

Project		Catalog #		Type	
Prepared by		Notes		Date	



# HALO Commercial

## HCD Professional Direct Mount Commercial Downlighting System

4"/6"/8" • Round/Square • Downlight/Wall Wash

The HCD System offers total flexibility as a modular downlighting system built on a series of Factory preset or Selectable (Lumen/CCT) LED Fixture Kits that easily interchange with a complete fleet of reflectors. Available in both rounds and squares, in multiple sizes and beam distributions. HCD installs-from-below and mounts securely to any retrofit/remodel/new construction ceiling.

**Typical Applications** Healthcare • Hospitality • Education • Mixed Use • Services • Retail

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### Top Product Features

- 4", 6", and 8" install-from-below retrofit/remodel or mounting frames for new construction
- All HCD LED Fixture Kits accommodate any size, shape, or distribution HCD reflector
- Factory Preset or Field-Selectable Lumens: 500 to 5000 lms (nominal)
- Factory Preset or 5-color Field-Selectable CCT: 2700K, 3000K, 3500K, 4000K, 5000K; 90 CRI
- Distributions: Precision-formed round (●) and square (■) reflectors:
  - Medium (●/■)
  - Wide (●)
  - Narrow (● - match HC Series)
- Field-installed wall wash distribution lens kit available
- **Finishes:** Specular, Haze (Semi-Specular), Matte White (paintable), and Matte Black reflectors
- **Dimming:** 0-10V down to 1% (dim-to-off with WaveLinX) in UNV 120-277V; 347V (Canada)
- Emergency battery backup, WaveLinX Wireless PRO/LITE, and Chicago Plenum options available
- Wet location-listed; ENERGY STAR® certified (reference Certified Light Fixture Database for listings)
- L80 at 60,000 hours (80% lumen maintenance at 60,000 hours)
- 5-year warranty

### Product Certification\*



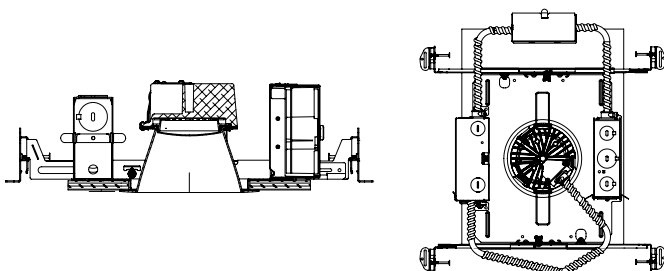
### Product Features



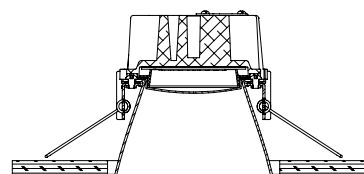
### Control Compatibility



### New Construction



### Direct Mount



### Dimensional and Mounting Details page 32

[Dimensional & Mounting Details](#)

\*T24 and RoHS are self-tested by Cooper Lighting Solutions. Not a third party certification.

## Fixture Kits Overview

HCD LED Fixture Kits fit any 4", 6", or 8", round/square HCD reflector and direct mount to the finished ceiling. HCD Fixture Kits also offer Lumen and CCT Selectability with factory preset versions also available. Select from multiple Fixture Kit configurations including the Standard, Quick Connect, Emergency, WaveLinx, and Chicago Plenum.

- Order LED Fixture Kits and Reflectors separately.
- (Mounting Frames available separately for New Construction installations)
- Easily and securely attach to reflectors with 3 toolless slide locks.
- Downlight installs-from-below through ceiling cutout and securely mounts with springs on the reflector holding the downlight in place

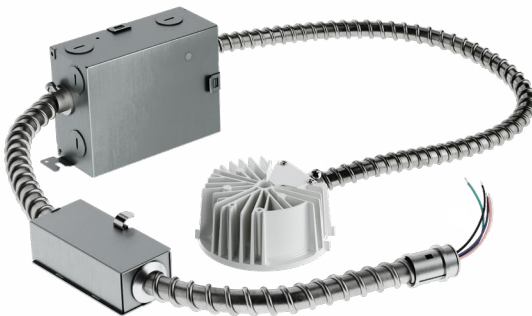
### Junction Box Fixture Kit



### Chicago Plenum Fixture Kit



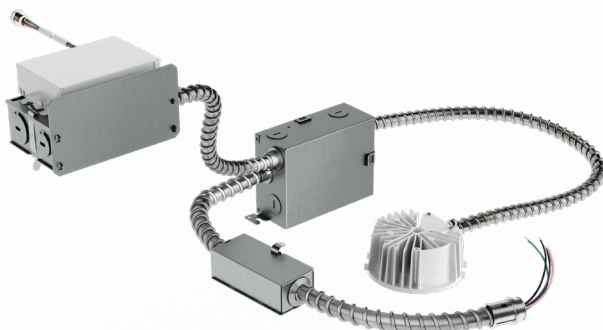
### Quick Connect Fixture Kit



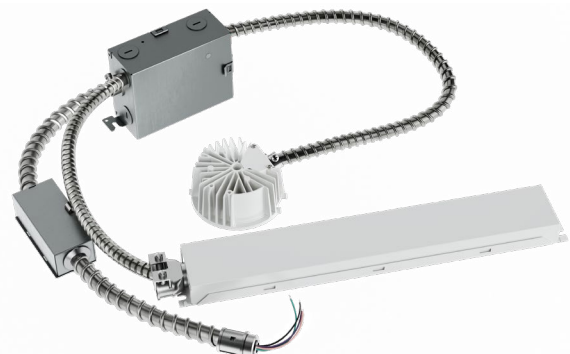
### WaveLinx Wireless Fixture Kit



### Emergency Quick Connect Fixture Kits



EM06 - 6 Watt



EM14 - 14 Watt

## Fixture Kits Overview

Junction Box fixture kits shown with reflectors for example only, order reflectors and fixture kits separately.



Junction Box Fixture Kit with 4" Round Reflector



Junction Box Fixture Kit with 6" Round Reflector



Junction Box Fixture Kit with 8" Round Reflector



Junction Box Fixture Kit with 4" Square Reflector



Junction Box Fixture Kit with 6" Square Reflector



Junction Box Fixture Kit with 8" Square Reflector

## Ceiling Cutouts

Medium & Wide Distribution

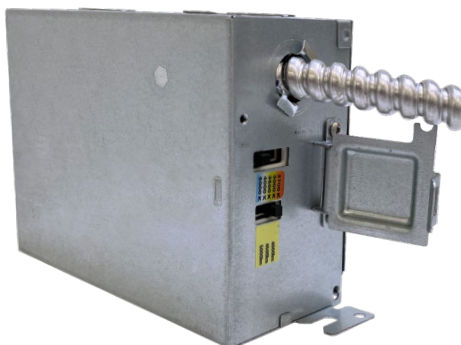
- 4" Round Reflectors = 4.75" Retrofit / 5.00" New
- 6" Round Reflectors = 6.375" Retrofit & New
- 8" Round Reflectors = 8.25" Retrofit & New
- 4" Square Reflectors = 5.00" Retrofit / 5.125" New
- 6" Square Reflectors = 6.625" Retrofit / 6.75" New
- 8" Square Reflectors = 8.50" Retrofit / 8.625" New

## Lumen & CCT Switches

Fixture Kits can be ordered **Lumen and CCT Selectable** or **Factory Preset Lumen/CCT**

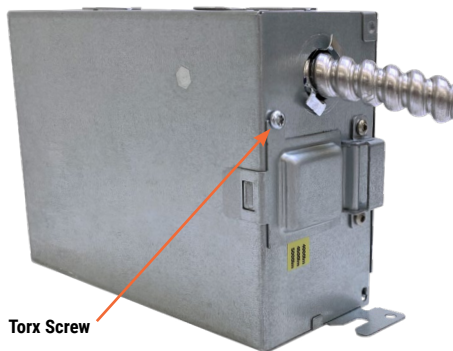
### Selectable Fixture Kits

A hinged snap-latch cover allows for quick access to the Lumen and CCT selector switches while also protecting against accidental adjustments.



### Factory Preset Lumen/CCT Fixture Kits

These kits ship factory set under a fixed cover and labeled at their defined lumen and CCT levels.



Torx Screw



## Reflectors Overview

 Dimensions

Pair LED Fixture Kit with any HCD Reflector.

- Order reflectors and fixture kits separately
- Downlight installs-from-below through ceiling cutout and securely mounts with springs on the reflector holding the downlight in place
- All reflectors available in Specular, Haze (Semi-specular), Matte White (paintable), or Matte Black
- Reflectors come in 3 distributions: Medium, Wide, and Narrow.

The direct-mount installation method requires a precise ceiling cut-out for secure reflector and fixture kit retention, see ceiling cutout table in reflector ordering section.

### Medium Distribution Reflectors

#### 4"/6"/8" • Round/Square

- 4", 6", 8" round and square self-flanged, medium reflectors fit any LED Fixture Kit
- Medium reflectors feature medium 1.0 spacing criteria (SC) and 55° cutoff (nominal, field results may vary by aperture and finish)
- Field-installed rotatable spread lensed wall wash accessory kits available for round & square (sold separately)
- Oversized "Goof" Rings available separately for medium reflectors



### Wide-Shallow Distribution Reflectors

#### 4"/6"/8" • Round

- 4", 6", 8" round self-flanged, ultra-shallow wide distribution reflectors fit any LED Fixture Kit
- Shallow reflector depth for reduced plenum height installations
- Wide distribution features 1.28 spacing criteria and 65° cutoff (nominal, field results may vary by aperture and finish)
- Field-installed round rotatable spread lensed wall-wash accessory kits available (separately)



### Narrow Distribution Reflectors

#### 4"/6"/8" • Round

- 4", 6", 8" round self-flanged, narrow distribution reflectors fit any fixture kit
- Narrow distribution reflectors equivalent with HC Series optical aperture, regression, and flange dimensions (HC4 – 41x; HC6 – 61x; HC8 – 81x)
- Narrow reflectors feature 0.7 spacing criteria and 50° cutoff (nominal values, field results may vary by aperture and finish)
- Field-installed round rotatable spread lensed wall-wash accessory kits available (separately)



## New Construction Mounting Frames Overview

The HCD System is engineered for effortless remodel/retrofit applications and is ideal for new construction applications when used with an HCD New Construction Mounting Frame.

- Available in Round or Square
- 3/8" drywall/plaster collar for easy locating and cutting
- Adjustable bar hangers for T-grid or wood-framed ceilings
- Round aperture cutouts sized for industry-standard hole saws

Nominal Aperture	Catalog Series	Round Cutout (std. hole saw)	Square Cutout	Minimum Grid / Framing Width	Maximum Grid / Framing Width
4" Mounting Frames	HCD4MF	4.75" Retrofit 5.00" New	5.00" Retrofit 5.125" New	10.5"	24.5"
6" Mounting Frames	HCD6MF	6.375" Retrofit & New	6.625" Retrofit 6.750" New		
8" Mounting Frames	HCD8MF	8.25" Retrofit & New	8.500" Retrofit 8.625" New		

### Basic Mounting Frames (No junction box)



#### Mounting Frame only, no junction box

- HCD4MFR, HCD4MFS = 4" Round or Square frames
- HCD6MFR, HCD6MFS = 6" Round or Square frames
- HCD8MFR, HCD8MFS = 8" Round or Square frames

#### Compatible Fixture Kits

- HCDJB Junction Box Fixture Kits  
(Installer supplies mains wiring & connections)

### Junction Box Mounting Frames



#### Mounting Frame w/ Junction Box Only

- HCD4MFRJB, HCD4MFSJB = 4" Round, Square frame
- HCD6MFRJB, HCD6MFSJB = 6" Round, Square frame
- HCD8MFRJB, HCD8MFSJB = 8" Round, Square frame

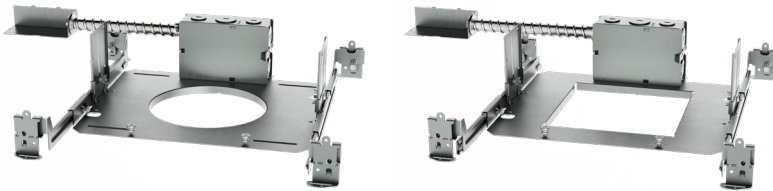
#### Compatible Fixture Kits

- HCDJB Junction Box Fixture Kits  
(Installer supplies mains wiring and connections)
- HCDQC Quick Connect fixture kits with quick connect & snap-in mains whip
- HCDE Emergency fixture kits with EM quick connect & snap-in mains whip\*
- HCDW WaveLinx fixture kits with Wireless Node, quick connect & snap-in mains whip\*

\*Minimum plenum height 7.25" (2x8) with 24" grid/framing width for all Emergency and WaveLinx fixture kits.

## Overview – New Construction Mounting Frames

### Quick Connect Mounting Frames



#### Mounting Frame w/ 5-conductor Quick-Connect

- HCD4MFRQC, HCD4MFSQC = 4" Round, Square frame
- HCD6MFRQC, HCD6MFSQC = 6" Round, Square frame
- HCD8MFRQC, HCD8MFSQC = 8" Round, Square frame

#### Compatible Fixture Kits

- HCDQC Quick connect fixture kits with quick connect & snap-in mains whip
- HCDW WaveLinx fixture kits with Wireless Node, quick connect & snap-in mains whip\*
- HCDE Emergency fixture kits with EM quick connect & snap-in mains whip\*

*\*Minimum plenum height 7.25" (2x8) with 24" grid/framing width for all Emergency and WaveLinx fixture kits.*

### Chicago Plenum Mounting Frames



#### Mounting Frame w/ CCEA compliant Chicago Plenum Junction Box

- HCD4MFRCP, HCD4MFSCP = 4" Round, Square frame
- HCD6MFRCP, HCD6MFSCP = 6" Round, Square frame
- HCD8MFRCP, HCD8MFSCP = 8" Round, Square frame

#### Compatible Fixture Kits

- HCDCP Chicago Plenum fixture kits, CCEA compliant
- Chicago Plenum conduit/conduit connectors by installer, recommend 26" long\*

*\*Minimum plenum height 7.25" (2x8) with 24" grid/framing width for all Chicago Plenum fixture kits.*

## LED Fixture Kits - Order Information

Direct mount = fixture kit + reflector

FIXTURE KITS	Sample Order Numbers:	
Luminaire has two parts ordered separately.	1) <b>Fixture Kit</b>	2) <b>Reflector</b>
Direct mounts to ceiling, mounting frame or retrofit existing fixture.	HCDQCLS510CSD	HCD4TRCWF

Domestic Preferences <sup>(2)</sup>	Fixture Kit	
<b>[Blank]</b> =Standard <b>BAA</b> =Buy American Act <b>TAA</b> =Trade Agreements Act	<b>Junction Box Fixture Kit</b> <b>HCDJB</b> = 4"/6"/8" Junction Box Fixture Kit: LED Engine & Driver on 20" flex conduit (Input wiring and connectors by installer).  Compatible mounting frames: Basic (HCD*MF*) and Junction Box (HCD*MF*JB)	<b>WaveLinX Wireless Fixture Kit w/ Quick Connect</b> <b>HCDW</b> = 4"/6"/8" WaveLinX Wireless Fixture Kit w/ Quick Connect: LED Engine & Driver on 20" flex conduit w/ 5-conductor quick connect on flex conduit & 1/2" snap-fitting for input KO.  Add WaveLinX Wireless option code to model number: WPN (WaveLinX) or WLN (WaveLinX Lite)  Compatible mounting frames: Junction Box (HCD*MF*JB) & Quick Connect (HCD*MF*QC)
	<b>Quick Connect Fixture Kit</b> <b>HCDQC</b> = 4"/6"/8" Quick Connect Fixture Kit: LED Engine & Driver on 20" flex conduit w/ 5-conductor quick connect on flex conduit & 1/2" snap-fitting for input KO.  Compatible mounting frames: Junction Box (HCD*MF*JB) & Quick Connect (HCD*MF*QC)	<b>Chicago Plenum Fixture Kit<sup>(9)</sup></b> <b>HCDCP</b> = 4"/6"/8" Chicago Plenum Fixture Kit: LED Engine & Driver on 18" CCEA compliant FMT and junction box with wiring for power and 10-10V dimming between LED Engine and driver box (Input FMT wiring and connectors to driver box, by others).  Compatible mounting frames: Chicago Plenum (HCD*MF*CP)
	<b>Emergency Fixture Kit</b> <b>HCDE</b> = 4"/6"/8" Emergency Fixture Kit: LED Engine & Driver with Battery Pack on 20" flex conduit w/ 6-conductor quick connect on flex conduit & 1/2" snap-fitting for input KO. Emergency battery with test switch is attached to fixture kit driver box. Add emergency option code to model number: EM06 or EM14 *IEM reflector must be ordered separately for integral emergency. (IEM not available with HCD41TR 4" shallow reflectors)  Compatible mounting frames: Junction Box (HCD*MF*JB) & Quick Connect (HCD4MFRQC)	
<b>Notes</b> (2) Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to <a href="#">DOMESTIC PREFERENCES</a> website for more information.	<b>Notes</b> (5) Chicago Plenum (CP) fixture kits FMT conduit have larger bend radius, requiring deeper plenum height. Minimum plenum height 7.25" (2x8) with 24" grid/framing width for all Chicago Plenum fixture kits.  <b>All - Fixture Kits Notes</b> 1. Fixture Kits are universal for all reflectors. 2. For installation from below a finished ceiling, direct-mount through the ceiling opening. The installer must cutout a precise aperture opening for the appropriate reflector size.	

Selectable Options <sup>(9)</sup>			Driver
<b>Lumen Selectable*</b> <b>LS510</b> = 500/750/1000lm (Preset 1000lm) Type IC, air permeable insulation contact  <b>LS1525</b> = 1500/2000/2500lm (Preset 2500lm) Type Non-IC, insulation 3" spacing  <b>LS3040</b> = 3000/3500/4000lm (Preset 4000lm) Type Non-IC, Marked Spacing, see note below***  <b>LS4050</b> = 4000/4500/5000lm (Preset 5000lm) Type Non-IC, Marked Spacing, see note below***	<b>Factory Preset Lumens**</b> <b>L05</b> = 500 lumen - IC <b>L07</b> = 750 lumen - IC <b>L10</b> = 1000 lumen - IC <b>L15</b> = 1500 lumen - Non-IC <b>L20</b> = 2000 lumen - Non-IC <b>L25</b> = 2500 lumen - Non-IC <b>L30</b> = 3000 lumen - Non-IC*** <b>L35</b> = 3500 lumen - Non-IC*** <b>L40</b> = 4000 lumen - Non-IC*** <b>L41</b> = 4000 lumen - Non-IC*** <b>L45</b> = 4500 lumen - Non-IC*** <b>L50</b> = 5000 lumen - Non-IC***	<b>Color Selectable*</b> <b>CS</b> = 90CRI, selectable 2700K-3000K-3500K-4000K-5000K (Preset at 3500K)  <b>Factory Preset CCT**</b> <b>927</b> = 90CRI, 2700K <b>930</b> = 90CRI, 3000K <b>935</b> = 90CRI, 3500K <b>940</b> = 90CRI, 4000K <b>950</b> = 90CRI, 5000K	<b>D</b> = Dimmable, UNV 120-277V, 50/60Hz 0-10V 1%-100% dimming at 120-277V on 0-10V controls. Compatible with WaveLinX Wireless dim-to-off functionality.  <b>Canada Option</b> <b>D347</b> = Dimmable 347VAC 50/60Hz 0-10V 1%-100% dimming. Available on HCDQC fixture kits only. Canada only. <sup>(1)</sup>
<b>Notes</b> (0) Selectable Lumen and Selectable CCT must be specified together - Selectable example: LS510, CS Factory Preset Lumen and CCT must be specified together - Fixed Preset example: L05, 935  *Field-selected switch settings by installer accessed in hinged snap-latch cover over selectable switches, protects lumen and CCT settings yet allows for quick changes. OR ** Factory preset individual switch settings secured under fixed cover. Torx screw on cover secures presets yet allows for re-set access if needed. Factory label notes preset lumen and CCT. ***3000/3500/4000, 4000/4500/5000lm Non-IC, Marked Spacing - Marked Spacing Center to Center of Adjacent Luminaires = 36" / - Center of Luminaire to Building Member = 18" / - Minimum overhead = 0.5"			<b>Notes</b> (1) Not available with CP models

Factory Options	Accessories
<b>Emergency Options</b> (HCDE Emergency Fixture Kit Option) <b>EM06</b> = 6-watt self-test emergency battery with test switch for remote or integral test. Remote switchplate included, back box by others. Integral reflector order separately. Use with "D" driver only. Option only with HCDE fixture kits. <sup>(1)(3)(4)</sup> <b>EM14</b> = 14-watt self-test emergency battery with test switch for remote or integral test. Remote switchplate included, back box by others. Integral reflector order separately. Use with "D" driver only. Option only with HCDE fixture kits. <sup>(1)(3)(4)</sup>  <b>WaveLinX Options</b> (HCDW WaveLinX Fixture Kit Option) <b>WPN</b> = WaveLinX PRO Wireless Node & Power Pack. Add WPN code to HCDW fixture kits. Option only with HCDW fixture kits. <sup>(3)(4)</sup> <b>WLN</b> = WaveLinX LITE Wireless Node & Power Pack. Add WLN code to HCDW fixture kits. Option only with HCDW fixture kits. <sup>(3)(4)</sup>	<b>Extension Cables</b> Flex conduit w/ 5-conductor quick connects on each end. Extend connection between fixture kit and new construction frame. <b>HCDX06</b> = 6 ft. Extension Cable <b>HCDX12</b> = 12 ft. Extension Cable <b>HCDX20</b> = 20 ft. Extension Cable  Use with HCD4MFQC, HCD6MFQC & HCD8MFQC Quick Connect Mounting Frames only. Use with HCD468QC*, HCD468W* Quick Connect Fixture Kits only
<b>Notes</b> (1) Not available with CP models (3) Not available with D347 (347V models) (4) Use with "D" driver	<b>Notes</b> *Extension cables not compatible with HCD468E* emergency or HCD468CP* Chicago Plenum fixture kits If using the WaveLinX models, the dimming wires in the quick connect and the building junction box should not be connected.

