LIGHTOLIER
by signify

# Downlighting

## Calculite 3"

## C3RDL Round downlight

Project:
Location:
Cat.No:
Type:
Lamps: Qty:
Notes:

**Calculite** features industry leading visual comfort, excellent uniform illumination over time, and patented installation flexibility. Optical cutoff of 50° coupled with exceptional 2 Step MacAdam ellipse color consistency make the Calculite 3" downlight an ideal choice for open office, retail, hospitality, healthcare, and residential applications.

**Complete luminaire =** Frame + Engine + Trim + Accessories (optional)
**Complete remodel luminaire =** Engine + Trim + Accessories (optional)

## Frame

**Note:** For remodeler installations, order light engine and trim only (no frame needed).

**example:** 3RAS

| Series | Installation | Voltage / Options | |
|---|---|---|---|
| **3R** Uniframe 3" round frame | **N** New Construction Non-IC | **–** Universal 120/277/347V[1]<br>**LC** Chicago plenum<br>**3** 347V (for non-0-10v configurations)[3] | **EM6** Emergency, 6W Self-Test/Self-Diagnostic[2]<br>**RADIO** Integral Interact Pro RF sensor (requires above ceiling access – enables wireless connected lighting control) |
| | **A** AirSeal IC (1000lm max) | **–** Standard Universal 120/277/347V[1] | **S** Shallow Universal 120/277/347V[1, 4] |

## Engine

**example:** C3L10930NZ10US

| Series | Lumens | CRI / CCT | Beam | Dimming | Voltage | Plenum |
|---|---|---|---|---|---|---|
| **C3L** Calculite 3" light engine | **05** 500lm<br>**07** 750lm<br>**10** 1000lm<br>**15** 1500lm[5]<br>**18** 1800lm[5] | **927** 90CRI / 2700K<br>**930** 90CRI / 3000K<br>**935** 90CRI / 3500K<br>**940** 90CRI / 4000K | **N** Narrow (33°)<br>**M** Medium (55°)<br>**W** Wide (62°) | **Z10** 0-10V 1% | **U** Universal (120V/277V/347V)<br>**3** 347V (0-10v only)[6,7] | **–** Standard |
| | | | | **L** Lutron PEQ0 (Dim to 0.1%) | **U** Universal (120V/277V/347V) | |
| | **10** 1000lm | **9D2W** 90CRI / 3000K-1800K for Non-IC (N) frames only | | **E** Electronic low voltage | **1** 120V | |
| | **07** 750lm<br>**10** 1000lm | **927** 90CRI / 2700K<br>**930** 90CRI / 3000K<br>**935** 90CRI / 3500K<br>**940** 90CRI / 4000K | **N** Narrow (33°)<br>**M** Medium (55°)<br>**W** Wide (62°) | **Z10** 0-10V 1% | **U** Universal (120V/277V/347V)<br>**3** 347V (0-10v only)[6,7] | **R** Remodeler[8] (120/277V only)<br>**S** Shallow |
| | | | | **E** Electronic low voltage | **1** 120V | |

## Trim

**example:** C3RDLBTF

| Series | Style | Reflector | Flange | Flange | Options |
|---|---|---|---|---|---|
| **C3R** Calculite 3" round trim | **DL** Downlight | **BK** Black (anodized)<br>**CL** Specular clear<br>**CC** Comfort clear<br>**CD** Comfort clear diffuse<br>**CZ** Champagne bronze (anodized) | **–** White (matte)<br>**P** Matching reflector<br>**F** Flangeless[9] | **–** Standard depth with 50° cutoff | **IEM6** Trim mounted EM test switch (standard depth trims only) |
| | | **WH** White (matte) | **–** White (matte)<br>**F** Flangeless[9] | **–** Standard depth with 50° cutoff<br>**S** 1" regress cast alum. (wide beam only) | |
| | | **WT** Textured white (painted) | **P** Matching reflector<br>**F** Flangeless[9] | | |
| | | **BT** Textured black (painted)<br>**BZ** Bronze (painted)<br>**D** Aluminum diffuse (painted) | **–** White (matte)<br>**P** Matching reflector<br>**F** Flangeless[9] | | |

## Accessories

**SBA**
Interact Ready System Bridge Accessory (refer to Philips System Bridge Accessory specification sheet for options and ordering details)[10]

