feeders to modular furniture shall auto off by either:
- Time schedule - <= 2hr override, control area <= 5,000ft²
- Occ sensor with 20 min off delay
- Automated signal that shall auto off receptacles within 20 min

Primary exceptions:

- Equipment operating 24 / 7
- Where auto control would endanger safety or security

Required in:

- Private offices
- Print / copy rooms
- Individual workstations
- Conference rooms
- Break rooms
- Classrooms

Exterior lighting controls

C405.2.5

Exterior lighting controls

- Exterior lighting automatically turn off when daylight is present
- Façade or landscape lighting shall have automatic off controls based on dawn / dusk and a set open / close time
- All other lighting must be automatically reduced by >30% by
 - No later than midnight to 6AM
 - 1hr after business close to 1hr before open
 - When unoccupied for 15 minutes
- Shall include exterior time-switch control functions

Primary exceptions:

- Emergency lighting that is normally off
- Lighting for health and safety
- Covered vehicle entrances
- Where required for safety, security or eye adaption

Required in:

- Parking lot
- Area lighting
- Site lighting

Additional efficiency options

C406.1

Additional efficiency packages

- Comply with one or more of the following:
 - More efficient HVAC (C406.2)
 - **Reduce lighting power density (C406.3)**
 - Reduce lighting to 90% of Table C405.2.(1)
 - **Enhanced Lighting Controls (C406.4)**
- Onsite supply of renewable energy (C406.5)
- Dedicated outdoor air system (C406.6)
- High-efficiency water heating (C406.7)

C406.4

Enhanced digital lighting controls

- Luminaires shall be continuous dimming
- Luminaires shall be individually addressable
 - Not more than four luminaires in a group allowed
- Not more than eight luminaires in a daylight zone
- Reconfigured by digital addressability
- Load shedding and individual user control in open offices
- Occupancy sensors shall be reconfigured digitally
- Construction documents include sequence of operations
- Functional testing (C408.3)

Functional testing

C408.3

Functional testing

A registered design professional must provide evidence that the lighting control system has been tested, calibrated, adjusted and is in proper working order with the construction documents.

Test requirements:

- Occupant sensor controls (C408.3.1.1)
- Time-switch controls (C408.3.1.2)
- Daylight responsive controls (C408.3.1.3)
- Documentation requirements (C408.3.2)

How Cooper Lighting Solutions control systems help meet Florida - Energy Code (2017):

	DLVP	Room Controller	WaveLinx PRO	WaveLinx Wired	Fifth Light
C405.2.1	●	●	●	●	●
C405.2.1.1	●	●	●	●	●
C405.2.1.2			●	●	●
C405.2.2			●	●	●
C405.2.2.2	●	●	●	●	●
C405.2.2.3	●	●	●	●	●
C405.2.3	●	●	●	●	●
C405.2.4	●	●	●	●	●
C405.6.1	●	●	●	●	●
C405.2.5			●	●	●
C406.4	●		●	●	●

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