## MOUNTING FRAMES - Order Information

New construction luminaire = mounting frame + fixture kit + reflector

FIXTURE KITS	Sample Order Numbers:		
New construction: Three required parts ordered separately.	1) Mounting Frame	2) Fixture Kit	3) Reflector
Mounting frames feature plaster lip for ease in locating in finished ceiling.	HCD4MFRQC	HCDQCLS510CSD	HCD4TRCWF

Domestic Preferences <sup>(2)</sup>	Accessories	
<p>[Blank]=Standard BAA=Buy American Act TAA=Trade Agreements Act</p>	<p><b>Basic New Construction Mounting Frames</b></p> <p><b>HCD4MFR</b> = 4" Round mounting frame <b>HCD4MFS</b> = 4" Square mounting frame Ceiling cut-outs: Round 5.00" / Square 5.125"</p> <p><b>HCD6MFR</b> = 6" Round mounting frame <b>HCD6MFS</b> = 6" Square mounting frame Ceiling cut-outs: Round 6.375" / Square 6.75"</p> <p><b>HCD8MFR</b> = 8" Round mounting frame <b>HCD8MFS</b> = 8" Square mounting frame Ceiling cut-outs: Round 8.25" / Square 8.625"</p>	<p><b>Description</b> Basic mounting frame only, no junction box • Installer supplies mains wiring &amp; connections to HCDJB* Fixture Kit driver box • Thumb screws on frame for securing Fixture kit driver-box</p> <p><b>Compatible Fixture Kits</b> HCDJB* fixture kits for installer wiring (input flex and wiring by others)</p>
	<p><b>Junction Box New Construction Mounting Frames</b></p> <p><b>HCD4MFRJB</b> = 4" Round mounting frame <b>HCD4MFSJB</b> = 4" Square mounting frame Ceiling cut-outs: Round 5.00" / Square 5.125"</p> <p><b>HCD6MFRJB</b> = 6" Round mounting frame <b>HCD6MFSJB</b> = 6" Square mounting frame Ceiling cut-outs: Round 6.375" / Square 6.75"</p> <p><b>HCD8MFRJB</b> = 8" Round mounting frame <b>HCD8MFSJB</b> = 8" Square mounting frame Ceiling cut-outs: Round 8.25" / Square 8.625"</p>	<p><b>Description</b> Mounting frame with Trade-Size Junction box • Installer supplies mains wiring &amp; connections to mounting frame trade-size junction box • Installer makes mains connections from junction box to snap-in conduit connector included on the HCDQC*, HCDE*, HCDW* Fixture Kits</p> <p><b>Compatible Fixture Kits</b> HCDJB* fixture kits for Installer supplied wiring &amp; connections (flex and wiring from mounting frame junction box to fixture kit driver box) HCDQC*, HCDW*, HCDE* fixture kits have quick-connect flex wiring, allow connection of 1/2" KO snap-fitting on the tail of quick-connect flex (snap-fitting installs to mounting frame junction box)</p>
	<p><b>Quick Connect New Construction Mounting Frames</b></p> <p><b>HCD4MFRQC</b> = 4" Round mounting frame <b>HCD4MFSQC</b> = 4" Square mounting frame Ceiling cut-outs: Round 5.00" / Square 5.125"</p> <p><b>HCD6MFRQC</b> = 6" Round mounting frame <b>HCD6MFSQC</b> = 6" Square mounting frame Ceiling cut-outs: Round 6.375" / Square 6.75"</p> <p><b>HCD8MFRQC</b> = 8" Round mounting frame <b>HCD8MFSQC</b> = 8" Square mounting frame Ceiling cut-outs: Round 8.25" / Square 8.625"</p>	<p><b>Description</b> Mounting frame w/ Quick Connect flex on the frame junction box. Quick connector has 5-conductor plug-ins for power and 10-10V dimming. • Installer plugs quick connectors to 5-conductor quick connectors on HCDQC* and HCDW* Fixture kits.</p> <p><b>Compatible Quick Connect Fixture Kits</b> HCDQC*, HCDW* quick connect fixture kits, with 5-conductor quick connect to mate with quick connect on mounting frame flex (fixture kit end whip on 1/2" KO snap-fitting is not used)</p>
	<p><b>Chicago Plenum New Construction Mounting Frames</b></p> <p><b>HCD4MFRCP</b> = 4" Round mounting frame <b>HCD4MFSCP</b> = 4" Square mounting frame Ceiling cut-outs: Round 5.00" / Square 5.125"</p> <p><b>HCD6MFRCP</b> = 6" Round mounting frame <b>HCD6MFSCP</b> = 6" Square mounting frame Ceiling cut-outs: Round 6.375" / Square 6.75"</p> <p><b>HCD8MFRCP</b> = 8" Round mounting frame <b>HCD8MFSCP</b> = 8" Square mounting frame Ceiling cut-outs: Round 8.25" / Square 8.625"</p>	<p><b>Description</b> Chicago Plenum mounting frame with CCEA compliant Trade-Size Junction box • Installer supplies wiring and connections to HCDCP* Fixture Kits • CCEA compliant FMT wiring and connectors to mains junction box on frame and into fixture kit driver box are by installer</p> <p><b>Compatible Chicago Plenum Fixture Kits</b> HCDCP* Chicago Plenum fixture kits, CCEA compliant (Does not include CCEA FMT wiring and connectors for power and 10-10V dimming)</p>
<p><b>Notes</b></p> <p>(2) Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to <a href="#">DOMESTIC PREFERENCES</a> website for more information.</p>	<p><b>New Construction Mounting Frame Notes:</b></p> <ul style="list-style-type: none"> <li>• Type-IC with low-lumen fixture kits 500-750-1000lm</li> <li>• Type Non-IC with mid-lumen 1500-2000-2500lm</li> <li>• Type Non-IC, Marked Spacing with mid/high-lumen 3000-3500-4000lm and high-lumen 4000-4500-5000lm fixture kits (36" center-to-center, 18" center to building member, 0.5" minimum overhead spacing).</li> <li>• Chicago Plenum (CP) new construction mounting frames are CCEA compliant with pre-installed J-box for mains input, and Type Non-IC rated per CCEA</li> </ul>	<p><b>Notes</b></p>



## Reflectors - Medium Distribution Round & Square

>New construction luminaire = mounting frame + fixture kit + reflector

>Direct mount / Retrofit luminaire = fixture kit + reflector

Medium Reflectors – New Construction	Sample Order Numbers:			
New construction: Three parts ordered separately	1) Mounting Frame	2) Fixture Kit	3) Medium Reflector	Accessory (+ Medium Wall Wash)
+ Accessory: Lens Wall Wash Kit – field installed	HCD4MFRQC	HCDQCLS510CSD	HCD4TRCWF	HCD4TRLWW

Medium Reflectors – Direct Mount / Retrofit	Sample Order Numbers:			
Direct mount: Two parts ordered separately	1) Fixture Kit	2) Medium Reflector	Accessory (+ Medium Wall Wash)	
+ Accessory: Lens Wall Wash Kit – field installed	HCDQCLS510CSD	HCD4TRCWF	HCD4TRLWW	

Domestic Preferences <sup>(2)</sup>	Medium Reflectors	Type	Finish	Emergency	Wall Wash Accessory Kits (Field Installed - Order Separately)
<b>[Blank]</b> =Standard <b>BAA</b> =Buy American Act <b>TAA</b> =Trade Agreements Act	<b>HCD4T</b> = 4" medium distribution reflector <b>HCD6T</b> = 6" medium distribution reflector <b>HCD8T</b> = 8" medium distribution reflector	<b>R</b> = Round <b>SQ</b> = Square	<b>C</b> = Specular Clear <b>CWF</b> = Specular Clear / White Flange <b>H</b> = Haze (Semi-specular) <b>HWF</b> = Haze (Semi-specular) / White Flange <b>MW</b> = Matte White (paintable) <b>MB</b> = Matte Black	<b>IEM</b> = Reflector for use with integral emergency fixture kits only. Provides access hole for emergency test switch, if integral switch is desired. Use with HCDE emergency fixture kits.	<b>HCD4TRLWW</b> = 4" Round Lensed Wall Wash Kit <b>HCD6TRLWW</b> = 6" Round Lensed Wall Wash Kit <b>HCD8TRLWW</b> = 8" Round Lensed Wall Wash Kit <b>HCD4TSQLWW</b> = 4" Square Lensed Wall Wash Kit <b>HCD6TSQLWW</b> = 6" Square Lensed Wall Wash Kit <b>HCD8TSQLWW</b> = 8" Square Lensed Wall Wash Kit
<b>Notes</b>  (2) Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to <a href="#">DOMESTIC PREFERENCES</a> website for more information.	<b>Notes</b> <b>Reflector notes:</b> • 4", 6", 8" round and square work with all fixture kits • Medium reflectors compatible with HCD4MFR*, HCD6MFR*, HCD8MFR* round and HCD4MFS*, HCD6MFS*, HCD8MFS* mounting frames • Reflectors attach to fixture kits install from below the ceiling opening with integral mousetrap springs • Maximum ceiling thickness 1.5" • Wall wash kits are accessories for field installation • Direct-mount requires a precise aperture cutout • 4" Round = 4.75" Retrofit / 5.00" New • 4" Square = 5.00" Retrofit / 5.125" New • 6" Round = 6.375" Retrofit & New • 6" Square = 6.625" Retrofit / 6.75" New • 8" Round = 8.25" Retrofit & New • 8" Square = 8.50" Retrofit / 8.625" New	<b>Notes</b>	<b>Notes</b>	<b>Notes</b> <b>IEM Notes:</b> Emergency battery with test switch is attached to fixture kit. Add emergency suffix code to HCDE model number: EM06 or EM14 *IEM reflector ordered separately *HCD4T 4" IEM round and square trims maximum ceiling thickness up to 1.25" to allow integral (IEM) switch clearance in IEM reflector.	<b>Notes</b>  Wall wash kits are not available for IEM reflectors.  For BAA/TAA wall wash option, add "WW" to the reflector catalog (example: TAA-HCD42TRCWW).

## Oversize "Goof" Rings - For use with Medium Distribution Reflectors

Oversize Goof Rings – New Construction	Sample Order Numbers:			
New construction: Three parts ordered separately	1) Mounting Frame	2) Fixture Kit	3) Medium Reflector	Accessory (+ Medium Goof Ring)
+ Accessory: Oversize Ring – field installed	HCD4MFRQC	HCDQCLS510CSD	HCD4TRCWF	HCD4GRC

Oversize Goof Rings – Direct Mount	Sample Order Numbers:			
Direct mount: Two parts ordered separately	1) Fixture Kit	2) Medium Reflector	Accessory (+ Medium Goof Ring)	
+ Accessory: Lens Wall Wash Kit – field installed	HCDQCLS510CSD	HCD4TRCWF	HCD4GRC	

Domestic Preferences <sup>(2)</sup>	Oversize Medium "Goof" Ring	Type	Finish
<b>[Blank]</b> =Standard <b>BAA</b> =Buy American Act <b>TAA</b> =Trade Agreements Act	<b>HCD4G</b> = 4" Goof Ring for Medium Reflectors <i>Round - 4.75" MIN ceiling opening 6.25" MAX ceiling opening, 7.25" OD</i> <i>Square - 5.125" MIN square ceiling opening 6.25" MAX opening, 7.375" x 7.375" OD</i>	<b>R</b> = Round <b>SQ</b> = Square	<b>C</b> = Specular Clear <b>H</b> = Haze (Semi-specular) <b>MW</b> = Matte White (paintable) <b>MB</b> = Matte Black
	<b>HCD6G</b> = 6" Goof Ring for Medium Reflectors <i>Round - 6.50" MIN ceiling opening 7.875" MAX ceiling opening, 8.875" OD</i> <i>Square - 6.75" MIN square ceiling opening 7.875" MAX opening, 9.00" x 9.00" OD</i>		
	<b>HCD8G</b> = 8" Goof Ring for Medium Reflectors <i>Round - 8.25" MIN ceiling opening 9.75" MAX ceiling opening, 10.75" OD</i> <i>Square - 8.625" MIN ceiling opening 9.75" MAX opening, 10.875" x 10.875" OD</i>		
<b>Notes</b>  (2) Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to <a href="#">DOMESTIC PREFERENCES</a> website for more information.	<b>Notes</b>	<b>Notes</b>	<b>Notes</b>

## Reflectors - Wide (Shallow) Distribution Round

>New construction luminaire = mounting frame + fixture kit + reflector

>Direct mount / Retrofit luminaire = fixture kit + reflector

Wide (Shallow) Reflector – New Construction	Sample Order Numbers:			
New construction: Three parts ordered separately	1) Mounting Frame	2) Fixture Kit	3) Shallow Reflector	Accessory (+ Shallow Wall Wash)
+ Accessory: Lens Wall Wash Kit – field installed	HCD4MFRQC	HCDQCLS510CSD	HCD41TRC	HCD41TRLWW

Wide (Shallow) Reflector – Direct Mount / Retrofit	Sample Order Numbers:			
Direct mount: Two parts ordered separately	1) Fixture Kit	2) Shallow Reflector	Accessory (+ Shallow Wall Wash)	
+ Accessory: Lens Wall Wash Kit – field installed	HCDQCLS510CSD	HCD41TRC	HCD41TRLWW	

Domestic Preferences <sup>(2)</sup>	Wide (Shallow) Reflectors	Type	Finish	Emergency	Wall Wash Accessory Kits (Field Installed - Order Separately)
[Blank]=Standard BAA=Buy American Act TAA=Trade Agreements Act	HCD41T = 4" Wide (Shallow) Reflector* HCD61T = 6" Wide (Shallow) Reflector HCD81T = 8" Wide (Shallow) Reflector	R = Round	C = Specular Clear CWF = Specular Clear / White Flange H = Haze (Semi-specular) HWF = Haze (Semi-specular) / White Flange MW = Matte White (paintable) MB = Matte Black	IEM = Reflector for use with integral emergency fixture kits only. Provides access hole for emergency test switch, if integral switch is desired. Use with HCDE emergency fixture kits.	HCD41TRLWW = 4" Wide (Shallow) Round Lensed Wall Wash Kit HCD61TRLWW = 6" Wide (Shallow) Round Lensed Wall Wash Kit HCD81TRLWW = 8" Wide (Shallow) Round Lensed Wall Wash Kit
<b>Notes</b> (2) Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to <a href="#">DOMESTIC PREFERENCES</a> website for more information.	<b>Notes</b> <b>Reflector notes:</b> • Wide (Shallow) reflectors work with all fixture kits • Compatible with HCD4MFR*, HCD6MFR*, HCD8MFR* round aperture mounting frames • Reflectors attach to fixture kits and install from below the ceiling opening with integral mousetrap springs • Maximum ceiling thickness 1.5" • Wall wash kits are accessories for field installation • Direct-mount requires a precise aperture cutout • 4" Round = 4.75" Retrofit / 5.00" New • 6" Round = 6.375" Retrofit & New • 8" Round = 8.25" Retrofit & New	<b>Notes</b>	<b>Notes</b>	<b>Notes</b> <b>IEM Notes:</b> Emergency battery with test switch is attached to fixture kit. Add emergency suffix code to HCDE model number: EM06 or EM14 *IEM reflector ordered separately; IEM not available with HCD41TR shallow reflectors	<b>Notes</b> Wall wash kits are not available for IEM reflectors.  For BAA/TAA wall wash option, add "WW" to the reflector catalog (example: TAA-HCD42TRCWW).

## Reflectors - Narrow Distribution Round

(Narrow distribution round reflectors equivalent with HC4-6-8 series 41x-61x-81x reflector dimensions)

>New construction luminaire = mounting frame + fixture kit + reflector

>Direct mount / Retrofit luminaire = fixture kit + reflector

Narrow Reflectors – New Construction	Sample Order Numbers:			
New construction: Three parts ordered separately	1) Mounting Frame	2) Fixture Kit	3) Narrow Reflector	Accessory (+ Narrow Wall Wash)
+ Accessory: Lens Wall Wash Kit – field installed	HCD4MFRQC	HCDQCLS510CSD	HCD42TRC	HCD42TRLWW

Narrow Reflectors – Direct Mount / Retrofit	Sample Order Numbers:			
Direct mount: Two parts ordered separately	1) Fixture Kit	2) Narrow Reflector	Accessory (+ Narrow Wall Wash)	
+ Accessory: Lens Wall Wash Kit – field installed	HCDQCLS510CSD	HCD42TRC	HCD42TRLWW	

Domestic Preferences <sup>(2)</sup>	Narrow Reflectors	Type	Finish	Emergency	Wall Wash Accessory Kits (Field Installed - Order Separately)
[Blank]=Standard BAA=Buy American Act TAA=Trade Agreements Act	HCD42T = 4" Narrow distribution Reflector* HCD62T = 6" Narrow distribution Reflector HCD82T = 8" Narrow distribution Reflector	R = Round	C = Specular Clear CWF = Specular Clear / White Flange H = Haze (Semi-specular) HWF = Haze (Semi-specular) / White Flange MW = Matte White (paintable) MB = Matte Black	IEM = Reflector for use with integral emergency fixture kits only. Provides access hole for emergency test switch, if integral switch is desired. Use with HCDE emergency fixture kits.	HCD42TRLWW = 4" Narrow Lensed Wall Wash Kit HCD62TRLWW = 6" Narrow Lensed Wall Wash Kit HCD82TRLWW = 8" Narrow Lensed Wall Wash Kit
<b>Notes</b> (2) Only product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to <a href="#">DOMESTIC PREFERENCES</a> website for more information.	<b>Notes</b> <b>Reflector notes:</b> • Narrow distribution reflectors work with all fixture kits • Compatible with HCD4MFR*, HCD6MFR*, HCD8MFR* round aperture mounting frames • Reflectors attach to fixture kits and install from below the ceiling opening with integral mousetrap springs • Maximum ceiling thickness 1.5" • Wall wash kits are accessories for field installation • Direct-mount requires a precise aperture cutout • 4" Round = 4.75" Retrofit / 5.00" New • 6" Round = 6.375" Retrofit & New • 8" Round = 8.25" Retrofit & New	<b>Notes</b>	<b>Notes</b>	<b>Notes</b> <b>IEM Notes:</b> Emergency battery with test switch is attached to fixture kit. Add emergency suffix code to HCDE model number: EM06 or EM14 *IEM reflector ordered separately *HCD42T 4" IEM round trims maximum ceiling thickness up to 1.25" to allow integral (IEM) switch clearance in IEM reflector	<b>Notes</b> Wall wash kits are not available for IEM reflectors.  For BAA/TAA wall wash option, add "WW" to the reflector catalog (example: TAA-HCD42TRCWW).

## Product Specifications

### Fixture Kit & LED Engine

- For use in retrofit, remodel, and new construction mounting types.
- Fixture kits universal fit to 4", 6", 8" all round or square reflectors (fixture kit and reflectors are ordered separately)
- Fixture kit LED engines attach to reflectors with three toolless lever clamps.
- Mousetrap springs on reflectors for direct-mount from below a finished ceiling, in retrofit, remodeling or in new construction mounting frames.
- LED engine aluminum heat sinks feature passive conduction of heat away from the LED array for optimal performance and long life
- Fixture kits include LED engine, driver junction box, and durable metal flex conduit; with quick-connect box on applicable models

### Fixture Kits

- **HCDJB** Basic Junction Box Fixture Kit with LED Engine & driver box on 20" metal flex. Input wiring and connections to the driver box by installer.
- **HCDQC** Quick Connect Fixture Kit with LED Engine & driver box on 20" metal flex with 5-conductor quick-connect on a metal flex whip and 1/2" KO snap-fitting for mains terminations by others.
- **HCDE** Emergency Fixture Kit with LED Engine & driver box and battery pack & test switch on 20" metal flex with 6-conductor quick-connect on a metal flex whip and 1/2" KO snap-fitting for mains terminations by others.
  - Emergency battery pack and remote test switch are attached to fixture kit.
  - Add emergency suffix code option to catalog number: EM06 or EM14 (see Emergency Backup Options for details)
- **HCDP** Chicago Plenum Fixture Kit with LED Engine & driver box on 18" CCEA compliant metal flex. CCEA compliant mains and dimmer wiring to HCDP fixture kit driver box by installer.
- **HCDW** WaveLinX Fixture Kit with LED Engine & driver box on a 20" metal flex with 3-conductor quick-connect on a metal flex whip and 1/2" KO snap-fitting for mains terminations by others.
  - Add WaveLinX Wireless Node suffix code to catalog number: WPN - WaveLinX or WLN - WaveLinX Lite (see [WaveLinX Connected Lighting website](#) for details)

### Fixture Kit Driver Box

- Galvanized steel electrical box
- Integral driver
- 18 cubic inch internal volume
- Listed for six #12 AWG 90° C splice conductors, two in, two out plus ground
- (4) 1/2" trade size pry outs
- (3) 4-port push wire nuts for mains voltage with 1-port for fixture connection

### New Construction Mounting Frames

- Galvanized steel plaster frame with integral bar hangers
- Available in 4", 6", 8" Round and Square
- Integral 3/8" drywall/plaster collar for ease in position locating and ceiling cut-out
- Round aperture diameter sized for industry standard hole saws 5.00", 6.375", 8.25"
- Bar hanger vertical brackets adjust 2" vertically from above & below ceiling
- Bar hangers horizontal adjusting from 10-1/2" to 24-1/2" wide
- Setscrews provide positive horizontal and vertical locking
- Captive nail for use in standard dimensional and engineered framing lumber
- Through-hole in bar bracket ends for additional nail or screw attachment (nail or screw by others)
- Flange lip on bar bracket ends level platform in framing construction
- Integral grid clip attaches directly to T-grid
- All mounting frames have knurled thumb screws for securing fixture kit driver box, when needed

### Mounting Frame Junction Box

- Trade-size galvanized steel junction box
- 25 in<sup>3</sup> internal total volume
- Voltage barrier for 0-10V dimming wires (occupies one 1/2" pry-out space)
- Listed for eight #12 AWG (four in, four out) 90° C conductors and feed-thru branch wiring
- Three 1/2" and two 3/4" trade size pry-outs

### Quick Connect Box

(available on HCDQC, HCDW, HCDE Fixture Kits)

- Galvanized steel enclosure on metal flex conduit whip end terminating with 1/2" KO snap-fitting for mains connections by others
- Tool-less access snap cover
- HCDQC (Quick Connect fixture kits) and HCDW (WaveLinX fixture kits): Quick connect 5-conductor mains & dimming in/out wiring on 3-conductor line voltage mains & 2-conductor 0-10V connectors
  - HCDW WaveLinX use only the 3-conductor line quick connections
- HCDE (Emergency fixture kits): Quick connect 6-conductor mains & dimming in/out wiring on 4-conductor line voltage + battery mains & 2-conductor 0-10V connectors

### Emergency Battery Backup Options

- Available on HCDE Emergency Fixture Kits
- Provide 90 minutes of standby egress lighting; consult national Life Safety Code and local code authority for specific requirements
- EM06 – 6-Watt self-test emergency battery with test switch
- EM14 – 14-W self-test emergency battery with test switch
- Self-Test (self-diagnostic) standard on models
- Emergency test switch may be installed with included remote switchplate or integral in reflector
  - Electrical box, as required, for remote switchplate by installer
  - IEM reflector ordered separately
- IEM not available on HCD41T 4", Wide (Shallow) round reflectors.

### LED

- Proximity phosphors over chip on board LEDs provide a uniform source with high efficiency and no pixilation
- LED is 90 CRI minimum, R9 greater than 50
- LED color uniformity & accuracy within 3-step SDCM at 2700K and 5000K and 4-step SDCM at 3000K, 3500K, & 4000K
- Lumen maintenance 80% at 60,000 hours (L80 / 60,000 hours)

### Lumen and CCT Color Selection

- Lumen and CCT selection switches are on the fixture kit driver box.
- Field-select switch settings by installer accessed under galvanized steel hinged snap-latch cover that protects lumen and CCT settings yet allows for quick changes
- **OR**
- Factory ordered preset individual switch settings secure under galvanized steel fixed cover. Torx screw on cover secures presets yet allows for re-set access if needed. Factory label notes preset lumen and CCT. (See ordering information section for factory preset ordering codes.)
- 500/750/1000, 1500/2000/2500, 3000/3500/4000, 4000/4500/5000 field selectable lumens or factory preset lumen options
- 2700-3000-3500-4000-5000K field selectable CCT or factory preset CCT options
- Selectable lumen and CCT must be specified together, example: "LS510" lumen, "CS" CCT
- Factory preset lumen and CCT must be specified together, example: "L05" lumen, "935" CCT

### Electronic Driver

- Integrated in fixture kit driver box
- 120-277V 50/60 Hz constant current driver
- Continuous dimming from 100% to 1% with 0-10V analog dimming controls
- Dims to off after 1% level is reached
- Compatible with WaveLinX and WaveLinX Lite Wireless dim-to-off functionality

### Canada Electronic Driver Option (Available on HCDQC fixture kits only)

- 347VAC 50/60Hz constant current driver
- Continuous dimming from 100% to 1%, with 0-10V analog dimming controls
- Dims to off after 1% level is reached
- 347VAC driver option available on HCDQC quick-connect fixture kits only
- 347V driver is not currently available with WaveLinX or WaveLinX Lite Wireless.