**CAEM6**
Field installable Bodine BSL6 6W battery pack with self-test/ self-diagnostic for use with new construction frames, 120-277V

**CA3RFT**
Mud-in ring for use in flangeless installs (ordered with a flangeless trim)

(order & install separately)

1. Universal 120-347V is for 0-10v (Z10) dimming configurations only. For 347V non-Z10 dimming, order 347V (3) frame with (U) light engine/trim.
2. Emergency (EM6) frame is compatible with reflector mounted test switch when trim is ordered with IEM6 option code (not compatible with 347V).
3. Not compatible with electronic low voltage light engine dimming option (E).
4. Must order shallow IC frame (S), shallow engine (S) for complete shallow assembly. Standard depth and regress (S) trims are compatible with shallow light engines (S).
5. The 1500lm (15) and 1800lm (18) options are not available with standard AirSeal IC frame (3RA-).
6. Specify standard UNV frame for use with 347V light engines.
7. The 347V light engine voltage option is available only with Z10 dimming option. For other dimming protocols order (U) light engine and 347V (3) frame.
8. For remodeler installations, order light engine and trim only (no frame needed).
9. Flangeless (F) trims require CA3RFT mud-in accessory for installation.
10. Requires IRT9015 IR remote & Interact Pro App for commissioning.

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# C3RDL Calculite 3"

## Round downlight

### Frame-in-kits

**New construction:**
Galvanized stamped steel for dry or plaster ceilings. Preinstalled telescoping mounting bars from 13" to 24". For 4' distances, use 1/2" EMT, 1-1/2" x 1/2" U or C channel.

**Max ceiling thickness is 1.25" (32mm)**

**Patented install mounting frame:**

- Pre-installed mounting bars for fast and tool-less installs into T-grid & hat channel ceilings.
- Close-cut aperture design eliminates possibility of gap between ceiling opening and reflector flange.
- Separate wiring compartment for wiring frame to building allows inspection prior to light engine install.
- Simple plug-and-play connection between frame and light engine from below ceiling.

### Dimming

All configurations are FCC Class A unless otherwise specified.

- Advance 0-10V 1% (Z10)
- Lutron PEQ0 Hi-lume Premier 0.1% EcoSystem
- Electronic low voltage (ELV) - Remodel and AirSeal IC Shallow are FCC Class B
- Dim to Warm (D2W) - option changes CCT from 3000K to 1800K gradually as it dims

### Optical systems

**Quality of light:** 2 SDCM ensures color consistency from fixture to fixture and over the luminaire's long lifetime.

**Construction:** Precision spun high grade aluminum reflectors with options for anodized or painted finishes. Shallow die cast trims available in painted finish.

**Comfort throughout the space:** True 50° physical cutoff and 45° reflected cutoff.

### Light engine

Quick connect power pack allow for easy installation and replacement from below ceiling with no need for additional wiring. This allows for:

- Frame and ceiling installation to be performed while still finalizing details such as lumen packages, CCT and control type.
- Easy replacement of electronics at end of life with minimal wasted material and labor required.
- Ease and upgradability of technology.
- Predicted 70% lumen maintenance to 57,000 hrs.
- Max operating ambient temperature of 30°C.
- 347V light engines are 0-10v dimming only and include dedicated 347V driver for use with universal 120/277/347V (U) frames. For 347V and non-0-10v dimming, order (U) light engine and 347V (3) frame (includes step down transformer).

### Emergency

Bodine BSL6 6W battery pack with self-test/diagnostic functionality. Factory or field mounted to frame.

- For trim with integral emergency test switch, order trim with IEM6 option (ex: C3RDLCCIEM6).
- For remote ceiling mounted test switch, order standard trim (ex: C3RDLCC).
- Optional accessory ceiling mounting plate available (CAEM6TSCP) for remote mounted test switch.
- Refer to Calculite-LyteProfile-EasyLyte Emergency Battery Pack specification sheet for more details.

### Options and accessories

**Field Installed Emergency:** Refer to Calculite-LyteProfile-EasyLyte Emergency Battery Pack specification sheet for more details.

**CAEM6:** Field install EM6 kit with Bodine BSL6 6W battery pack with self-test/self-diagnostic, mounts to new construction frames. Includes remote ceiling plate for test switch. To mount test switch to trim for new construction frame, order trim with IEM6 option code (e.g. C3RDLCCIEM6).