### Reflectors

- Direct-mount feature of HCD4-6-8 series requires a precise ceiling cut-out for secure round & square reflectors for fixture kit retention. See technical data for ceiling cut-out sizes.
- Three lever clamps and a key-slot for accurate positioning and securing reflector to the LED engine
- Integral mousetrap springs on reflector secure assembly for direct-mount from below the finished ceiling

continued on next page

## Product Specifications

### Medium Distribution Round & Square Reflectors

- 4", 6", 8" round and square reflectors designed to fit all fixture kits
- Round spun aluminum and square formed aluminum
- Available in specular and haze (semi-specular), matte white and matte black painted finishes. Matte white is paintable (overpaint by others)
- Prismatic lensed wall-wash accessory kits for field installation, in round and square reflectors.
- Reflector optical design delivers medium 1.0 spacing criteria and 55 degree cutoff (nominal, field results may vary by aperture and finish)
- Deep regressed LED source for low glare, UGR < 19
- Round and square accessory goof rings cover ceiling irregularities
- Goof rings for medium reflectors available in specular and haze (semi-specular), matte white and matte black painted finishes. Matte white is paintable (overpaint by others)

### Narrow Distribution Round Reflectors

- 4", 6", 8" round reflector designs fit all fixture kits
- Narrow distribution dimensions equivalent to HALO Commercial HC series 41x-61x-81x reflectors, allowing use of HCD and HC series on the same job for consistent appearance
- Round spun aluminum
- Available in specular and haze (semi-specular), matte white and matte black painted finishes. Matte white is paintable (overpaint by others)
- Deep regressed LED source for low glare, UGR < 19
- Prismatic lensed wall-wash accessory kits for field installation
- Narrow reflector optical design delivers wide 0.7 spacing criteria and 50 degree cutoff (nominal, field results may vary by aperture and finish)

### Wide (Shallow) Distribution Round Reflectors

- 4", 6", 8" round shallow reflector designs fit all fixture kits
- Ultra-shallow for installation in reduced plenum heights
- Wide distribution optical design delivers wide 1.28 spacing criteria and 65°+ cutoff (nominal, field results may vary by aperture and finish)
- Round spun aluminum
- Available in specular and haze (semi-specular), matte white and matte black painted finishes. Matte white is paintable (overpaint by others)
- Shallow regression of LED source, UGR < 23
- Shallow prismatic lensed wall-wash accessory kits 6" and 8" for field installation (shallow wall wash not available in 4")

### Compliance

- cULus damp and wet location listed, covered ceilings only and IP65 rated below the ceiling (IP64 with lensed wall wash accessory)
- Airtight per ASTM-E283
- IC listed LS510: 500, 750, 1000 lumen fixture kit - suitable for direct contact with air permeable insulation. IC models are also suitable for Non-IC installations. (Emergency battery fixture kits are not IC, Non-IC only)
- Non-IC listed LS1525: 1500-2000-2500 lumen, LS3040: 3000-3500-4000 lumen and LS4050: 4000-4500-5000 fixture kits. Insulation must be kept 3" from top and sides of luminaire.

- Marked spacing: 3000-3500-4000 lumen and 4000-4500-5000 lumen are Non-IC AND require marked spacing.
  - Center to Center Adjacent Luminaires = 36"
  - Center of Luminaire to Building = 18"
  - Minimum overhead = 0.5"
- Not for use in direct contact with spray foam insulation, consult NEMA LSD57-2013
- Suitable for use in clothes closets when installed in accordance with the NEC 410.16 spacing requirements
- EMI/RFI emissions per FCC CFR Title 47 Part 15 Class A at 277V and Class B at 120V CAN ICES-005(B)/NMB-005(B) at 120VAC and CAN ICES-005(A)/NMB-005(A) at 277VAC
- Contains no mercury or lead and RoHS compliant
- Photometric testing per IES LM-79-08
- Photometric file format per IES LM-63-19
- Lumen maintenance projections per IES LM-80-08 and TM-21-11
- ENERGY STAR® reference Certified Light Fixtures database (not applicable: matte black reflectors, WaveLinx, and 347V fixture kits)
- 500-750-1000 lumen, ICAT models certified to State of California Title 24, JA8. Refer to MAEDBS Database JA8 High Efficacy LED Lighting
- All models may be used to comply with State of California Title 24 non-residential code as a dimmable LED luminaire
- BAA and TAA - product configurations with these designated prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or Trade Agreements Act of 1979 (TAA), respectively. Please refer to Cooper Lighting Solutions [DOMESTIC PREFERENCES](#) website for more information.

### WaveLinx Wireless Connected Lighting

- WaveLinx PRO WPN wireless – when used with wireless sensors can provide daylight dimming, PIR motion sensing, scene and zone configuration, automatic commissioning; and optional RLTS - Real Time Location Services.
- WaveLinx LITE WLN wireless - when used with wireless sensors may provide daylight dimming and PIR motion sensing, scene and grouping configuration.
- WPN and WLN wireless include wireless node for communication with WaveLinx wireless sensors and control devices (ordered separately from WaveLinx Controls group). Wireless node with integral power supply is factory installed on the fixture kit driver box, using one 1/2" KO.
- Refer to WaveLinx PRO and WaveLinx LITE specifications and guides for details.

### Warranty

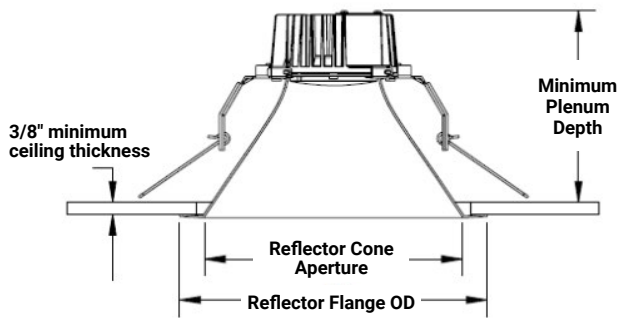
- Five year limited warranty, consult website for details. [www.cooperlighting.com/legal](http://www.cooperlighting.com/legal)

## Technical Data

### Ceiling Cutout Openings and Reflector Flange/Aperture

Ceiling Opening		Retrofit / Remodel & New Construction					
Type	Reflectors	Distribution	Nominal Ceiling Opening Remodel / Retrofit	Nominal Ceiling Opening New Construction	Minimum Plenum Depth*	Reflector Flange OD	Reflector Cone Aperture
Round	HCD4TR	Medium	4.750" Standard Hole Saw	5.000" Standard Hole Saw	5.50"	5.75"	4.29"
	HCD41TR	Wide			4.00"	6.12"	4.41"
	HCD42TR	Narrow			5.50"	6.12"	4.43"
	HCD6TR	Medium	6.375" Standard Hole Saw	6.375" Standard Hole Saw	5.50"	7.38"	5.95"
	HCD61TR	Wide			4.00"	7.76"	6.08"
	HCD62TR	Narrow			5.50"	7.76"	6.08"
	HCD8TR	Medium	8.250" Standard Hole Saw	8.250" Standard Hole Saw	6.50"	9.25"	7.81"
	HCD81TR	Wide			4.00"	9.50"	7.81"
	HCD82TR	Narrow			6.50"	9.14"	7.78"
Square	HCD4TSQ	Medium	5.000" Square	5.125" Frame lip outside	5.50"	5.80"	4.37"
	HCD6TSQ		6.625" Square	6.750" Frame lip outside	5.50"	7.50"	6.00"
	HCD8TSQ		8.500" Square	8.625" Frame lip outside	6.50"	9.38"	7.88"

\* 12.5" of plenum height required for Chicago Plenum fixture kits installation.



Note: Refer to IES files for specific tested values & data.

## Energy Data

500 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.053A	0.025A	0.018A
Input Power (W)	6.34W	6.47W	5.86W
Inrush (A)	3.7A	9.5A	1.05A
Inrush Duration (mS)	0.015ms	0.011ms	0.050ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

750 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.080A	0.036A	0.026A
Input Power (W)	9.61W	9.76W	8.68W
Inrush (A)	3.7A	9.5A	1.05A
Inrush Duration (mS)	15ms	11ms	50ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

1000 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.104A	0.046A	0.033A
Input Power (W)	12.54W	12.61W	11.12W
Inrush (A)	3.7A	9.5A	1.05A
Inrush Duration (mS)	15ms	11ms	50ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

1500 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.131A	0.060A	0.048A
Input Power (W)	15.68W	15.84W	15.71W
Inrush (A)	11.5A	22.8A	3.3A
Inrush Duration (mS)	0.004ms	0.003ms	0.034ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

2000 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.173A	0.077A	0.073A
Input Power (W)	20.77W	20.9W	20.76W
Inrush (A)	11.5A	22.8A	3.3A
Inrush Duration (mS)	0.004ms	0.003ms	0.034ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

2500 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.216A	0.095A	0.077A
Input Power (W)	25.91W	25.88W	25.82W
Inrush (A)	11.5A	22.8A	3.3A
Inrush Duration (mS)	0.004ms	0.003ms	0.034ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

3000 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.255A	0.116A	0.093A
Input Power (W)	30.5W	30.6W	29.93W
Inrush (A)	12.5A	30A	3.9A
Inrush Duration (mS)	0.005ms	0.004ms	0.065ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

3500 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.3A	0.135A	0.108A
Input Power (W)	35.9W	36.18W	34.85W
Inrush (A)	12.5A	30A	3.9A
Inrush Duration (mS)	0.005ms	0.004ms	0.065ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

4000 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.338A	0.151A	0.121A
Input Power (W)	40.45W	40.45W	39.65W
Inrush (A)	12.5A	30A	3.9A
Inrush Duration (mS)	0.005ms	0.004ms	0.065ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

4500 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.382A	0.17A	0.192A
Input Power (W)	45.63W	45.74W	44.93W
Inrush (A)	15.9A	38A	3.7A
Inrush Duration (mS)	0.005ms	0.004ms	0.075ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

5000 LM	120V	277V	347V
Input Voltage (V)	120V	277V	347V
Frequency (Hz)	50/60Hz	50/60Hz	50/60Hz
Input Current (A)	0.431A	0.189A	0.154A
Input Power (W)	50.75W	50.77W	49.64W
Inrush (A)	15.9A	38A	3.7A
Inrush Duration (mS)	0.005ms	0.004ms	0.075ms
THD %	≤ 20%	≤ 20%	≤ 20%
PF	≥ 0.90	≥ 0.90	≥ 0.90
Min start temp*	-40°	-40°	-40°
T Ambient	35°C	35°C	35°C
Sound Rating**	≤ 22dba	≤ 22dba	≤ 22dba

\* Emergency Battery packs are rated for Non-Insulated ceiling installation, and have a minimum starting temperature of 0°C.

\*\* Sound rating: Max at 1 ft at any dimming level.

## Lumen Data - 4-inch HCD4

Values based on medium distribution haze (semi-specular) finish reflector; field results and alternate finishes may vary. (Refer also to finish multipliers in photometry.)

Photometric lab testing per IES LM-79-08; field results may vary.

HCD4			2700K		3000K		3500K		4000K		5000K	
Fixture Kit Lumen Range	Lumen Selected	Wattage	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW
LS510	500	5.0	561	112	572	114	581	116	589	118	597	119
LS510	750	7.5	830	111	846	113	859	115	871	116	884	118
LS510	1000	10.0	1078	108	1099	110	1116	112	1132	113	1148	115
LS1525	1500	15.0	1640	109	1672	111	1698	113	1721	115	1747	116
LS1525	2000	20.0	2144	107	2186	109	2219	111	2250	113	2284	114
LS1525	2500	25.0	2610	104	2661	106	2701	108	2739	110	2780	111
LS3040	3000	28.5	3197	112	3260	114	3310	116	3356	118	3406	120
LS3040	3500	33.5	3679	110	3751	112	3808	114	3862	115	3919	117
LS3040	4000	38.5	4135	107	4217	110	4281	111	4341	113	4405	114
LS4550	4000	38.0	4070	107	4150	109	4213	111	4272	112	4335	114
LS4550	4500	44.0	4501	102	4589	104	4659	106	4725	107	4795	109
LS4550	5000	48.0	4909	102	5005	104	5081	106	5153	107	5229	109

HCD4 WallWash			2700K		3000K		3500K		4000K		5000K	
Fixture Kit Lumen Range	Lumen Selected	Wattage	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW
LS510	500	5.0	530	106	540	108	548	110	556	111	564	113
LS510	750	7.5	784	105	799	107	811	108	823	110	835	111
LS510	1000	10.0	1018	102	1038	104	1054	105	1069	107	1084	108
LS1525	1500	15.0	1549	103	1579	105	1603	107	1626	108	1650	110
LS1525	2000	20.0	2024	101	2064	103	2096	105	2125	106	2157	108
LS1525	2500	25.0	2464	99	2513	101	2551	102	2587	103	2625	105
LS3040	3000	28.5	3019	106	3079	108	3126	110	3169	111	3216	113
LS3040	3500	33.5	3474	104	3542	106	3596	107	3647	109	3701	110
LS3040	4000	38.5	3905	101	3982	103	4043	105	4100	106	4160	108
LS4550	4000	38.0	3843	101	3919	103	3978	105	4034	106	4094	108
LS4550	4500	44.0	4250	97	4334	98	4400	100	4462	101	4528	103
LS4550	5000	48.0	4635	97	4727	98	4799	100	4866	101	4938	103

Note: Refer to IES files for specific tested values & data.

## Lumen Data - 6-inch HCD6

Values based on medium distribution haze (semi-specular) finish reflector; field results and alternate finishes may vary. (Refer also to finish multipliers in photometry.)

Photometric lab testing per IES LM-79-08; field results may vary.

HCD6			2700K		3000K		3500K		4000K		5000K	
Fixture Kit Lumen Range	Lumen Selected	Wattage	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW
LS510	500	5.0	597	119	609	122	618	124	627	125	636	127
LS510	750	7.5	884	118	901	120	915	122	928	124	942	126
LS510	1000	10.0	1148	115	1171	117	1188	119	1205	121	1223	122
LS1525	1500	15.0	1746	116	1781	119	1808	121	1833	122	1860	124
LS1525	2000	20.0	2283	114	2328	116	2363	118	2396	120	2432	122
LS1525	2500	25.0	2779	111	2834	113	2877	115	2917	117	2960	118
LS3040	3000	28.5	3405	119	3472	122	3525	124	3574	125	3627	127
LS3040	3500	33.5	3917	117	3995	119	4056	121	4112	123	4173	125
LS3040	4000	38.5	4404	114	4491	117	4559	118	4623	120	4692	122
LS4550	4000	38.0	4334	114	4419	116	4487	118	4549	120	4617	121
LS4550	4500	44.0	4793	109	4887	111	4962	113	5031	114	5106	116
LS4550	5000	48.0	5227	109	5330	111	5411	113	5487	114	5569	116

HCD6 WallWash			2700K		3000K		3500K		4000K		5000K	
Fixture Kit Lumen Range	Lumen Selected	Wattage	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW
LS510	500	5.0	535	107	545	109	554	111	561	112	570	114
LS510	750	7.5	792	106	807	108	819	109	831	111	843	112
LS510	1000	10.0	1028	103	1048	105	1064	106	1079	108	1095	110
LS1525	1500	15.0	1564	104	1595	106	1619	108	1642	109	1666	111
LS1525	2000	20.0	2044	102	2085	104	2116	106	2146	107	2178	109
LS1525	2500	25.0	2489	100	2538	102	2576	103	2612	104	2651	106
LS3040	3000	28.5	3049	107	3109	109	3156	111	3200	112	3248	114
LS3040	3500	33.5	3508	105	3577	107	3632	108	3682	110	3737	112
LS3040	4000	38.5	3944	102	4021	104	4083	106	4140	108	4201	109
LS4550	4000	38.0	3881	102	3957	104	4018	106	4074	107	4134	109
LS4550	4500	44.0	4292	98	4377	99	4443	101	4506	102	4572	104
LS4550	5000	48.0	4681	98	4773	99	4846	101	4914	102	4986	104

Note: Refer to IES files for specific tested values & data.



## Lumen Data - 8-inch HCD8

Values based on medium distribution haze (semi-specular) finish reflector; field results and alternate finishes may vary. (Refer also to finish multipliers in photometry.)

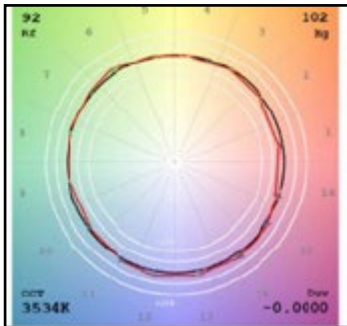
Photometric lab testing per IES LM-79-08; field results may vary.

HCD8			2700K		3000K		3500K		4000K		5000K	
Fixture Kit Lumen Range	Lumen Selected	Wattage	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW
LS510	500	5.0	524	105	535	107	543	109	550	110	559	112
LS510	750	7.5	776	103	791	106	803	107	815	109	827	110
LS510	1000	10.0	1008	101	1028	103	1044	104	1058	106	1074	107
LS1525	1500	15.0	1533	102	1564	104	1587	106	1610	107	1634	109
LS1525	2000	20.0	2005	100	2044	102	2075	104	2104	105	2135	107
LS1525	2500	25.0	2440	98	2488	100	2526	101	2561	102	2599	104
LS3040	3000	28.5	2990	105	3048	107	3095	109	3138	110	3185	112
LS3040	3500	33.5	3440	103	3507	105	3561	106	3611	108	3664	109
LS3040	4000	38.5	3867	100	3943	102	4003	104	4059	105	4119	107
LS4550	4000	38.0	3805	100	3880	102	3939	104	3995	105	4054	107
LS4550	4500	44.0	4209	96	4291	98	4357	99	4418	100	4483	102
LS4550	5000	48.0	4590	96	4680	98	4752	99	4818	100	4889	102

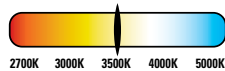
HCD8 WallWash			2700K		3000K		3500K		4000K		5000K	
Fixture Kit Lumen Range	Lumen Selected	Wattage	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW	Delivered Lumens	LPW
LS510	500	5.0	522	104	532	106	540	108	548	110	556	111
LS510	750	7.5	772	103	787	105	799	107	811	108	823	110
LS510	1000	10.0	1003	100	1023	102	1038	104	1053	105	1068	107
LS1525	1500	15.0	1526	102	1556	104	1580	105	1602	107	1625	108
LS1525	2000	20.0	1995	100	2034	102	2065	103	2094	105	2125	106
LS1525	2500	25.0	2428	97	2476	99	2514	101	2549	102	2586	103
LS3040	3000	28.5	2975	104	3033	106	3080	108	3123	110	3169	111
LS3040	3500	33.5	3423	102	3490	104	3543	106	3593	107	3646	109
LS3040	4000	38.5	3848	100	3924	102	3983	103	4039	105	4099	106
LS4550	4000	38.0	3786	100	3861	102	3920	103	3975	105	4034	106
LS4550	4500	44.0	4188	95	4270	97	4335	99	4396	100	4461	101
LS4550	5000	48.0	4567	95	4657	97	4728	98	4794	100	4865	101

### COLOR METRICS - TM-30-15 & CRI/CIE (3500K)

#### 90 CRI Color Metric Summary - 3500K\*

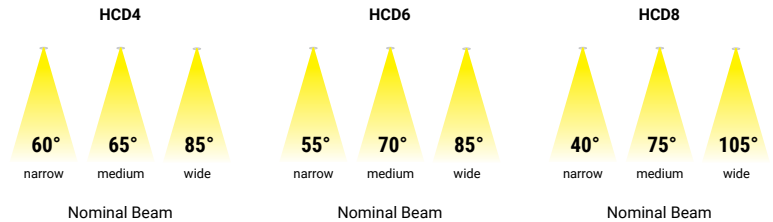


TM-30-15	Rf = 92
	Rg = 102
CRI/CIE	Ra = 95.3
	R9 = 77.9



Reference Illuminant — Test Source

#### BEAM ANGLES



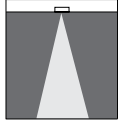
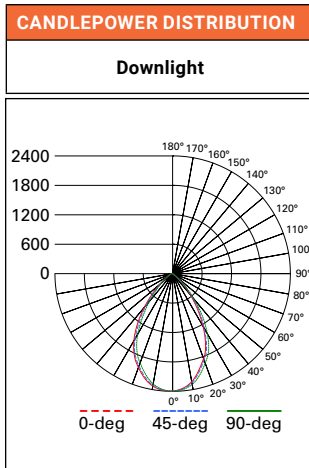
\* Color values are based on HCD42TRMW reflector, other finishes and field results may vary.

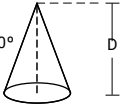
Note: Refer to IES files for specific tested values & data.

## Photometric Data

### 4" ROUND - MEDIUM DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" ROUND	
Test Number	P775982
Fixture Kit	HCDJBL1525CSD
Reflector	HCD4TRH
Lumens	2702 Lm
Efficacy	108.1 Lm/W
SC	0.98
UGR	18

CONE OF LIGHT			
			
MH	FC	L	W
5.5'	79.3	5.3	5.3
7'	49	6.7	6.8
8'	37.5	7.8	7.8
9'	29.6	8.8	8.8
10'	24	9.7	9.8
12'	16.7	11.7	11.8

CANDELA TABLE	
Degrees Vertical	Candela
0	2397
5	2356
15	2070
25	1623
35	936
45	372
55	86
65	14
75	3
85	0
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1604	59.4
0-40	2259	83.6
0-60	2682	99.3
0-90	2702	100
90-180	0	0
0-180	2702	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	66172
55	18826
65	4109
75	1459
85	433


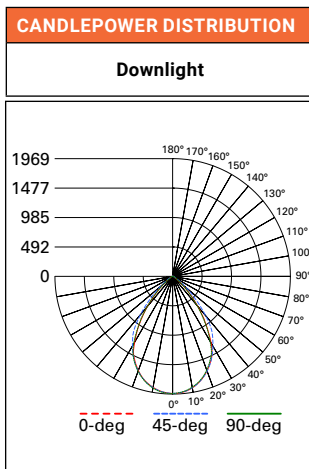
Values are nominal for haze (semi-specular) reflectors, other may vary.

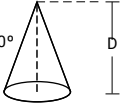
SC = Spacing Criteria

UGR = Unified Glare Rating

### 4" SQUARE - MEDIUM DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" SQUARE	
Test Number	P776007
Fixture Kit	HCDJBL1525CSD
Reflector	HCD4TSQH
Lumens	2519 Lm
Efficacy	100.7 Lm/W
SC	1.05
UGR	17

CONE OF LIGHT			
			
MH	FC	L	W
5.5'	65.1	5.6	5.7
7'	40.2	7.2	7.3
8'	30.8	8.4	8.3
9'	24.3	9.4	9.3
10'	19.7	10.4	10.3
12'	13.7	12.6	12.5

CANDELA TABLE	
Degrees Vertical	Candela
0	1967
5	1954
15	1812
25	1534
35	953
45	358
55	53
65	23
75	8
85	1
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1394	55.3
0-40	2037	80.9
0-60	2478	98.4
0-90	2519	100
90-180	0	0
0-180	2519	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	50015
55	9202
65	5286
75	3246
85	907

Values are nominal for haze (semi-specular) reflectors, other may vary.

SC = Spacing Criteria

UGR = Unified Glare Rating

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

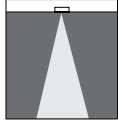
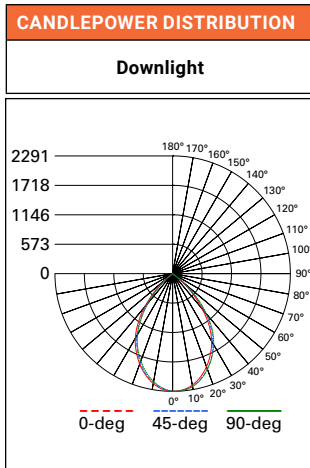
Multipliers for relative lumen values with other series color temperatures.

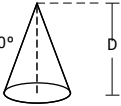
Note: Refer to IES files for specific tested values & data.

## Photometric Data

### 6" ROUND - MEDIUM DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" ROUND	
Test Number	P776082
Fixture Kit	HCDJBL5125CSD
Reflector	HCD6TRH
Lumens	2877 Lm
Efficacy	115.1 Lm/W
SC	1.02
UGR	16

CONE OF LIGHT			
			
MH	FC	L	W
5.5'	75.7	5.5	5.5
7'	46.8	7.1	7.1
8'	35.8	8.1	8
9'	28.3	9.1	9.1
10'	22.9	10.1	10.1
12'	15.9	12.2	12.2

CANDELA TABLE	
Degrees Vertical	Candela
0	2288
5	2269
15	2084
25	1738
35	1247
45	575
55	98
65	1
75	0
85	0
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1576	54.8
0-40	2328	80.9
0-60	2873	99.9
0-90	2877	100
90-180	0	0
0-180	2877	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	44609
55	9395
65	169
75	64
85	0

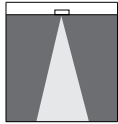
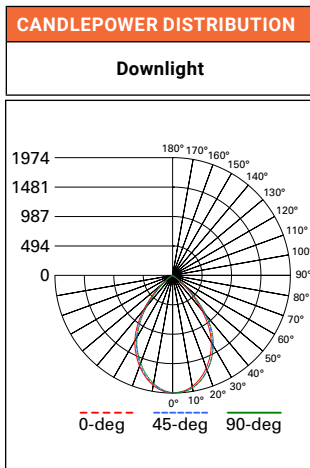
Values are nominal for haze (semi-specular) reflectors, other may vary.

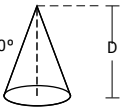
SC = Spacing Criteria

UGR = Unified Glare Rating

### 6" SQUARE - MEDIUM DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" SQUARE	
Test Number	P776107
Fixture Kit	HCDJBL5125CSD
Reflector	HCD6TSQH
Lumens	2478 Lm
Efficacy	99.1 Lm/W
SC	1.02
UGR	15

CONE OF LIGHT			
			
MH	FC	L	W
5.5'	65.2	5.5	5.5
7'	40.3	7.1	7.1
8'	30.8	8.1	8
9'	24.4	9.1	9.1
10'	19.7	10.1	10.1
12'	13.7	12.2	12.2

CANDELA TABLE	
Degrees Vertical	Candela
0	1971
5	1955
15	1796
25	1497
35	1074
45	496
55	85
65	1
75	0
85	0
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1357	54.8
0-40	2005	80.9
0-60	2475	99.9
0-90	2478	100
90-180	0	0
0-180	2478	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	38430
55	8095
65	143
75	42
85	0

Values are nominal for haze (semi-specular) reflectors, other may vary.

SC = Spacing Criteria

UGR = Unified Glare Rating

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

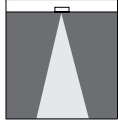
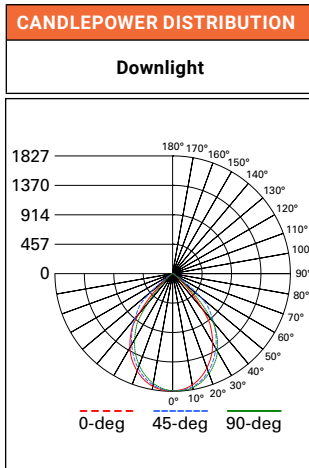
Multipliers for relative lumen values with other series color temperatures.

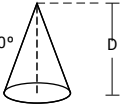
Note: Refer to IES files for specific tested values & data.

## Photometric Data

### 8" ROUND - MEDIUM DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" ROUND	
Test Number	P776182
Fixture Kit	HCDJBL51525CSD
Reflector	HCD8TRH
Lumens	2526 Lm
Efficacy	101 Lm/W
SC	1.08
UGR	14

CONE OF LIGHT				
				
MH	FC	L	W	
5.5'	60.3	5.9	5.9	
7'	37.2	7.5	7.5	
8'	28.5	8.6	8.6	
9'	22.5	9.6	9.7	
10'	18.2	10.7	10.8	
12'	12.7	12.9	12.9	

CANDELA TABLE	
Degrees Vertical	Candela
0	1822
5	1806
15	1673
25	1417
35	1033
45	329
55	30
65	13
75	5
85	1
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1316	52.1
0-40	2002	79.3
0-60	2503	99.1
0-90	2526	100
90-180	0	0
0-180	2526	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	14201
55	1602
65	961
75	625
85	350

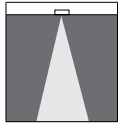
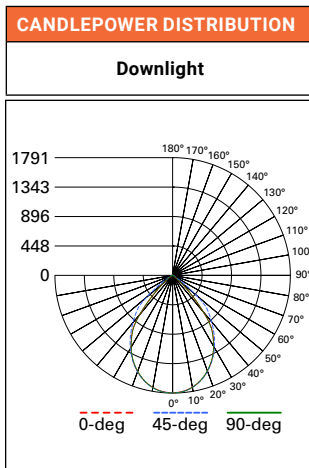
Values are nominal for haze (semi-specular) reflectors, other may vary.

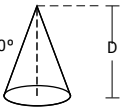
SC = Spacing Criteria

UGR = Unified Glare Rating

### 8" SQUARE - MEDIUM DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" SQUARE	
Test Number	P776207
Fixture Kit	HCDJBL51525CSD
Reflector	HCD8TSQH
Lumens	2466 Lm
Efficacy	98.6 Lm/W
SC	1.08
UGR	13

CONE OF LIGHT				
				
MH	FC	L	W	
5.5'	59.2	5.8	5.8	
7'	36.6	7.4	7.4	
8'	28	8.6	8.6	
9'	22.1	9.6	9.6	
10'	17.9	10.8	10.6	
12'	12.4	12.8	12.8	

CANDELA TABLE	
Degrees Vertical	Candela
0	1791
5	1776
15	1659
25	1423
35	1063
45	357
55	31
65	13
75	5
85	1
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1289	52.3
0-40	1960	79.5
0-60	2443	99.1
0-90	2466	100
90-180	0	0
0-180	2466	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	12106
55	1300
65	755
75	491
85	275

Values are nominal for haze (semi-specular) reflectors, other may vary.

SC = Spacing Criteria

UGR = Unified Glare Rating

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

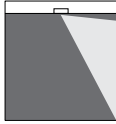
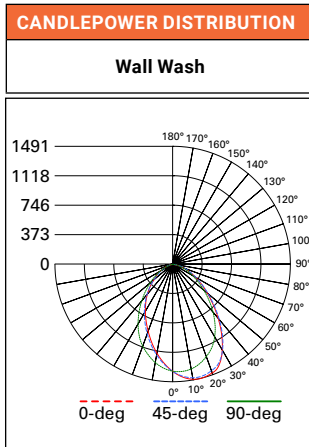
Multipliers for relative lumen values with other series color temperatures.

Note: Refer to IES files for specific tested values & data.

## Photometric Data

### 4" ROUND - MEDIUM WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" ROUND WALL WASH	
Test Number	P775987
Fixture Kit	HCDJBL51525CSD
Reflector	HCD4TRH - HCD4TRLWW
Lumens	2551 Lm
Efficacy	102 Lm/W
SC	1.09

CANDELA TABLE	
Degrees Vertical	Candela
0	1359
5	1437
15	1489
25	1397
35	1076
45	723
55	447
65	244
75	94
85	6
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	981	38.5
0-40	1504	59
0-60	2257	88.5
0-90	2551	100
90-180	0	0
0-180	2551	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	128625
55	98077
65	72541
75	45853
85	8664

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	24.3	16.8	7.3	2.8	1.1	0.5	0.2
2	40.9	30.1	15.3	6.8	3	1.4	0.7
3	37.8	29.6	17.2	8.8	4.4	2.2	1.2
4	28.2	23.4	15.4	8.9	4.9	2.7	1.5
5	19.4	16.9	12.3	7.9	4.8	2.9	1.7
6	13.1	11.9	9.4	6.6	4.4	2.8	1.8
7	8.9	8.3	7	5.3	3.8	2.6	1.8
8	6.3	5.9	5.2	4.2	3.2	2.3	1.6
9	4.6	4.3	3.9	3.3	2.6	2	1.5
10	3.4	3.3	3	2.6	2.2	1.7	1.3

MULTIPLE UNIT FOOTCANDLES									
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			
1	28.3	25.2	27.1	26.1	16.8	25.4	26.1	16.8	25.4
2	49.4	47.3	47.7	44.8	33.4	43.9	44.8	33.4	43.9
3	48.6	49.5	46.6	43.3	37.4	42.2	43.3	37.4	42.2
4	39	41.4	37.1	34.3	33.3	33.1	34.3	33.3	33.1
5	29	31	27.4	25.4	26.4	24.3	25.4	26.4	24.3
6	21	22.4	19.7	18.5	19.8	17.5	18.5	19.8	17.5
7	15.1	16	14.2	13.5	14.6	12.7	13.5	14.6	12.7
8	11	11.5	10.5	10	10.8	9.5	10	10.8	9.5
9	8.2	8.5	7.9	7.6	8	7.2	7.6	8	7.2
10	6.2	6.4	6	5.9	6.1	5.6	5.9	6.1	5.6

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

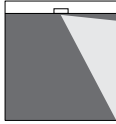
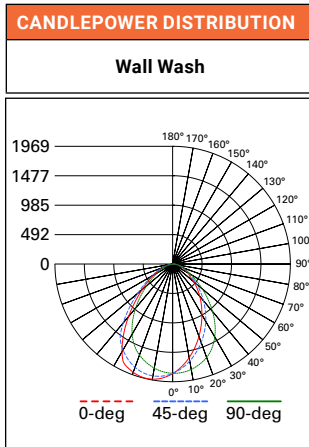
Multipliers for relative lumen values with other series color temperatures.

Note: Refer to IES files for specific tested values & data.

## Photometric Data

### 4" SQUARE - MEDIUM WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" SQUARE WALL WASH	
Test Number	P776012
Fixture Kit	HCDJBL51525CSD
Reflector	HCD4TSQH - HCD4TSQLWW
Lumens	2210 Lm
Efficacy	88.4 Lm/W
SC	1.14

CANDELA TABLE	
Degrees Vertical	Candela
0	1142
5	1070
15	889
25	690
35	506
45	341
55	203
65	127
75	62
85	8
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	841	38.1
0-40	1308	59.2
0-60	1955	88.5
0-90	2210	100
90-180	0	0
0-180	2210	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	60655
55	44519
65	37938
75	30001
85	11552

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	13.3	10.6	5.5	2.5	1.2	0.6	0.3
2	18.5	15.4	9.1	4.4	2.3	1.2	0.7
3	17.8	15.7	10.6	6	3.1	1.7	1
4	13.3	12.2	9.3	6.1	3.6	2.1	1.2
5	9.4	8.8	7.3	5.3	3.6	2.2	1.4
6	6.7	6.4	5.6	4.4	3.2	2.2	1.5
7	4.9	4.7	4.2	3.5	2.7	2	1.4
8	3.6	3.5	3.2	2.7	2.3	1.8	1.3
9	2.7	2.6	2.5	2.2	1.8	1.5	1.2
10	2.1	2	1.9	1.7	1.5	1.3	1

MULTIPLE UNIT FOOTCANDLES						
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			
1	15.6	15.3	15.8	14.4	10.6	14.5
2	22.7	23.8	22.9	20.6	17.8	20.8
3	23.6	26.4	23.8	20.8	21	21
4	19.2	21.7	19.4	16.8	18.5	16.9
5	14.7	16.4	14.8	12.9	14.6	13
6	11	12.1	11.1	9.9	11.1	9.9
7	8.3	8.9	8.3	7.5	8.4	7.6
8	6.3	6.7	6.3	5.8	6.4	5.8
9	4.9	5.1	4.9	4.5	4.9	4.5
10	3.8	4	3.8	3.6	3.8	3.6

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

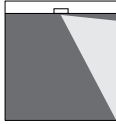
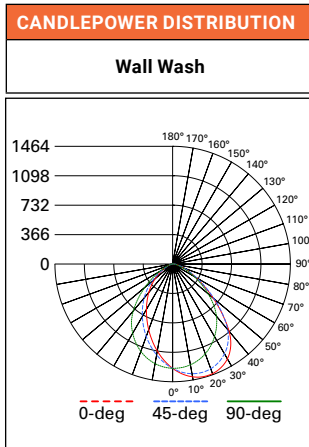
Multipliers for relative lumen values with other series color temperatures.

Note: Refer to IES files for specific tested values & data.

## Photometric Data

### 6" ROUND - MEDIUM WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" ROUND WALL WASH	
Test Number	P776087
Fixture Kit	HCDJBL51525CSD
Reflector	HCD6TRH - HCD6TRLWW
Lumens	2576 Lm
Efficacy	1034 Lm/W
SC	1.17

CANDELA TABLE	
Degrees Vertical	Candela
0	1310
5	1386
15	1461
25	1428
35	1258
45	855
55	459
65	202
75	65
85	4
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	979	38
0-40	1550	60.2
0-60	2358	91.5
0-90	2576	100
90-180	0	0
0-180	2576	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	66317
55	43841
65	26190
75	13704
85	2830

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	18.8	13	5.4	1.9	0.7	0.3	0.1
2	44.8	32	15.2	6.2	2.5	1.1	0.5
3	45.9	36.2	20.4	9.7	4.5	2.1	1
4	31.7	27.7	19.2	10.9	5.7	3	1.6
5	20.2	18.5	14.5	9.9	6	3.5	2
6	13.2	12.3	10.3	7.9	5.5	3.5	2.2
7	8.9	8.4	7.4	6	4.6	3.3	2.2
8	6.2	6	5.4	4.5	3.7	2.8	2.1
9	4.5	4.3	4	3.5	2.9	2.4	1.8
10	3.3	3.2	3	2.7	2.3	1.9	1.6

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)					
1	21.3	18.6	20.7	19.8	11.9	19.5		
2	52.3	48.7	51	47.9	32.9	47.3		
3	57.6	59.1	55.7	51.4	43.9	50.4		
4	44.3	48.5	42.6	38.6	39.9	37.4		
5	31	33.7	30.2	27.1	29.6	26.2		
6	21.5	23.1	21	19.1	20.9	18.7		
7	15.1	16.1	14.9	13.7	14.9	13.4		
8	10.9	11.5	10.7	10	10.8	9.9		
9	8.1	8.4	8	7.5	8	7.4		
10	6.1	6.3	6	5.7	6.1	5.6		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

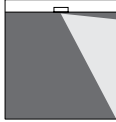
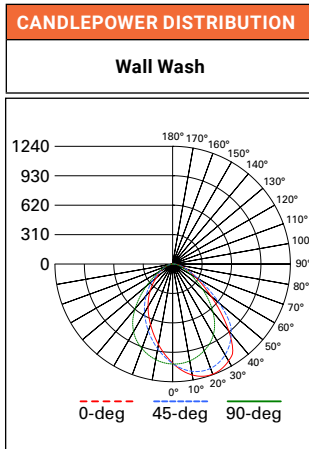
Multipliers for relative lumen values with other series color temperatures.

Note: Refer to IES files for specific tested values & data.

## Photometric Data

### 6" SQUARE - MEDIUM WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" SQUARE WALL WASH	
Test Number	P776112
Fixture Kit	HCDJBL51525CSD
Reflector	HCD6TSQH - HCD6TSQLWW
Lumens	2225 Lm
Efficacy	89 Lm/W
SC	1.19

CANDELA TABLE	
Degrees Vertical	Candela
0	1057
5	1135
15	1230
25	1221
35	1096
45	698
55	371
65	194
75	90
85	16
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	804	36.1
0-40	1285	57.7
0-60	1974	88.7
0-90	2225	100
90-180	0	0
0-180	2225	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	42483
55	27834
65	19754
75	14989
85	7954

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	19.9	15.3	7.3	3	1.3	0.6	0.3
2	35.8	29.8	15.8	6.6	2.8	1.3	0.7
3	38.4	33.1	21.5	10.4	4.4	2.1	1.1
4	27.6	24.6	18	11.3	5.7	2.8	1.4
5	17.3	16	12.8	9.2	5.8	3.3	1.8
6	11.2	10.6	8.9	6.9	5	3.3	2
7	7.5	7.2	6.3	5.2	4	2.9	2
8	5.3	5.1	4.6	3.9	3.2	2.5	1.8
9	3.8	3.7	3.4	3	2.5	2	1.6
10	2.8	2.7	2.5	2.3	2	1.7	1.4

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)					
1	22.9	21.5	23	21.2	14.3	21.2		
2	42.4	45.3	42.4	38.6	31.6	38.6		
3	49	54.9	48.8	42.9	43.1	42.8		
4	39.2	43.3	38.9	33.5	36.3	33.3		
5	26.7	29.1	26.5	23.3	25.8	23.1		
6	18.3	19.7	18.2	16.3	18	16.2		
7	12.8	13.7	12.7	11.7	12.7	11.6		
8	9.2	9.7	9.2	8.5	9.2	8.4		
9	6.8	7.1	6.7	6.3	6.8	6.3		
10	5.1	5.3	5.1	4.8	5.1	4.8		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

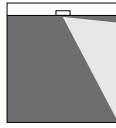
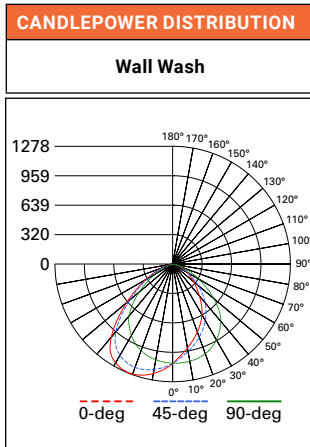
Multipliers for relative lumen values with other series color temperatures.



## Photometric Data

### 8" ROUND - MEDIUM WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" ROUND WALL WASH	
Test Number	P776187
Fixture Kit	HCDJBL51525CSD
Reflector	HCD8TRH - HCD8TRLWW
Lumens	2514 Lm
Efficacy	100.5 Lm/W
SC	1.27

CANDELA TABLE	
Degrees Vertical	Candela
0	1075
5	991
15	846
25	701
35	532
45	353
55	224
65	130
75	54
85	10
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	849	33.8
0-40	1385	55.1
0-60	2220	88.3
0-90	2514	100
90-180	0	0
0-180	2514	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	15241
55	11896
65	9406
75	6417
85	3328

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES								
2.5' from wall (distance from fixture along wall)								
1	13.4	9.6	4.6	1.9	0.8	0.4	0.2	
2	20.3	16.1	9	4.3	2	1	0.5	
3	18.4	15.9	11	6.2	3.2	1.7	0.9	
4	14	12.6	9.7	6.6	4	2.3	1.3	
5	9.7	9	7.5	5.6	3.9	2.5	1.6	
6	6.7	6.4	5.5	4.4	3.4	2.4	1.7	
7	4.7	4.6	4.1	3.5	2.8	2.1	1.6	
8	3.4	3.3	3.1	2.7	2.3	1.8	1.4	
9	2.6	2.5	2.3	2.1	1.8	1.5	1.2	
10	2	1.9	1.8	1.7	1.5	1.3	1.1	

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)		
1	15.6	14.2	15.3	14.4	9.7	14.2		
2	25	25.8	24.6	22.6	18.6	22.3		
3	25.1	27.8	24.6	22	22.5	21.7		
4	20.8	22.9	20.5	18.2	19.7	17.9		
5	15.5	16.9	15.3	13.8	15.1	13.6		
6	11.3	12.1	11.1	10.2	11.2	10.1		
7	8.3	8.8	8.2	7.6	8.3	7.5		
8	6.2	6.5	6.1	5.8	6.2	5.7		
9	4.7	4.9	4.7	4.4	4.7	4.4		
10	3.7	3.8	3.6	3.5	3.7	3.4		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

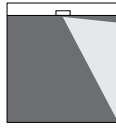
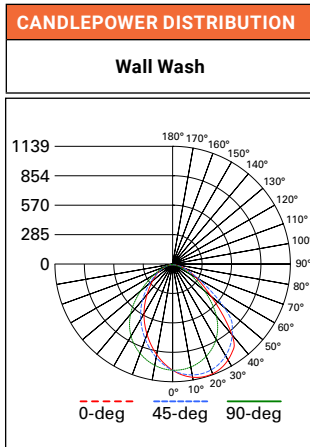
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Photometric Data

### 8" SQUARE - MEDIUM WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" SQUARE WALL WASH	
Test Number	P776212
Fixture Kit	HCDJBL1525CSD
Reflector	HCD8TSQH - HCD8TSQLWW
Lumens	2243 Lm
Efficacy	89.7 Lm/W
SC	1.2

CANDELA TABLE	
Degrees Vertical	Candela
0	1029
5	1079
15	1136
25	1120
35	1030
45	709
55	386
65	221
75	112
85	28
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	778	34.7
0-40	1246	55.5
0-60	1964	87.5
0-90	2243	100
90-180	0	0
0-180	2243	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	24029
55	16149
65	12528
75	10376
85	7593

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	23.4	17.8	8.3	3.4	1.4	0.7	0.3
2	36.6	30.9	16.8	7.2	3.1	1.5	0.8
3	38.9	33.6	21.4	10.9	4.7	2.3	1.2
4	25.3	22.6	16.7	10.8	6	3	1.6
5	15.9	14.6	11.7	8.5	5.6	3.4	1.9
6	10.3	9.7	8.2	6.4	4.7	3.2	2
7	6.9	6.6	5.8	4.8	3.7	2.8	2
8	4.8	4.6	4.2	3.6	2.9	2.3	1.8
9	3.5	3.4	3.1	2.7	2.3	1.9	1.5
10	2.6	2.5	2.3	2.1	1.8	1.6	1.3

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)					
1	27	25.4	26.8	25	17	24.8		
2	44.2	48	43.8	39.9	34.3	39.7		
3	50.6	54.9	49.8	44	44	43.6		
4	37	40.3	36.1	31.9	34.3	31.3		
5	24.9	26.9	24.4	22	23.9	21.5		
6	17	18.2	16.7	15.3	16.6	15		
7	11.9	12.6	11.7	10.9	11.7	10.6		
8	8.6	9	8.4	7.9	8.5	7.8		
9	6.3	6.6	6.2	5.9	6.3	5.8		
10	4.8	4.9	4.7	4.5	4.7	4.4		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

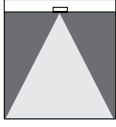
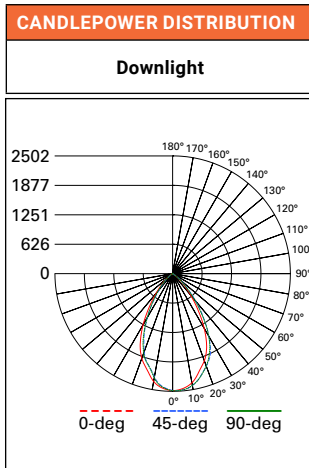
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

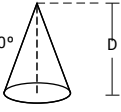
## Photometric Data

### 4" ROUND - NARROW DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" ROUND	
Test Number	P775957
Fixture Kit	HCDJBL51525CSD
Reflector	HCD42TRH
Lumens	2519 Lm
Efficacy	100.7 Lm/W
SC	0.93
UGR	15

**CONE OF LIGHT**



MH	FC	L	W
5.5'	82.7	5.1	5
7'	51	6.5	6.4
8'	39.1	7.4	7.4
9'	30.9	8.4	8.3
10'	25	9.3	9.2
12'	17.4	11.2	11.1

**CANDELA TABLE**

Degrees Vertical	Candela
0	2496
5	2465
15	2172
25	1724
35	953
45	361
55	67
65	8
75	1
85	0
90	0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Fixture
0-30	1590	63.1
0-40	2168	86.1
0-60	2509	99.6
0-90	2519	100
90-180	0	0
0-180	2519	100

**LUMINANCE**

Average Candela Degrees	Average 0° Luminance
45	64250
55	14745
65	2382
75	632
85	0

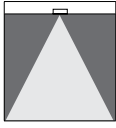
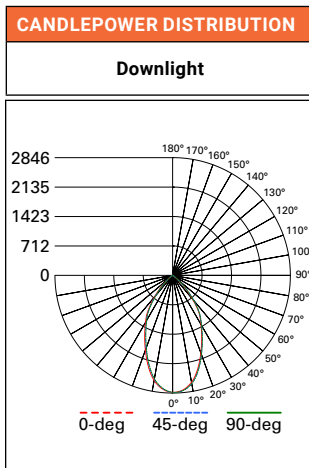
Values are nominal for haze (semi-specular) reflectors, other may vary.