**CAEM6TSCP:** Ceiling cover plate for remote mounted EM6 test switch. ½" (25mm) hole, 4⅜" (109mm) x 2¾" (69mm) rectangular. Includes two mounting screws.

**Flangeless mud-in ring:** Use **CA3SAAFT** for use with flangless plaster installations.

**Lens Film Accessories:** Trim may accept up to one (1) field installed optical films with a total overall thickness up to 0.020" (1.5mm).

### Title 24 exceptions

- BK and CZ finishes
- Must be installed in shallow AirSeal IC Frame
- Must be ELV and 750lm or 1000lm only

### ENERGY STAR® exceptions

- BZ and CZ finishes
- 347V & Emergency voltage/options
- Lutron configurations
- Dim to Warm configurations

### Labels and listings

- cULus listed for wet locations
- ENERGY STAR® certified
- CEC Title 24 JA8 certified
- CCEA (frames with *LC suffix)

### Warranty

5 year limited warranty

Visit Signify.com/warranties for more information on Signify's standard 5-year limited warranty on complete luminaire systems.

# C3RDL Calculite 3"

## Round downlight

This meticulously engineered downlight is pre-adjusted to 22.5° out of the box, saving installation time. It can be vertically adjusted to 45° with three quick turns of a screwdriver and locked into place.

### 0-10V electrical tables

| Light engine | Input volts | Input current | Drive current | Input power |
|---|---|---|---|---|
| **C3L05_Z10U/3** | 120 V | 0.06 A | 150 mA | 7.0 W |
| | 277 V | 0.02 A | | |
| **C3L07_Z10U/3** | 120 V | 0.08 A | 220 mA | 9.5 W |
| | 277 V | 0.03 A | | |
| **C3L10_Z10U/3** | 120 V | 0.12 A | 330 mA | 13.6 W |
| | 277 V | 0.05 A | | |
| **C3L15_Z10U/3** | 120 V | 0.16 A | 450 mA | 18.6 W |
| | 277 V | 0.07 A | | |
| **C3L18_Z10U/3** | 120 V | 0.17 A | 500 mA | 20.4 W |
| | 277 V | 0.07 A | | |
| **C3L07_Z10US/3 C3L07_Z10UR** | 120 V | 0.08 A | 220 mA | 9.4 W |
| | 277 V | 0.03 A | | |
| **C3L10_Z10US/3 C3L10_Z10UR** | 120 V | 0.12 A | 330 mA | 14.1 W |
| | 277 V | 0.05 A | | |

### ELV electrical tables

| Light engine | Input volts | Input current | Drive current | Input power |
|---|---|---|---|---|
| **C3L05_E1** | 120 V | 0.05 A | 150 mA | 5.4 W |
| | 277 V | 0.02 A | | |
| **C3L07_E1** | 120 V | 0.08 A | 220 mA | 8.7 W |
| | 277 V | 0.03 A | | |
| **C3L10_E1** | 120 V | 0.11 A | 330 mA | 13.2 W |
| | 277 V | 0.05 A | | |
| **C3L15_E1** | 120 V | 0.15 A | 450 mA | 17.4 W |
| | 277 V | 0.06 A | | |
| **C3L18_E1** | 120 V | 0.17 A | 500 mA | 19.7 W |
| | 277 V | 0.07 A | | |
| **C3_A05_E1S C3_A05_E1R** | 120 V | 0.08 A | 220 mA | 8.7 W |
| | 277 V | 0.03 A | | |
| **C3_A10_E1R C3_A10_E1S** | 120 V | 0.11 A | 330 mA | 13.2 W |
| | 277 V | 0.05 A | | |

### Lutron electrical tables

| Light engine | Input volts | Input current | Drive current | Input power |
|---|---|---|---|---|
| **C3L05_LU** | 120 V | 0.06 A | 150 mA | 6.2 W |
| | 277 V | 0.02 A | | |
| **C3L07_LU** | 120 V | 0.08 A | 220 mA | 8.8 W |
| | 277 V | 0.03 A | | |
| **C3L10_LU** | 120 V | 0.12 A | 330 mA | 13.0 W |
| | 277 V | 0.05 A | | |
| **C3L15_LU** | 120 V | 0.15 A | 450 mA | 17.7 W |
| | 277 V | 0.06 A | | |
| **C3L18_LU** | 120 V | 0.17 A | 500 mA | 19.8 W |
| | 277 V | 0.07 A | | |