SC = Spacing Criteria

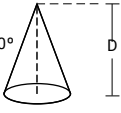
UGR = Unified Glare Rating

### 6" ROUND - NARROW DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" ROUND	
Test Number	P776057
Fixture Kit	HCDJBL51525CSD
Reflector	HCD62TRH
Lumens	2644 Lm
Efficacy	105.8 Lm/W
SC	0.82
UGR	13

**CONE OF LIGHT**



MH	FC	L	W
5.5'	94	4.5	4.4
7'	58.1	5.7	5.6
8'	44.4	6.5	6.5
9'	35.1	7.3	7.3
10'	28.4	8.2	8.1
12'	19.8	9.8	9.8

**CANDELA TABLE**

Degrees Vertical	Candela
0	2841
5	2798
15	2356
25	1675
35	1122
45	413
55	24
65	4
75	1
85	0
90	0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Fixture
0-30	1652	62.5
0-40	2303	87.1
0-60	2638	99.8
0-90	2644	100
90-180	0	0
0-180	2644	100

**LUMINANCE**

Average Candela Degrees	Average 0° Luminance
45	32050
55	2256
65	558
75	275
85	0

Values are nominal for haze (semi-specular) reflectors, other may vary.

SC = Spacing Criteria

UGR = Unified Glare Rating

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

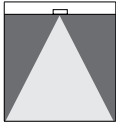
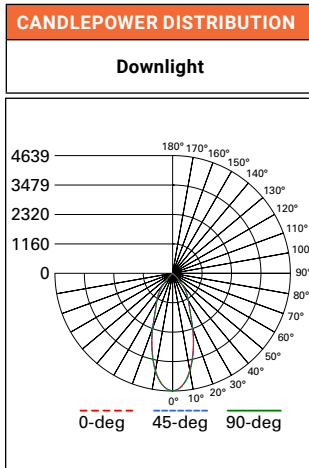
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

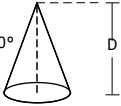
## Photometric Data

### 8" ROUND - NARROW DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" ROUND	
Test Number	P776157
Fixture Kit	HCDJBLS1525CSD
Reflector	HCD82TRH
Lumens	2794 Lm
Efficacy	111.8 Lm/W
SC	0.65
UGR	12

**CONE OF LIGHT**



MH	FC	L	W
5.5'	153.4	3.4	3.4
7'	94.7	4.4	4.4
8'	72.5	5	5
9'	57.3	5.6	5.8
10'	46.4	6.2	6.4
12'	32.2	7.6	7.6

**CANDELA TABLE**

Degrees Vertical	Candela
0	4639
5	4436
15	3117
25	1600
35	950
45	196
55	5
65	2
75	0
85	0
90	0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Fixture
0-30	2031	72.7
0-40	2604	93.2
0-60	2792	99.9
0-90	2794	100
90-180	0	0
0-180	2794	100

**LUMINANCE**

Average Candela Degrees	Average 0° Luminance
45	8458
55	266
65	108
75	59
85	0

Values are nominal for haze (semi-specular) reflectors, other may vary.  
 SC = Spacing Criteria  
 UGR = Unified Glare Rating

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

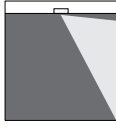
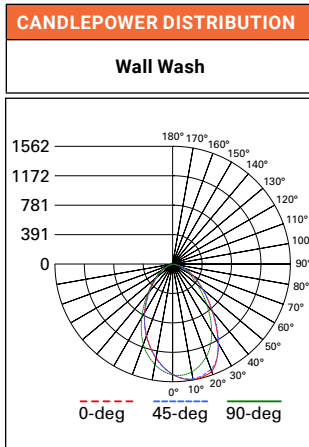
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Photometric Data

### 4" ROUND - NARROW WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" ROUND WALL WASH	
Test Number	P775962
Fixture Kit	HCDJBL1525CSD
Reflector	HCD42TRH-HCD42TRLWW
Lumens	2453 Lm
Efficacy	98.1 Lm/W
SC	1.01

CANDELA TABLE	
Degrees Vertical	Candela
0	1477
5	1535
15	1552
25	1384
35	996
45	644
55	401
65	224
75	84
85	6
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1027	41.9
0-40	1525	62.1
0-60	2194	89.4
0-90	2453	100
90-180	0	0
0-180	2453	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	114583
55	88072
65	66734
75	40845
85	9386

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	22.4	14.2	5.9	2.2	0.9	0.4	0.2
2	36.6	26.1	12.9	5.6	2.4	1.1	0.6
3	34.1	25.9	14.8	7.4	3.6	1.8	1
4	26.6	21.3	13.5	7.7	4.2	2.3	1.3
5	19	16	11.2	7	4.1	2.4	1.5
6	13.3	11.6	8.8	6	3.8	2.4	1.5
7	9.2	8.4	6.8	5	3.4	2.3	1.5
8	6.5	6.1	5.2	4	2.9	2.1	1.4
9	4.7	4.5	4	3.2	2.5	1.8	1.3
10	3.6	3.4	3.1	2.6	2.1	1.6	1.2

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)					
1	25.6	21.3	24.6	23.8	13.8	23.3		
2	43.8	41.1	42.2	39.9	28.6	39		
3	43.3	43.4	41.5	38.8	32.5	37.7		
4	36.1	37.5	34.3	31.9	29.7	30.8		
5	27.7	29.3	26	24.2	24.5	23.2		
6	20.6	21.8	19.2	18.1	19	17.1		
7	15.2	16	14.2	13.5	14.5	12.6		
8	11.3	11.8	10.5	10.1	10.9	9.5		
9	8.5	8.8	8	7.7	8.3	7.2		
10	6.5	6.6	6.1	6	6.3	5.6		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

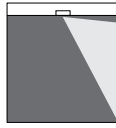
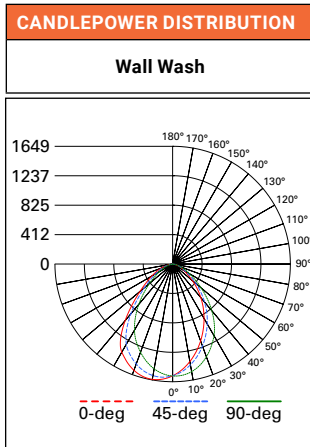
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Photometric Data

### 6" ROUND - NARROW WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" ROUND WALL WASH	
Test Number	P776062
Fixture Kit	HCDJBL5125CSD
Reflector	HCD62TRH - HCD62TRLWW
Lumens	2859 Lm
Efficacy	114.4 Lm/W
SC	1.09

CANDELA TABLE	
Degrees Vertical	Candela
0	1575
5	1496
15	1281
25	1021
35	754
45	492
55	266
65	152
75	72
85	12
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1135	39.7
0-40	1751	61.2
0-60	2567	89.8
0-90	2859	100
90-180	0	0
0-180	2859	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	38167
55	25452
65	19652
75	15293
85	7862

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	15.8	11	5.2	2.2	1	0.4	0.2
2	25.9	19.6	10	4.5	2.1	1	0.5
3	26.3	21.7	13.3	6.8	3.3	1.7	0.9
4	19.9	17.4	12.4	7.5	4.2	2.3	1.3
5	14	12.7	10	6.9	4.3	2.6	1.5
6	9.9	9.2	7.6	5.8	4	2.6	1.7
7	7.1	6.7	5.8	4.6	3.5	2.5	1.7
8	5.2	4.9	4.4	3.7	2.9	2.2	1.6
9	3.9	3.7	3.4	2.9	2.4	1.9	1.5
10	3	2.9	2.7	2.3	2	1.7	1.3

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)					
1	18.8	17	18	17.2	11.7	16.8		
2	31.6	31	30.4	28.7	21.9	28		
3	34.5	36.7	33.2	30.5	28.3	29.7		
4	28.4	31.1	27.4	24.8	25.9	24		
5	21.6	23.5	20.9	19	20.6	18.3		
6	16.1	17.3	15.6	14.4	15.7	13.9		
7	12	12.8	11.7	10.9	11.8	10.6		
8	9.1	9.6	8.9	8.3	9	8.1		
9	7	7.3	6.8	6.5	6.9	6.3		
10	5.4	5.6	5.3	5.1	5.4	5		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

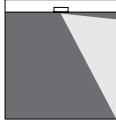
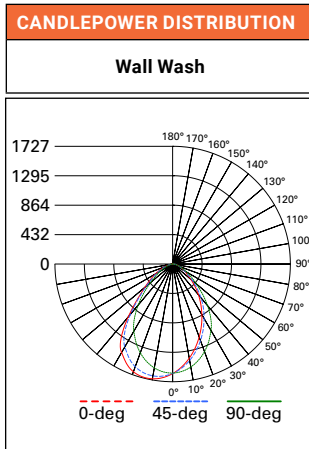
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Photometric Data

### 8" ROUND - NARROW WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" ROUND WALL WASH	
Test Number	P776162
Fixture Kit	HCDJBL1525CSD
Reflector	HCD82TRH - HCD82TRLWW
Lumens	2792 Lm
Efficacy	111.7 Lm/W
SC	1.08

CANDELA TABLE	
Degrees Vertical	Candela
0	1610
5	1519
15	1274
25	991
35	708
45	443
55	238
65	135
75	61
85	12
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1161	41.6
0-40	1783	63.9
0-60	2542	91.1
0-90	2792	100
90-180	0	0
0-180	2792	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	19144
55	12668
65	9745
75	7243
85	4204

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	13.9	10.3	4.9	2.1	0.9	0.4	0.2
2	22.7	18.2	9.5	4.4	2.1	1	0.5
3	24.3	20.8	12.9	6.6	3.2	1.6	0.9
4	18.9	17	12.3	7.5	4.2	2.2	1.2
5	13.5	12.6	10	7	4.4	2.6	1.5
6	9.6	9.1	7.7	5.9	4.1	2.7	1.7
7	7	6.7	5.8	4.7	3.6	2.6	1.8
8	5.1	5	4.5	3.7	3	2.3	1.7
9	3.9	3.8	3.4	3	2.5	2	1.6
10	3	2.9	2.7	2.4	2.1	1.7	1.4

MULTIPLE UNIT FOOTCANDLES						
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			
1	16.1	14.8	15.9	14.9	10	14.8
2	27.2	27.2	27	24.8	19.2	24.7
3	30.9	33.8	30.9	27.6	25.8	27.5
4	26.3	29.6	26.4	23	24.6	23
5	20.5	22.7	20.5	17.9	19.9	18
6	15.4	16.9	15.5	13.7	15.2	13.8
7	11.6	12.6	11.7	10.5	11.6	10.6
8	8.8	9.5	8.9	8.1	8.9	8.2
9	6.8	7.2	6.9	6.3	6.9	6.4
10	5.3	5.6	5.4	5	5.4	5

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

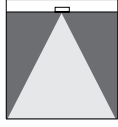
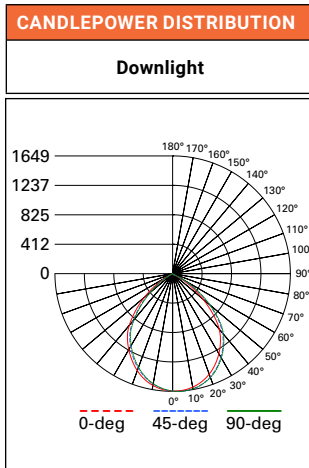
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

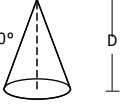
## Photometric Data

### 4" ROUND - WIDE DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" ROUND	
Test Number	P775932
Fixture Kit	HCDJBL1525CSD
Reflector	HCD41TRH
Lumens	2935 Lm
Efficacy	117.4 Lm/W
SC	1.15
UGR	23

**CONE OF LIGHT**



MH	FC	L	W
5.5'	54.4	6.2	6.2
7'	33.6	8	8
8'	25.7	9.1	9.1
9'	20.3	10.3	10.3
10'	16.4	11.5	11.4
12'	11.4	13.8	13.8

**CANDELA TABLE**

Degrees Vertical	Candela
0	1640
5	1637
15	1568
25	1411
35	1177
45	826
55	381
65	72
75	7
85	0
90	0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Fixture
0-30	1222	41.6
0-40	1930	65.8
0-60	2847	97
0-90	2935	100
90-180	0	0
0-180	2935	100

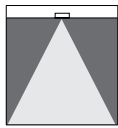
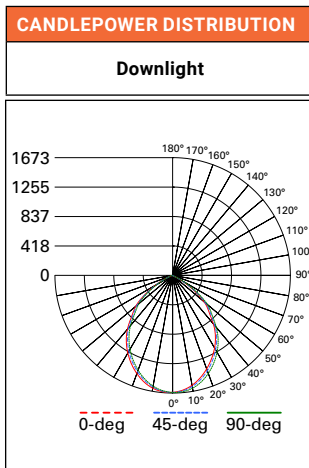
**LUMINANCE**

Average Candela Degrees	Average 0° Luminance
45	147046
55	83552
65	21441
75	3306
85	722

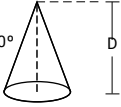
Values are nominal for haze (semi-specular) reflectors, other may vary.  
 SC = Spacing Criteria  
 UGR = Unified Glare Rating

### 6" ROUND - WIDE DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" ROUND	
Test Number	P776032
Fixture Kit	HCDJBL1525CSD
Reflector	HCD61TRH
Lumens	2982 Lm
Efficacy	119.3 Lm/W
SC	1.12
UGR	22

**CONE OF LIGHT**



MH	FC	L	W
5.5'	55.3	6.1	6.1
7'	34.1	7.7	7.8
8'	26.1	8.8	8.8
9'	20.6	10	10
10'	16.7	11.1	11.1
12'	11.6	13.3	13.3

**CANDELA TABLE**

Degrees Vertical	Candela
0	1670
5	1647
15	1522
25	1323
35	1079
45	750
55	399
65	48
75	0
85	0
90	0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Fixture
0-30	1216	40.8
0-40	1906	63.9
0-60	2899	97.2
0-90	2982	100
90-180	0	0
0-180	2982	100

**LUMINANCE**

Average Candela Degrees	Average 0° Luminance
45	58115
55	38116
65	6278
75	106
85	189

Values are nominal for haze (semi-specular) reflectors, other may vary.  
 SC = Spacing Criteria  
 UGR = Unified Glare Rating

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

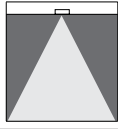
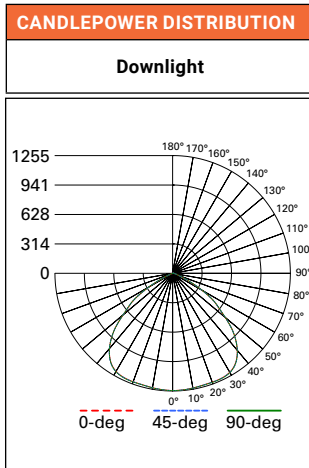
Multipliers for relative lumen values with other series color temperatures.



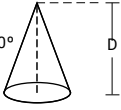
## Photometric Data

### 8" ROUND - WIDE DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" ROUND	
Test Number	P776132
Fixture Kit	HCDJBLS1525CSD
Reflector	HCD81TRH
Lumens	3047 Lm
Efficacy	121.9 Lm/W
SC	1.42
UGR	21

**CONE OF LIGHT**



MH	FC	L	W
5.5'	41.5	7.8	7.8
7'	25.6	9.8	9.8
8'	19.6	11.2	11.2
9'	15.5	12.6	12.6
10'	12.5	14	14.2
12'	8.7	17	17

**CANDELA TABLE**

Degrees Vertical	Candela
0	1255
5	1252
15	1238
25	1234
35	1163
45	913
55	537
65	92
75	0
85	0
90	0

**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Fixture
0-30	1041	34.2
0-40	1766	57.9
0-60	2928	96.1
0-90	3047	100
90-180	0	0
0-180	3047	100

**LUMINANCE**

Average Candela Degrees	Average 0° Luminance
45	39429
55	28605
65	6632
75	35
85	0

Values are nominal for haze (semi-specular) reflectors, other may vary.  
 SC = Spacing Criteria  
 UGR = Unified Glare Rating

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

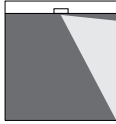
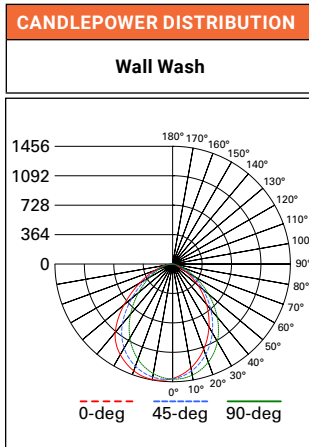
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Photometric Data

### 4" ROUND - WIDE WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

4" ROUND WALL WASH	
Test Number	P775937
Fixture Kit	HCDJBL5125CSD
Reflector	HCD41TRH - HCD41TRLWW
Lumens	3002 Lm
Efficacy	120.1 Lm/W
SC	1.14

CANDELA TABLE	
Degrees Vertical	Candela
0	1431
5	1388
15	1249
25	1050
35	820
45	580
55	352
65	161
75	78
85	12
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1064	35.4
0-40	1680	56
0-60	2643	88
0-90	3002	100
90-180	0	0
0-180	3002	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	103281
55	77343
65	47824
75	37927
85	17328

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	14.7	10.9	5.6	2.5	1.2	0.6	0.3
2	33	25.1	13.3	6.1	2.7	1.3	0.7
3	29.6	24.5	15.5	8.4	4.3	2.2	1.2
4	21.2	18.6	13.4	8.4	4.9	2.8	1.6
5	14.5	13.2	10.4	7.3	4.8	3	1.9
6	10	9.3	7.8	5.9	4.2	2.9	1.9
7	7.1	6.7	5.8	4.7	3.6	2.6	1.8
8	5.1	4.9	4.4	3.7	2.9	2.3	1.7
9	3.8	3.7	3.4	2.9	2.4	1.9	1.5
10	2.9	2.8	2.6	2.3	2	1.6	1.3

MULTIPLE UNIT FOOTCANDLES									
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			
1	18.1	17.8	17.3	16.4	12.7	15.9	16.4	12.7	15.9
2	40.9	40.9	39.1	36.8	29.5	35.8	36.8	29.5	35.8
3	39.8	42.3	38	35.1	33.3	33.9	35.1	33.3	33.9
4	31	33.7	29.7	27.2	28.3	26.2	27.2	28.3	26.2
5	22.8	24.7	21.8	20.1	21.7	19.3	20.1	21.7	19.3
6	16.6	17.8	16	14.8	16.1	14.3	14.8	16.1	14.3
7	12.2	12.9	11.8	11.1	12	10.6	11.1	12	10.6
8	9.1	9.5	8.8	8.4	9	8.1	8.4	9	8.1
9	6.9	7.2	6.7	6.4	6.8	6.2	6.4	6.8	6.2
10	5.3	5.5	5.2	5	5.3	4.9	5	5.3	4.9

### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

### CCT Multipliers - 90CRI

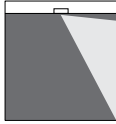
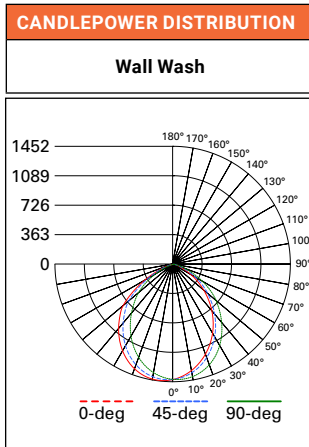
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Photometric Data

### 6" ROUND - WIDE WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

6" ROUND WALL WASH	
Test Number	P776037
Fixture Kit	HCDJBL5125CSD
Reflector	HCD61TRH - HCD61TRLWW
Lumens	3037 Lm
Efficacy	121.5 Lm/W
SC	1.16

CANDELA TABLE	
Degrees Vertical	Candela
0	1428
5	1386
15	1256
25	1074
35	850
45	601
55	346
65	127
75	41
85	6
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1065	35.1
0-40	1690	55.6
0-60	2730	89.9
0-90	3037	100
90-180	0	0
0-180	3037	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	46594
55	33098
65	16422
75	8705
85	3459

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES								
2.5' from wall (distance from fixture along wall)								
1	10.6	7.7	3.5	1.4	0.6	0.3	0.1	
2	33.4	25.9	14	6.1	2.4	1	0.5	
3	30.8	25.8	16.7	9.3	4.8	2.4	1.2	
4	21.9	19.4	14.2	9.1	5.5	3.2	1.9	
5	14.9	13.6	10.9	7.8	5.2	3.4	2.2	
6	10.2	9.6	8	6.2	4.5	3.1	2.1	
7	7.2	6.8	6	4.9	3.7	2.8	2	
8	5.2	5	4.5	3.8	3.1	2.4	1.8	
9	3.8	3.7	3.4	3	2.5	2	1.6	
10	2.9	2.8	2.6	2.3	2	1.7	1.4	

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)		
1	12.2	11.3	12	11.3	7.4	11.1		
2	40.5	41.3	39.4	36.4	29.6	35.8		
3	41.1	43.8	40.1	36.3	34.6	35.6		
4	31.8	34.7	31.1	28.1	29.2	27.5		
5	23.2	25.2	22.7	20.5	22.2	20.1		
6	16.8	18	16.4	15	16.4	14.7		
7	12.3	13	12	11.2	12.1	10.9		
8	9.1	9.6	8.9	8.4	9.1	8.2		
9	6.9	7.2	6.8	6.4	6.9	6.3		
10	5.3	5.5	5.2	5	5.3	4.9		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

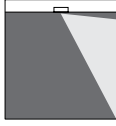
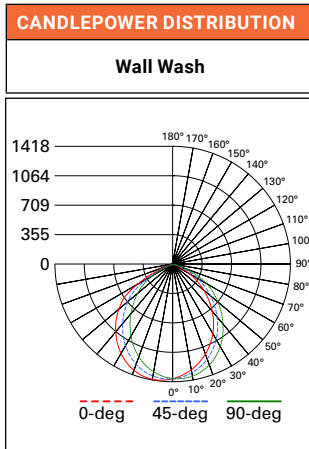
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Photometric Data

### 8" ROUND - WIDE WALL WASH DISTRIBUTION - HAZE FINISH, 2500 LUMEN MODEL, 90 CRI, 3500K

8" ROUND WALL WASH	
Test Number	P776137
Fixture Kit	HCDJBL1525CSD
Reflector	HCD81TRH - HCD81TRLWW
Lumens	3077 Lm
Efficacy	123.1 Lm/W
SC	1.17

CANDELA TABLE	
Degrees Vertical	Candela
0	1387
5	1345
15	1227
25	1059
35	847
45	602
55	346
65	123
75	32
85	4
90	0

ZONAL LUMEN SUMMARY		
Zone	Lumens	% Fixture
0-30	1046	34
0-40	1671	54.3
0-60	2753	89.4
0-90	3077	100
90-180	0	0
0-180	3077	100

LUMINANCE	
Average Candela Degrees	Average 0° Luminance
45	26014
55	18443
65	8857
75	3810
85	1576

SC = Spacing Criteria, nominal for haze (semi-specular) reflector, other may vary.

SINGLE UNIT FOOTCANDLES							
2.5' from wall (distance from fixture along wall)							
1	9.5	6.6	2.7	1	0.4	0.2	0.1
2	33.5	25.7	14	6.1	2.3	0.9	0.4
3	30.8	25.6	16.5	9.2	4.9	2.4	1.2
4	21.8	19.2	14	9	5.4	3.2	1.9
5	14.7	13.4	10.6	7.6	5.1	3.3	2.1
6	10	9.4	7.9	6.1	4.4	3.1	2.1
7	7	6.7	5.8	4.7	3.6	2.7	2
8	5.1	4.8	4.3	3.7	3	2.3	1.8
9	3.7	3.6	3.3	2.9	2.4	2	1.5
10	2.8	2.7	2.6	2.3	2	1.6	1.3

MULTIPLE UNIT FOOTCANDLES								
2.5' from wall (Distance from fixture along wall)			2.5' from wall (Distance from fixture along wall)					
1	11.2	11.4	10.5	10.2	7.3	9.9		
2	42.2	43.2	39.6	37.4	31.5	35.8		
3	42	44.8	39.9	37.1	35.6	35.6		
4	32.3	35	30.8	28.4	29.6	27.2		
5	23.3	25.2	22.3	20.7	22.3	19.8		
6	16.8	17.9	16.1	15.1	16.4	14.4		
7	12.2	12.9	11.8	11.1	12	10.7		
8	9.1	9.5	8.7	8.4	9	8		
9	6.8	7.1	6.6	6.4	6.8	6.2		
10	5.3	5.4	5.1	5	5.2	4.8		

#### Photometric Multipliers (Nominal Lumen Values)

500 Lumen	750 Lumen	1000 Lumen	1500 Lumen	2000 Lumen	2500 Lumen	3000 Lumen	3500 Lumen	4000 Lumen	4000 Lumen	4500 Lumen	5000 Lumen
0.21	0.32	0.41	0.63	0.82	1.00	1.23	1.41	1.58	1.56	1.72	1.88

Multipliers for relative lumen values with other series models.

#### Color Finish Multipliers

Finish code	C	H	W/WB	BB
Finish	Specular Clear	Haze (Semi-Specular)	Matte White	Matte Black
Multiplier	1.08	1.00	0.94	0.59

Multipliers for relative lumen values with other color finishes.

#### CCT Multipliers – 90CRI

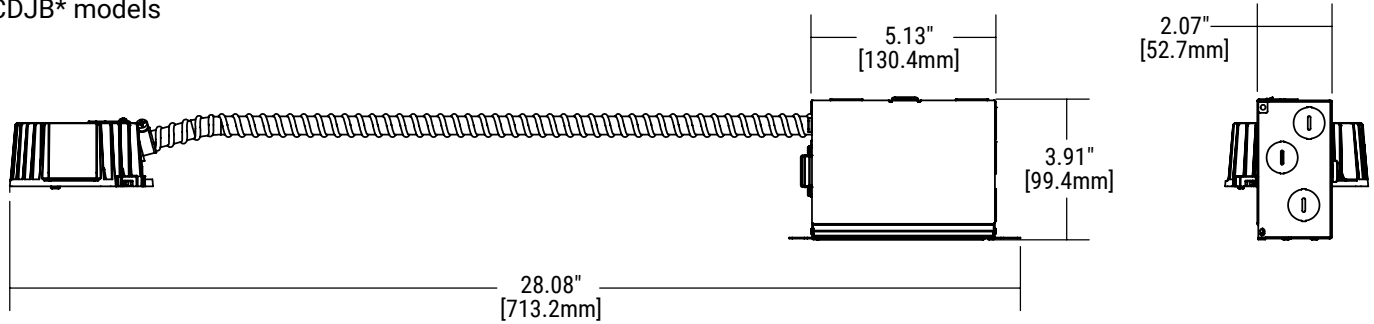
2700K	3000K	3500K	4000K	5000K
0.97	0.98	1.00	1.01	1.03

Multipliers for relative lumen values with other series color temperatures.

## Dimensions

### Junction Box Fixture Kit

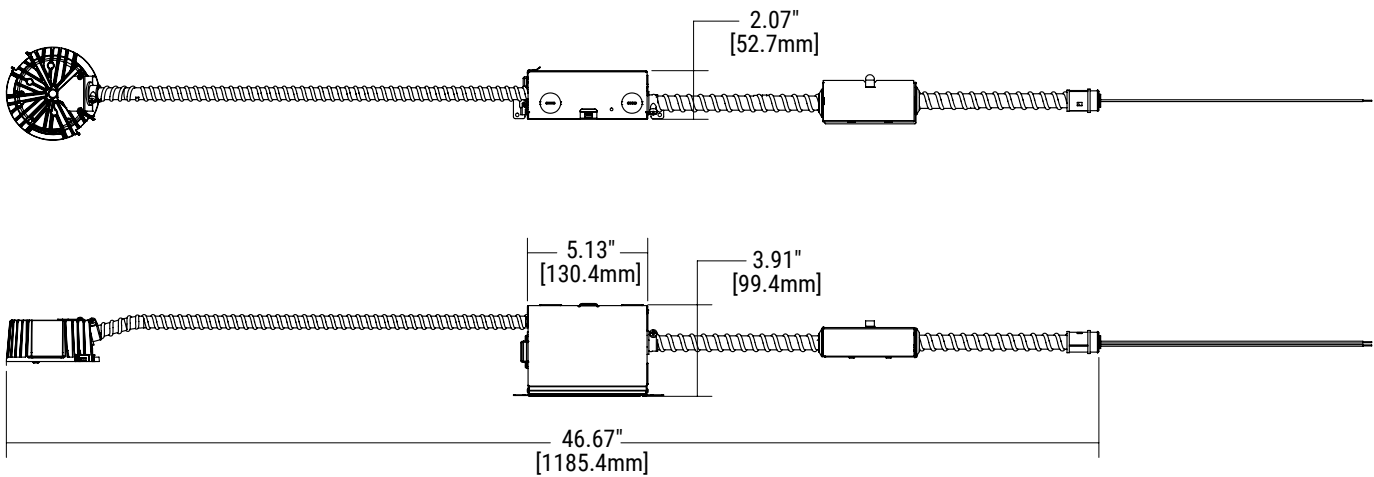
HCDJB\* models



### Quick Connect Fixture Kit

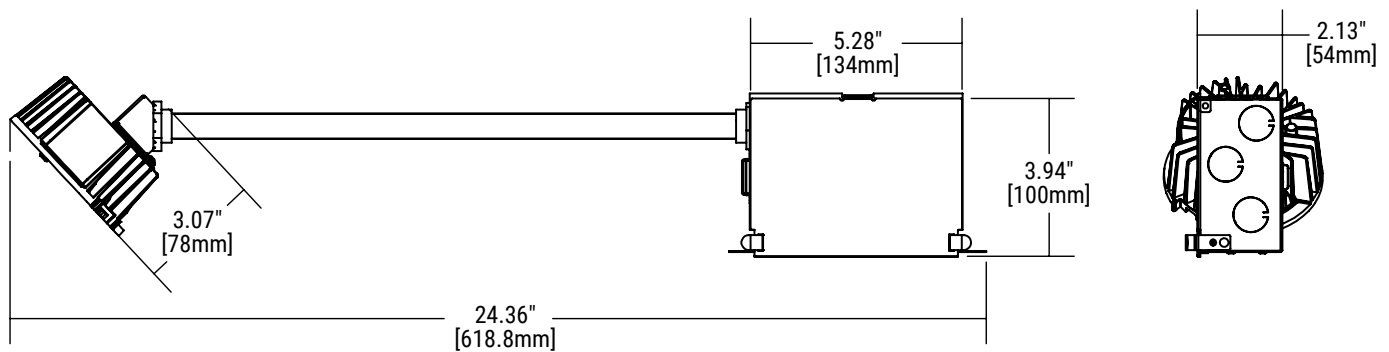
HCDQC\* models

HCDQC\*347 models (Canada only)



### Chicago Plenum Fixture Kit

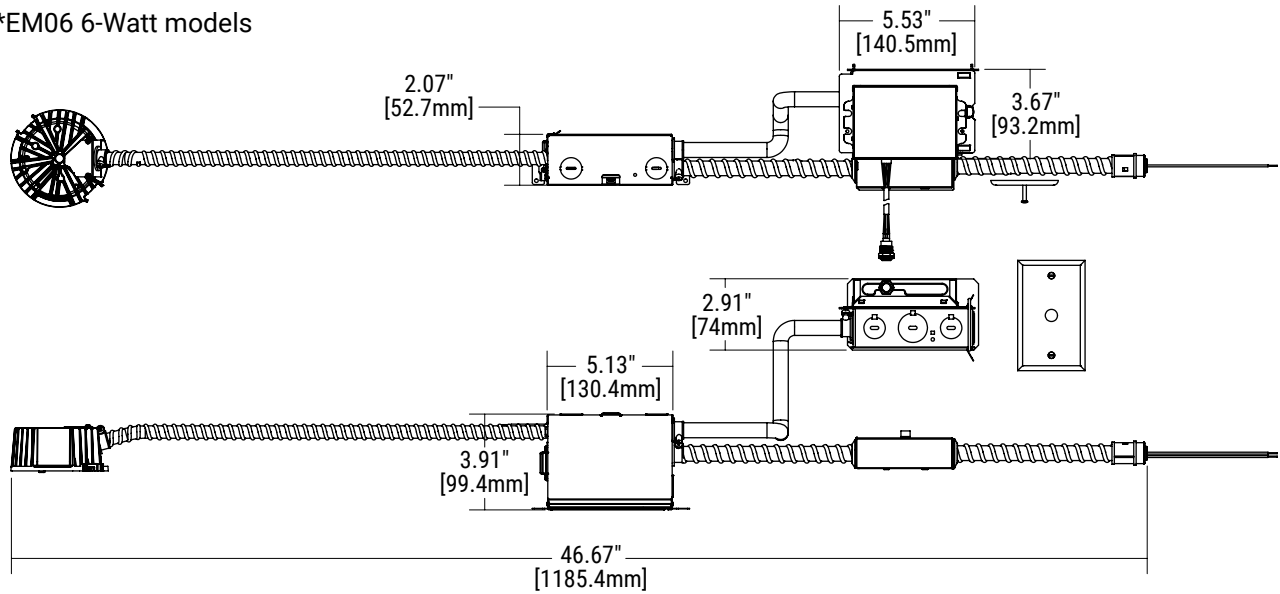
HCDCP\* models



## Dimensions

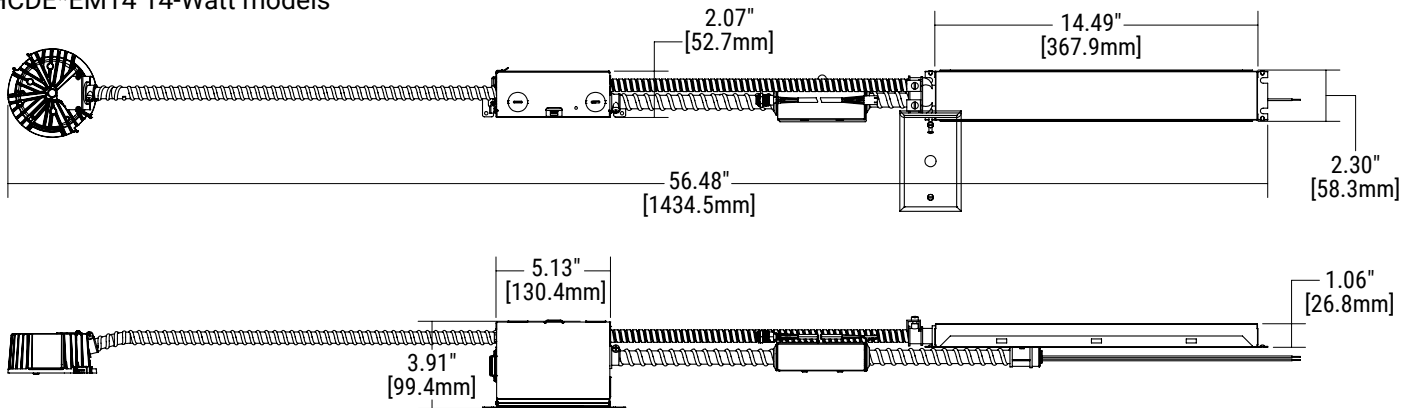
### Emergency Fixture Kit

HCDE\*EM06 6-Watt models



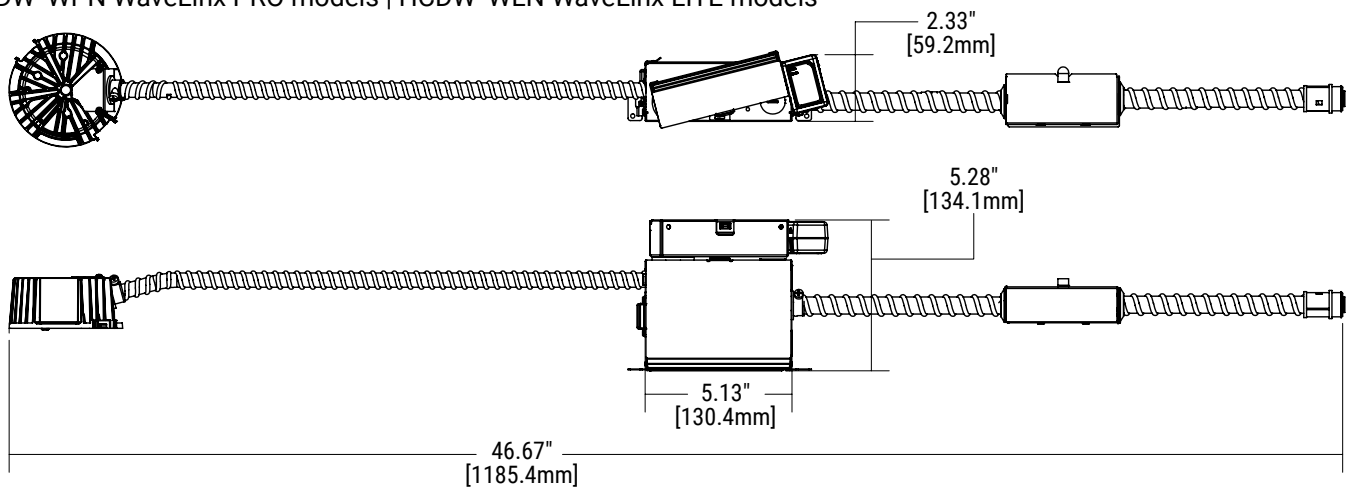
### Emergency Fixture Kit

HCDE\*EM14 14-Watt models



### WaveLinx Wireless Fixture Kit

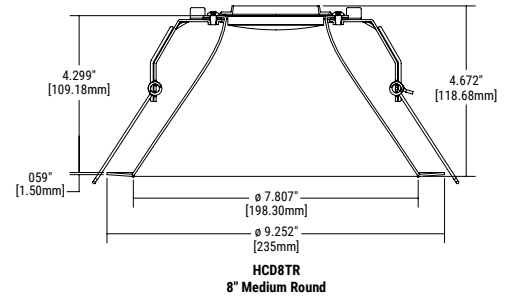
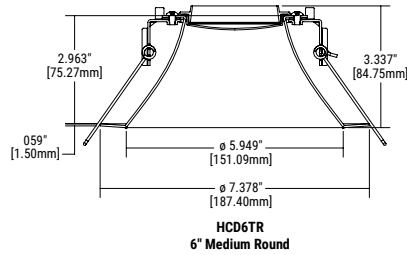
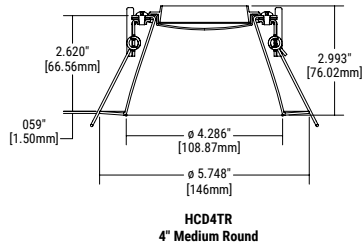
HCDW\*WPN WaveLinx PRO models | HCDW\*WLN WaveLinx LITE models



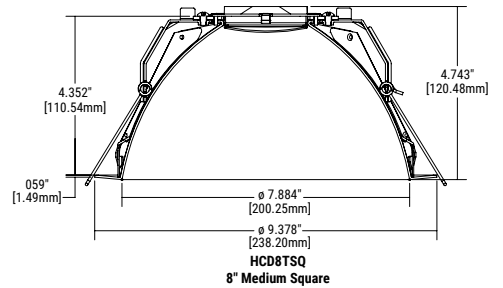
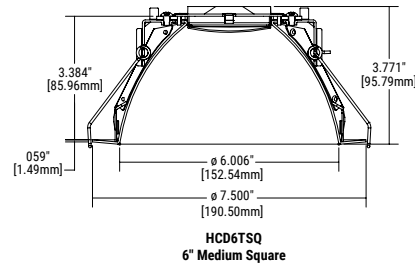
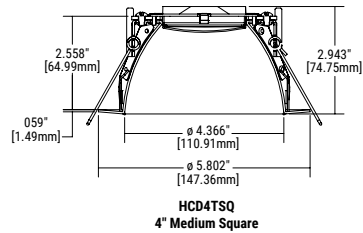
## Dimensions

### Reflectors

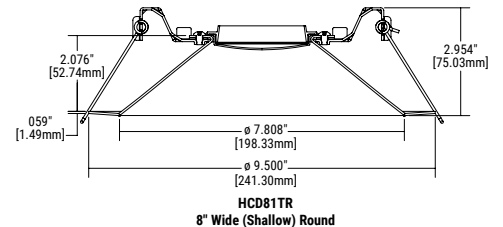
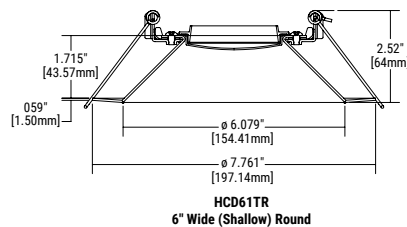
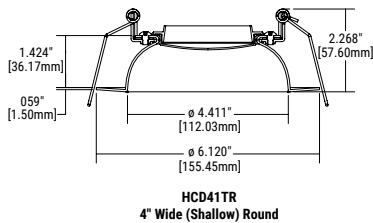
#### Medium Round Reflectors



#### Medium Square Reflectors

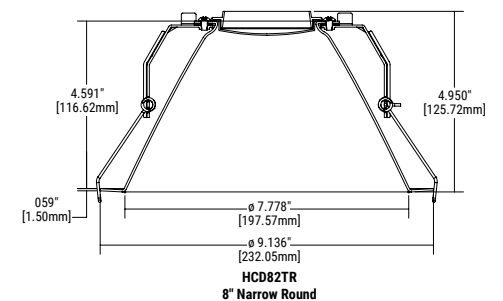
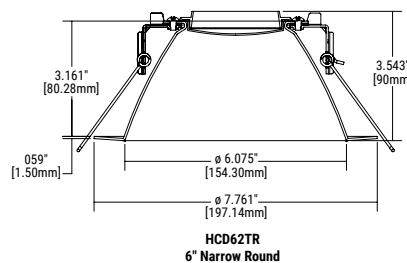
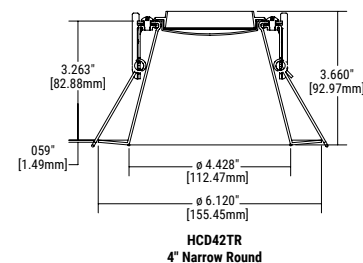


#### Wide (Shallow) Reflectors



#### Narrow Reflectors

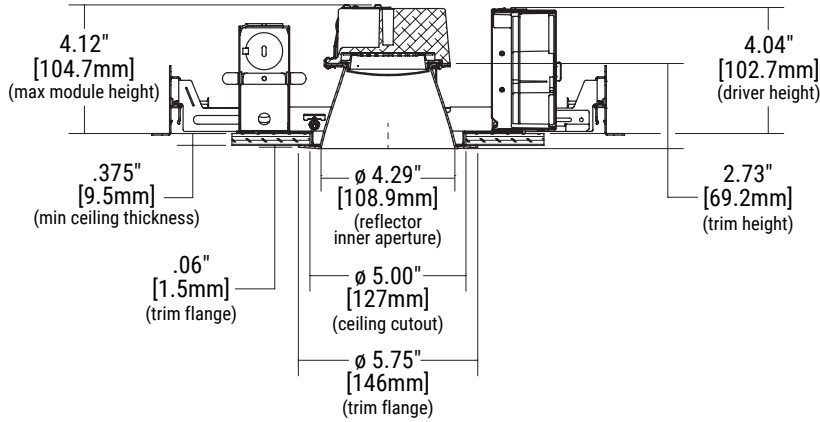
Flange & optic dimensions match HC Series Round Reflectors (41x, 61x, 81x)



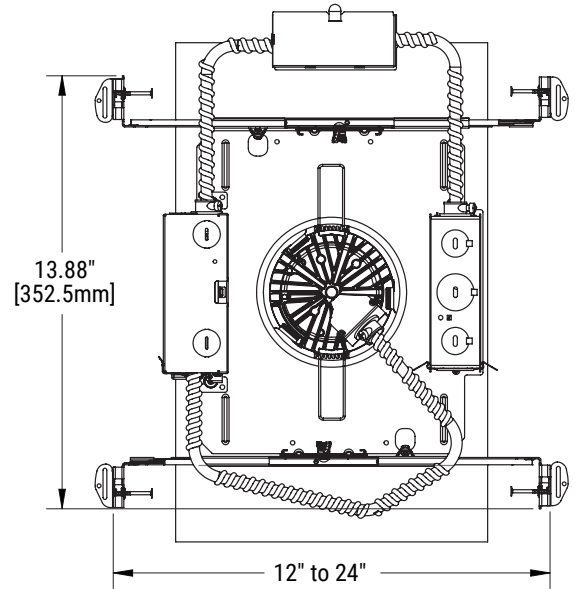
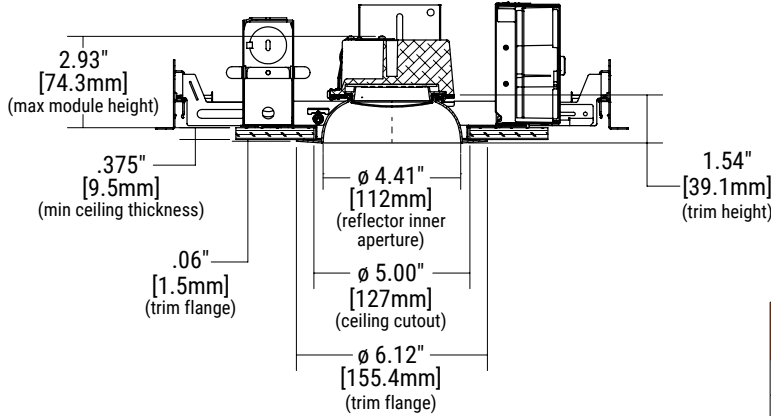
## Dimensions

### 4" New Construction - Round

#### HCD4TR\*



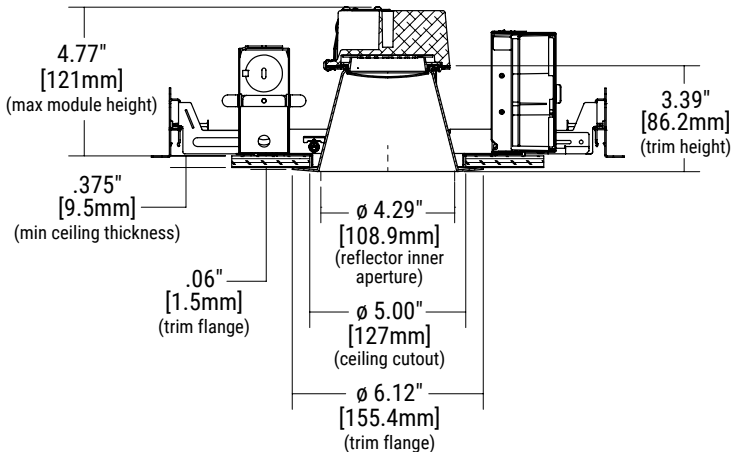
#### HCD41TR\*



Model	Distribution	Max. Module Height	Trim Height	Trim Flange
HCD42TR	Narrow	4.77"	3.39"	6.12"
HCD4TR	Medium	4.12"	2.73"	5.75"
HCD41TR	Wide	2.93"	1.54"	6.12"

\* Max. height with hanger bar bracket 4.0".

#### HCD42TR\*

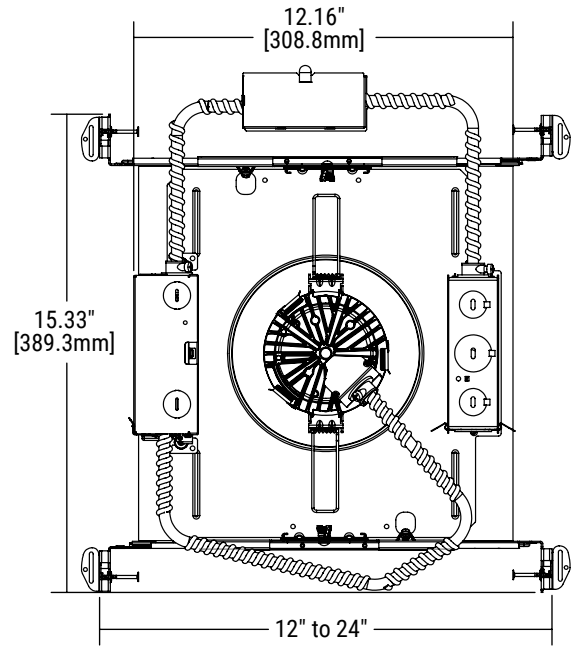
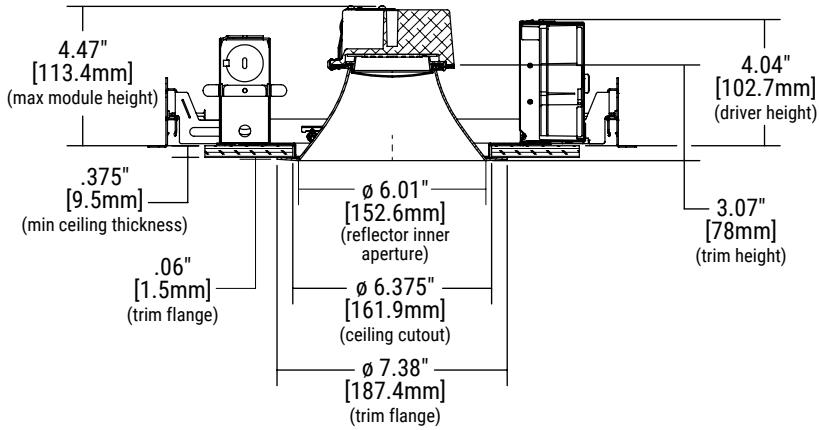




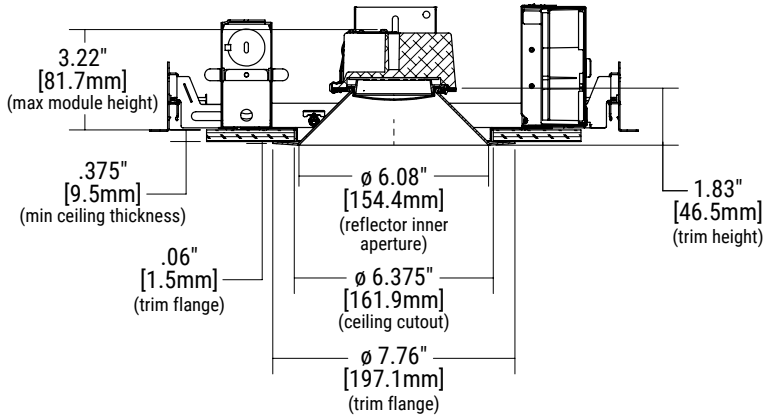
## Dimensions

### 6" New Construction - Round

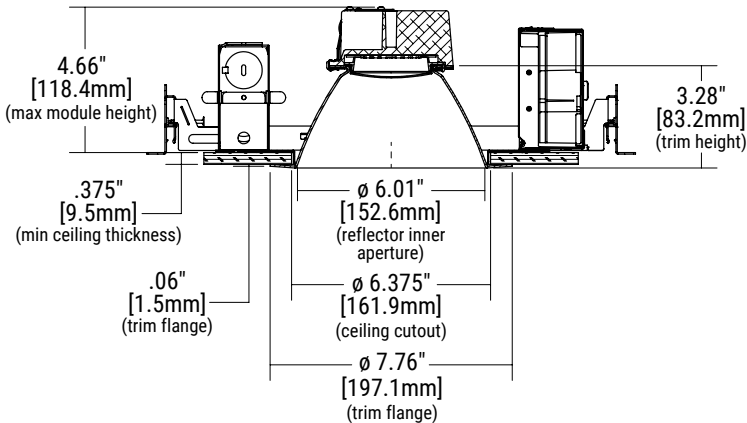
#### HCD6TR\*



#### HCD61TR\*



#### HCD62TR\*



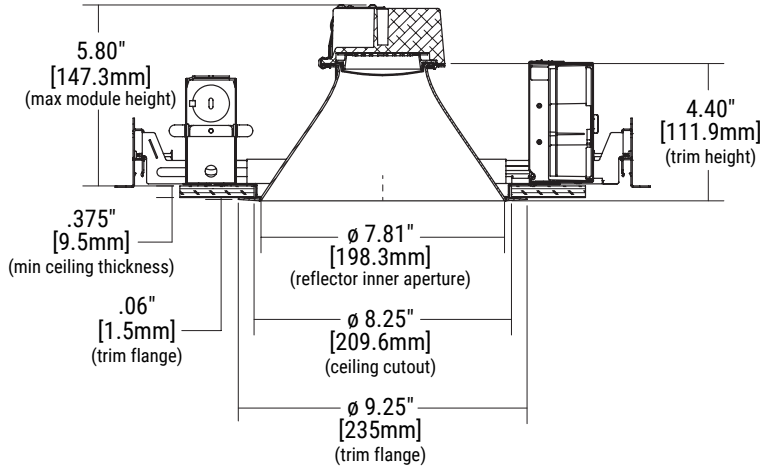
Model	Distribution	Max. Module Height	Trim Height	Trim Flange
HCD62TR	Narrow	4.66"	3.28"	7.76"
HCD6TR	Medium	4.47"	3.07"	7.38"
HCD61TR	Wide	3.22"	1.83"	7.76"

\* Max. height with hanger bar bracket 4.0".

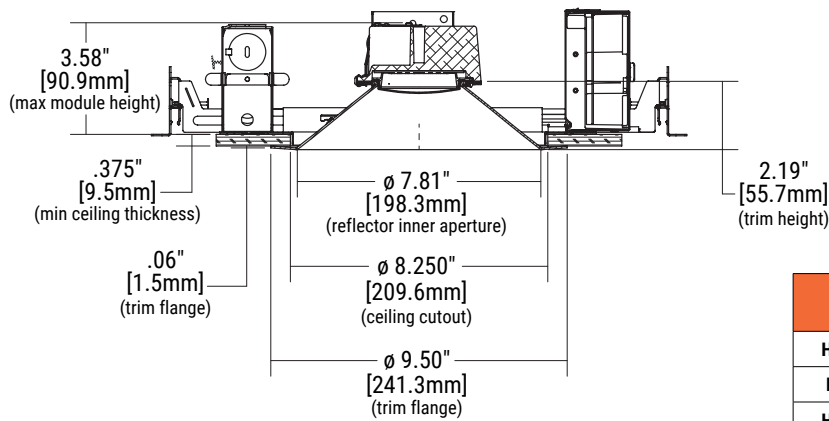
## Dimensions

### 8" New Construction - Round

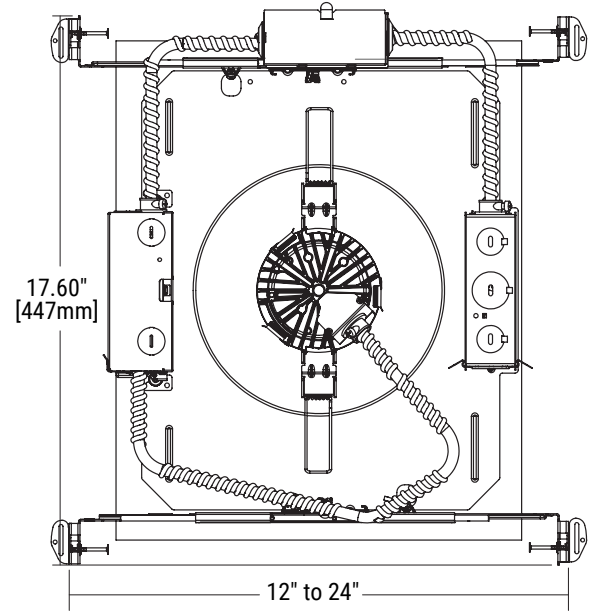
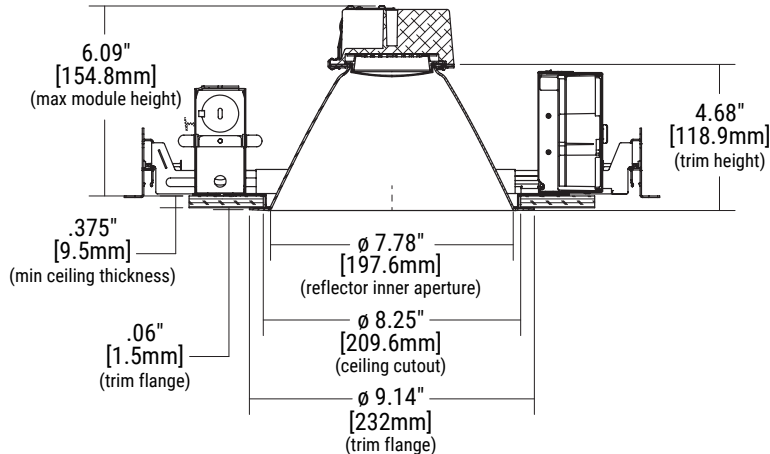
#### HCD8TR\*



#### HCD81TR\*



#### HCD82TR\*



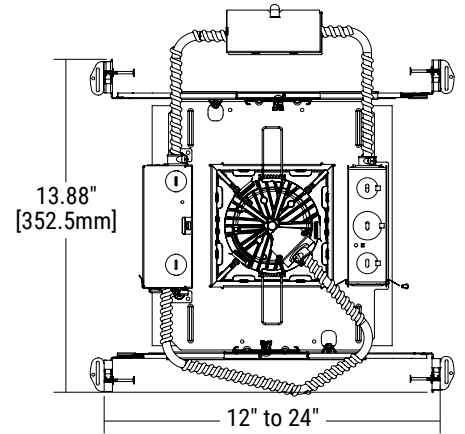
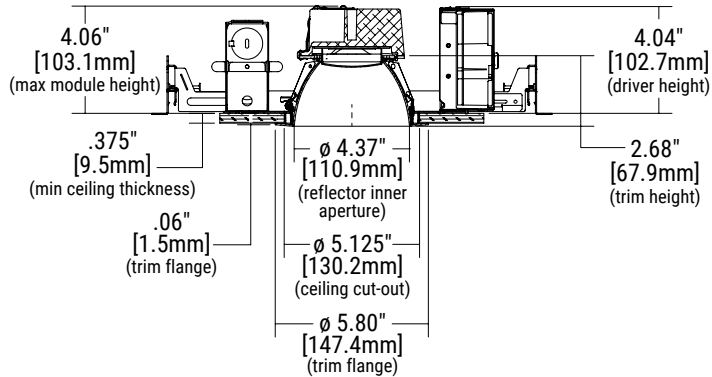
Model	Distribution	Max. Module Height	Trim Height	Trim Flange
HCD82TR	Narrow	6.09"	4.68"	9.14"
HCD8TR	Medium	5.80"	4.40"	9.25"
HCD81TR	Wide	3.58"	2.19"	9.50"

\* Max. height with hanger bar bracket 4.0".

## Dimensions

### 4" New Construction - Square

#### HCD4TSQ\*

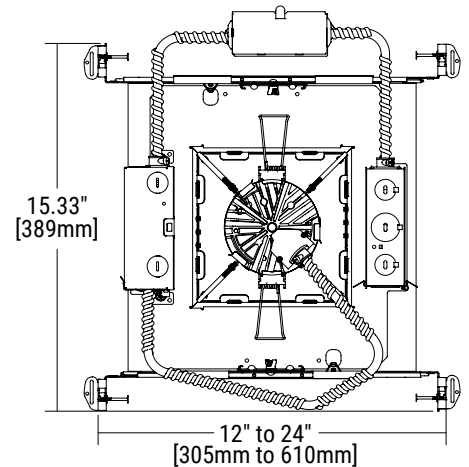
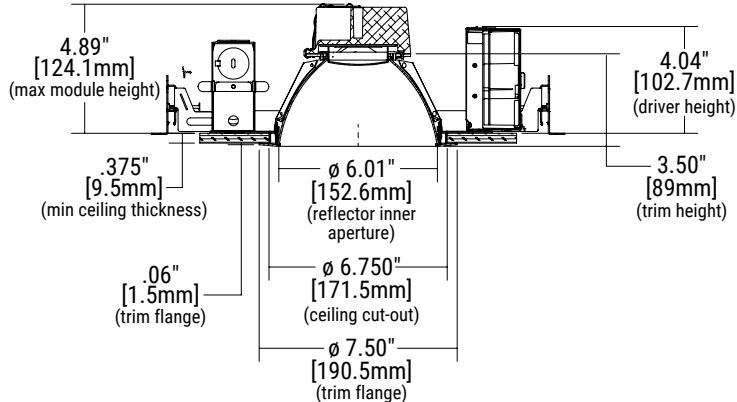


Size	Max. Module Height	Trim Height	Trim Flange
4"	4.06"	2.68"	5.80"

\* Max. height with hanger bar bracket 4.0".

### 6" New Construction - Square

#### HCD6TSQ\*

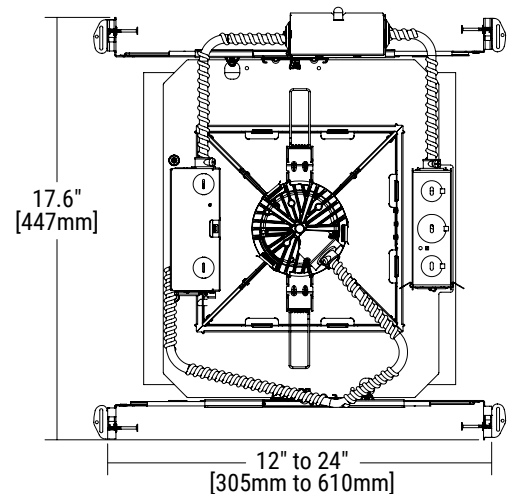
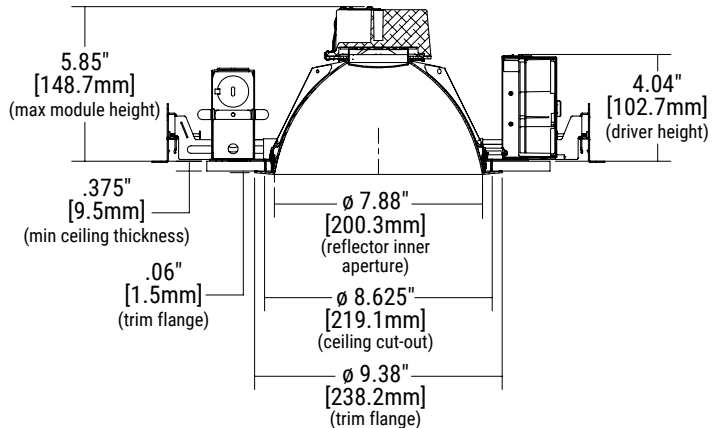


Size	Max. Module Height	Trim Height	Trim Flange
6"	4.89"	3.50"	7.50"

\* Max. height with hanger bar bracket 4.0".

### 8" New Construction - Square

#### HCD8TSQ\*



Size	Max. Module Height	Trim Height	Trim Flange
8"	5.85"	4.48"	9.38"

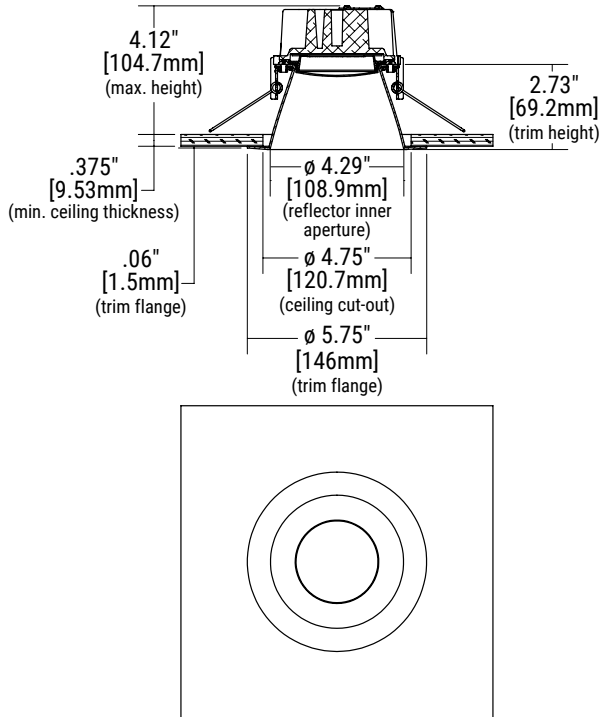
\* Max. height with hanger bar bracket 4.0".

## Dimensions

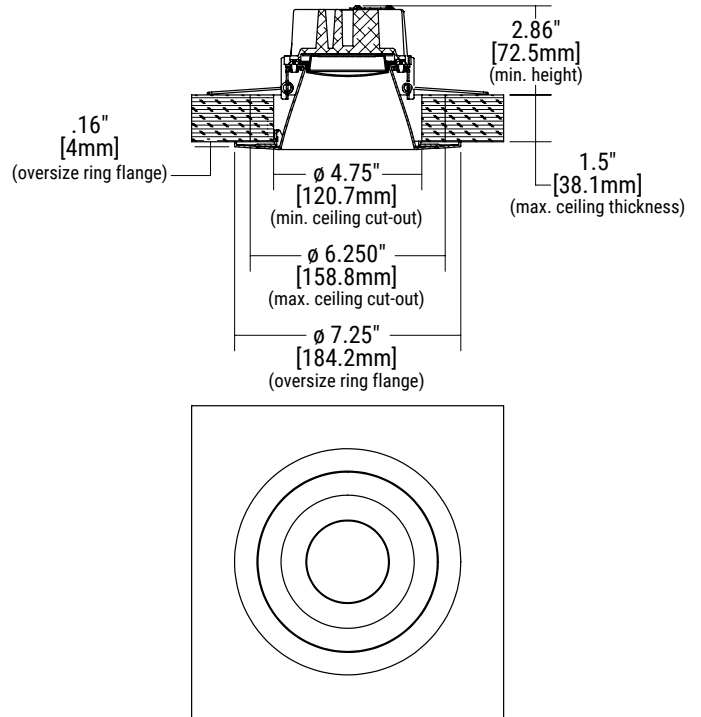
### 4" Retrofit - Medium Round Reflector & Oversized Goof Ring

(Rings designed for optimum fit with medium distribution series reflectors, but may be used with others as noted below)

#### HCD4TR\*



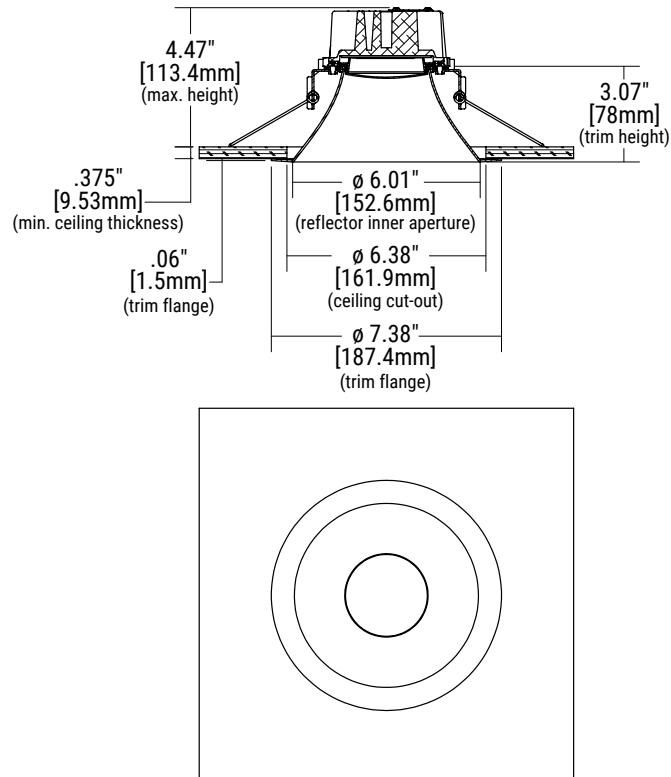
#### HCD4TR\* + HCD4GR\*



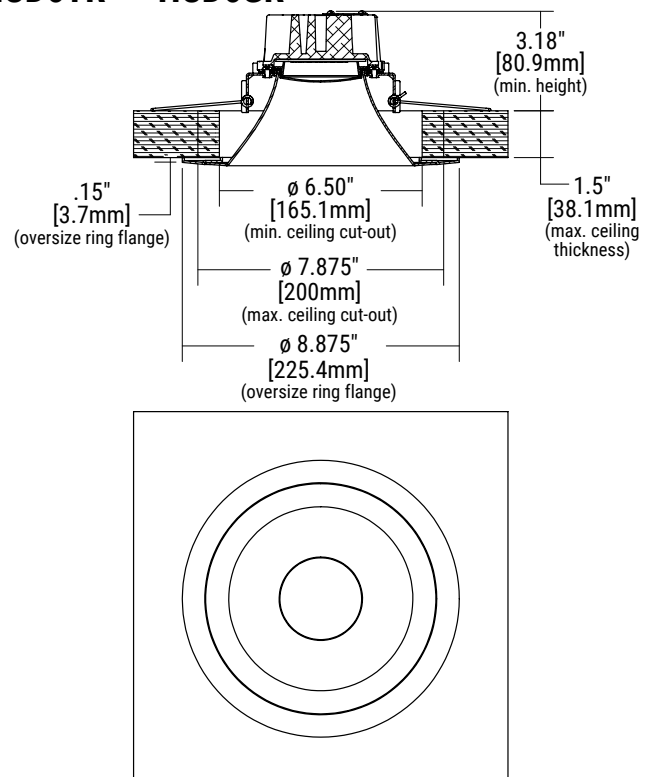
### 6" Retrofit - Medium Round Reflector & Oversized Goof Ring

(Rings designed for optimum fit with medium distribution series reflectors, but may be used with others as noted below)

#### HCD6TR\*



#### HCD6TR\* + HCD6GR\*

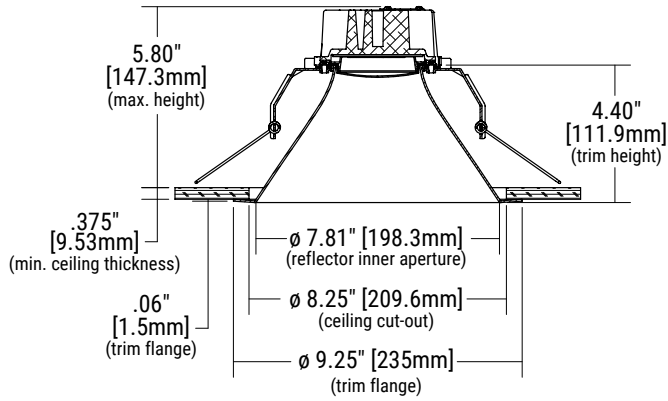


## Dimensions

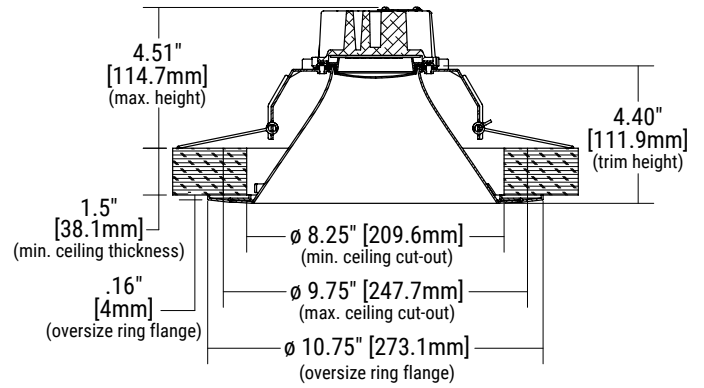
### 8" Retrofit - Medium Round Reflector & Oversized Goof Ring

(Rings designed for optimum fit with medium distribution series reflectors, but may be used with others as noted below)

#### HCD8TR\*



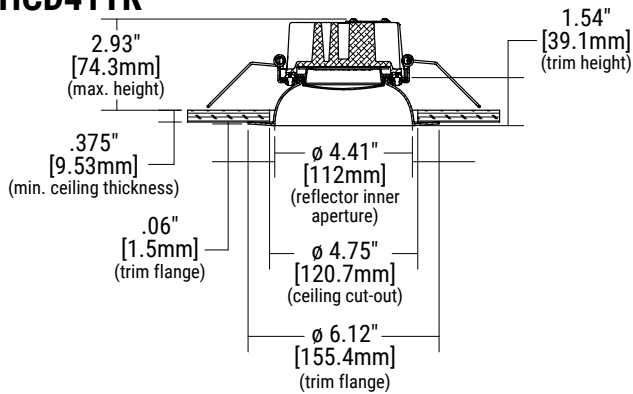
#### HCD8TR\* + HCD8GR\*



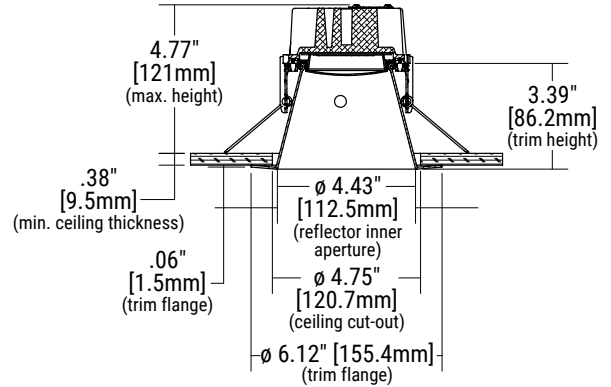
## Dimensions

### 4" Retrofit - Wide (Shallow) Round Reflector & Narrow Round Reflector

#### HCD41TR\*

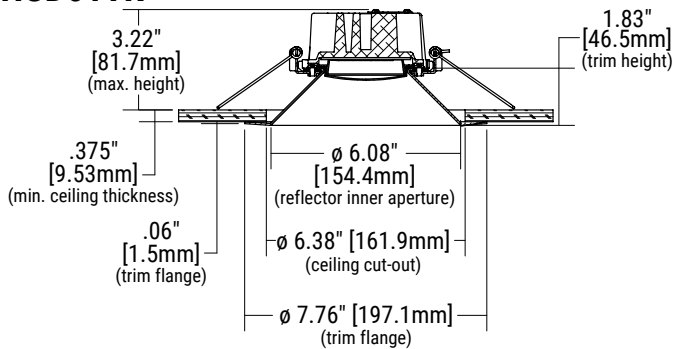


#### HCD42TR\*

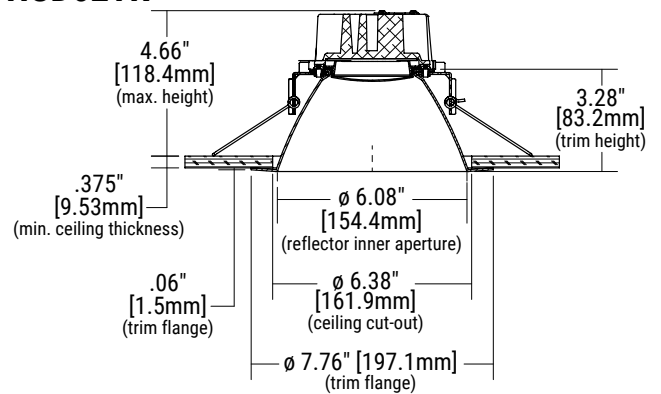


### 6" Retrofit - Wide (Shallow) Round Reflector & Narrow Round Reflector

#### HCD61TR\*



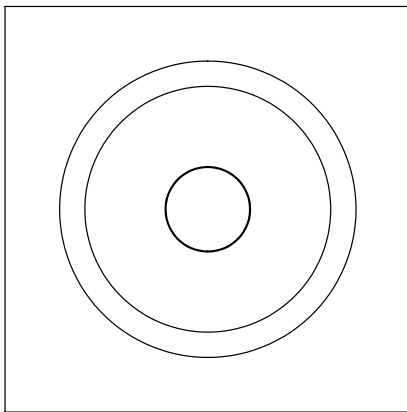
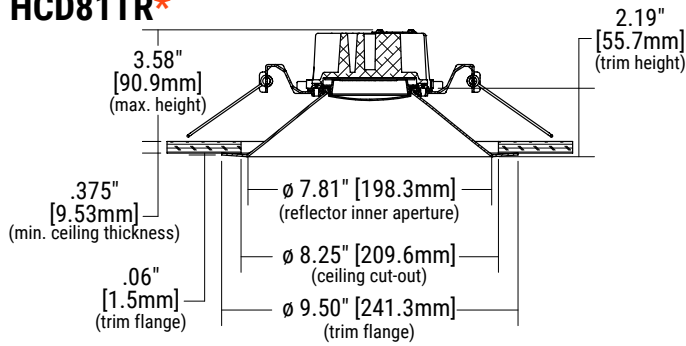
#### HCD62TR\*



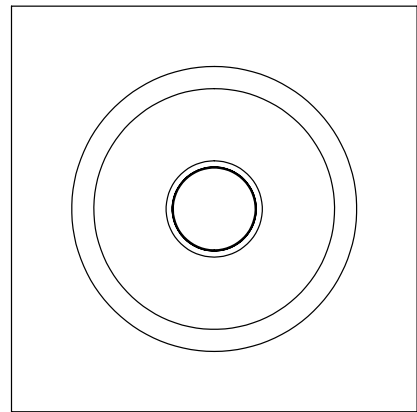
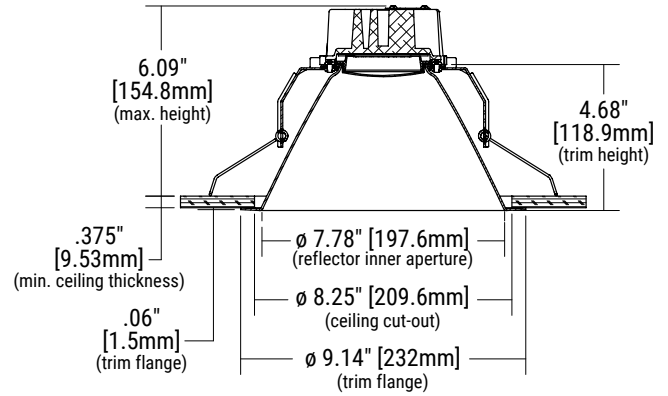
## Dimensions

### 8" Retrofit - Wide (Shallow) Round Reflector & Narrow Round Reflector

#### HCD81TR\*



#### HCD82TR\*

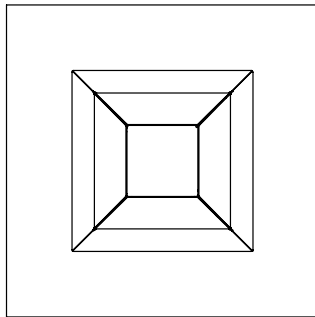
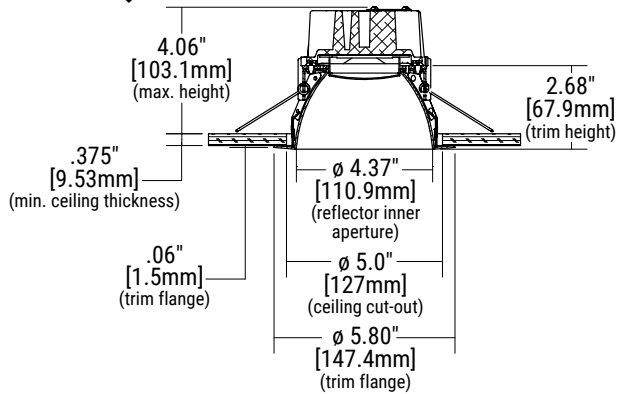


## Dimensions

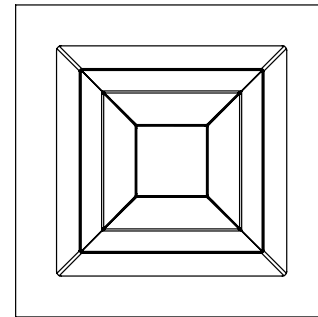
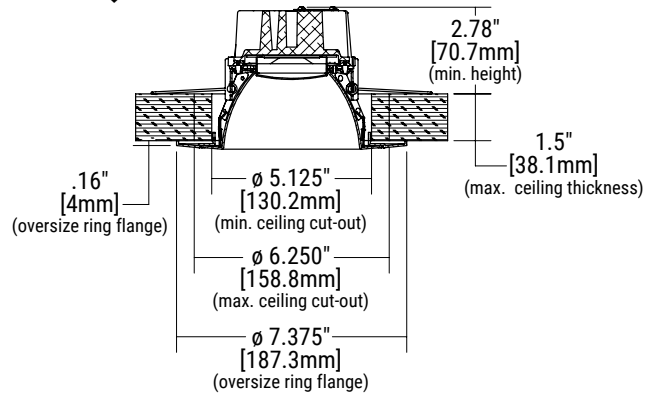
### 4" Retrofit - Square Reflector & Oversized Goof Ring

(Rings designed for optimum fit with medium distribution series reflectors, but may be used with others as noted below)

#### HCD4TSQ\*



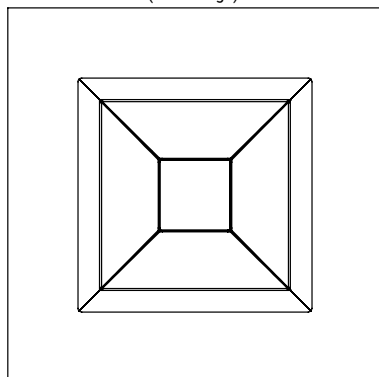
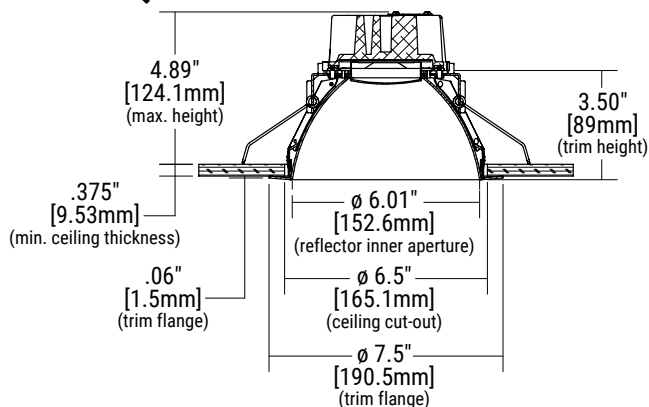
#### HCD4TSQ\* + HCD4SGR\*



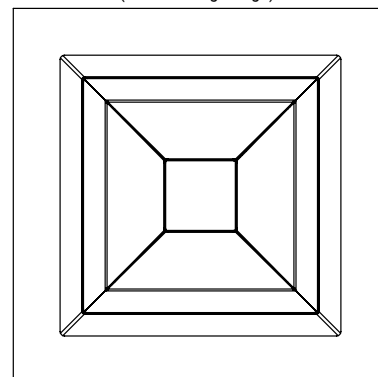
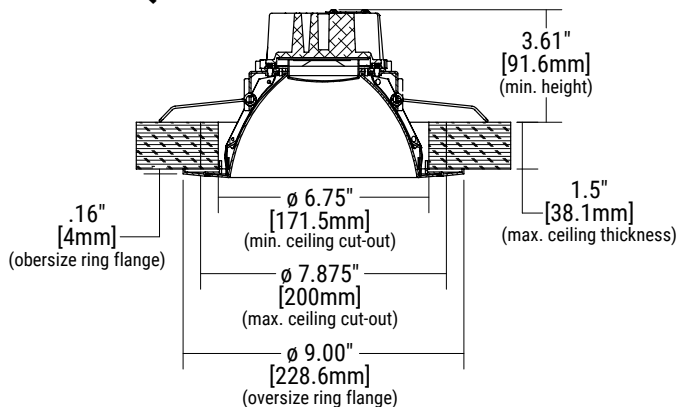
### 6" Retrofit - Square Reflector & Oversized Goof Ring

(Rings designed for optimum fit with medium distribution series reflectors, but may be used with others as noted below)

#### HCD6TSQ\*



#### HCD6TSQ\* + HCD6SGR\*



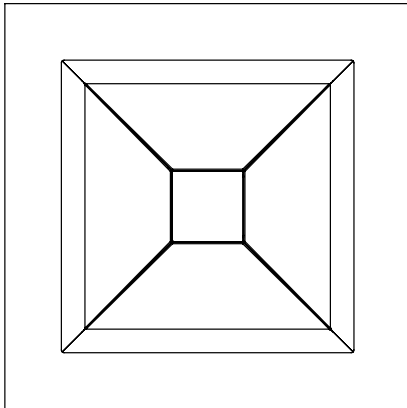
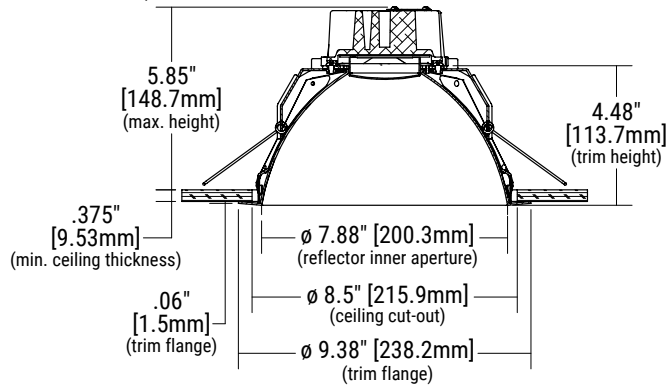


## Dimensions

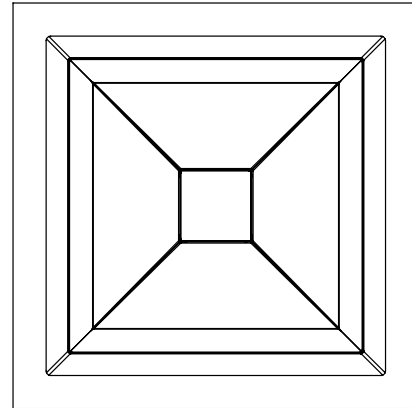
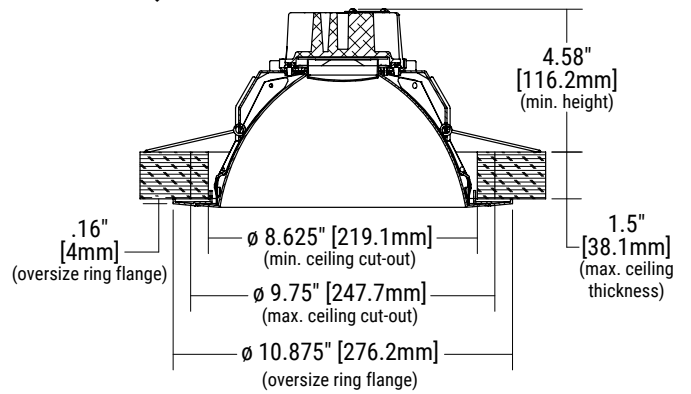
### 8" Retrofit - Square Reflector & Oversized Goof Ring

(Rings designed for optimum fit with medium distribution series reflectors, but may be used with others as noted below)

#### HCD8TSQ\*



#### HCD8TSQ\* + HCD8SGR\*



## Connected Solutions



### WaveLinX LITE Wireless Node - WLN

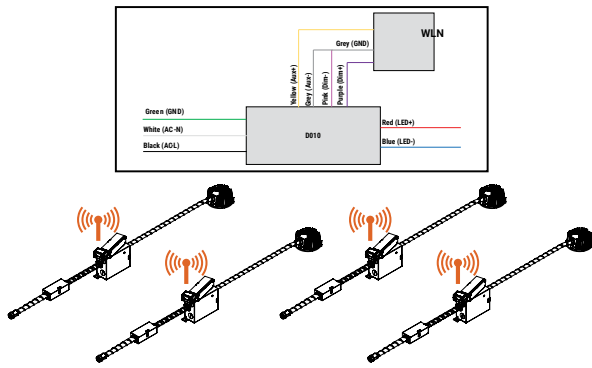
WaveLinX LITE devices only compatible with the WaveLinX LITE system.

- Intuitive Android™ or Apple® iOS® app for basic system code compliant set up and configuration via Bluetooth
- Up to 28 unique areas per project site (WaveLinX LITE Bluetooth network)
- Up to 50 devices for an area, any one of 16 control zones, up to 6 occupancy sets, and custom lighting scenes
- Refer to the WaveLinX system specifications for details

#### WaveLinX mobile app settings



#### WaveLinX LITE Wireless Node (WLN) Wiring Diagram



#### WaveLinX LITE Bluetooth Enabled System



### WaveLinX PRO Wireless Node - WPN

WaveLinX PRO devices only compatible with the WaveLinX PRO system.

- WaveLinX Wireless functionality configures zones and customizes settings from one secure mobile app
- Automatic code commissioning that meets the strictest codes
- Fixtures and sensors integrate with WaveLinX Area Controller, Wall Stations, and Control Devices
- Stand-Alone Offices or Entire Building Network Installations

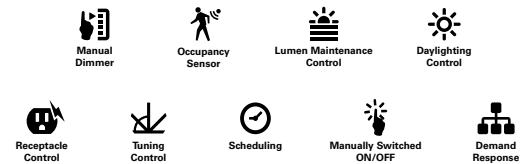
**Downlights with wireless communication**  
Highly efficient LED fixtures

**WaveLinX Area Controller**  
Provides centralized coordination of multiple area control options

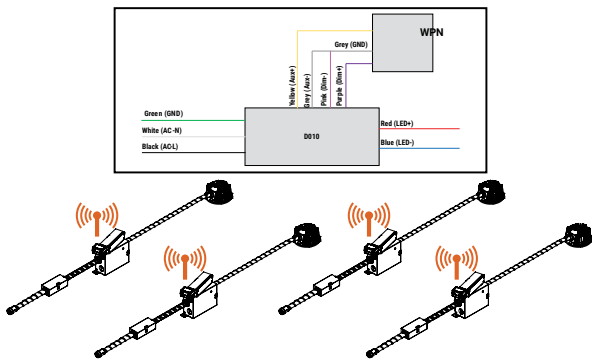
**Wireless Wall Station/Receptacle**  
Provides customized wireless control of each area

**Mobile Applications**  
Provides personalized, local control from a tablet or smartphone

#### WaveLinX mobile app settings



#### WaveLinX PRO Wireless Node (WPN) Wiring Diagram



#### WaveLinX CORE Building Management Integration