# C3RDL Calculite 3"

## Round downlight

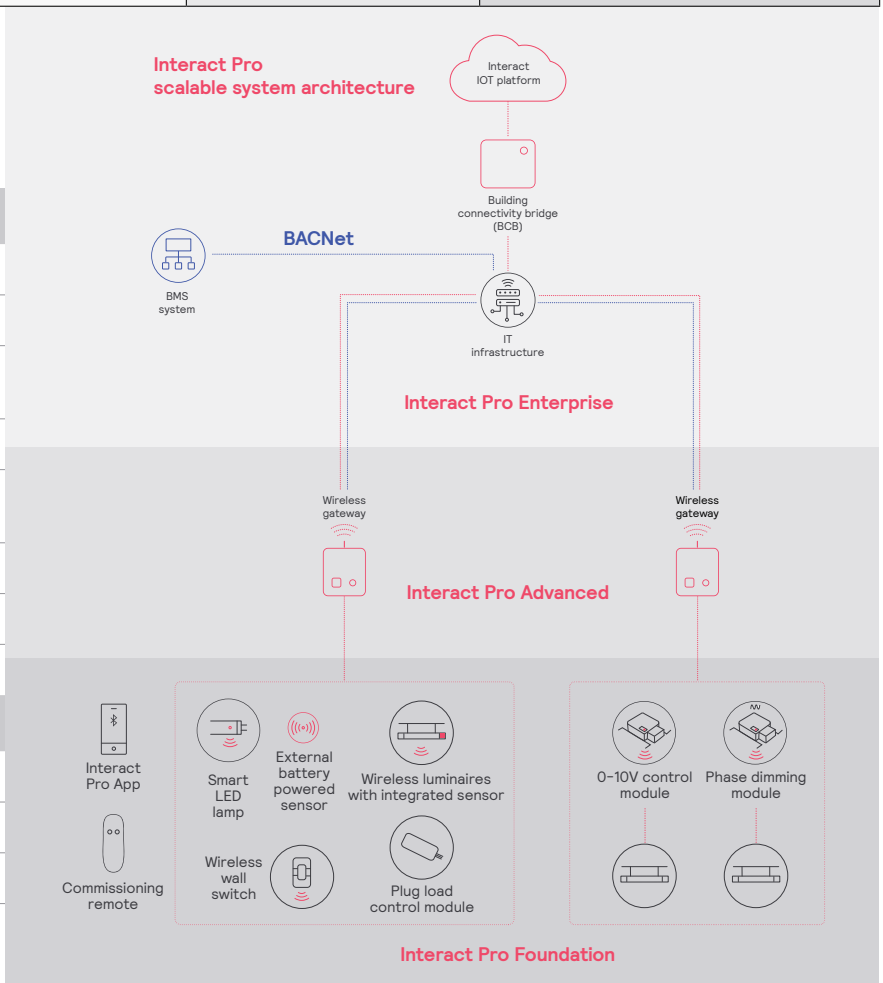
interact

| | Interact Pro scalable system | | |
|---|---|---|---|
| |  |  |  |
| | Foundation | Advanced | Enterprise |
| Dimming, grouping, and zoning | ✓ | ✓ | ✓ |
| Bluetooth and ZigBee enabled | ✓ | ✓ | ✓ |
| Motion sensing and daylight harvesting | ✓ | ✓ | ✓ |
| Integration with 0–10V and phase dimming fixtures | ✓ | ✓ | ✓ |
| Code compliance | ✓ | ✓ | ✓ |
| Granular dimming and dwell time | ✓ | ✓ | ✓ |
| Energy reporting and monitoring | | ✓ | ✓ |
| Scheduling | | ✓ | ✓ |
| Demand response | | ✓ | ✓ |
| BMS integration (BACnet) | | | ✓ |
| Floor plan visualization | | | ✓ |
| IoT sensors for wellness | | | ✓ |
| IoT Apps for productivity | | | ✓ |

### Currently supported maximum system size

To be able to design the lighting system correctly for the customer, it is important to know the prime characteristics of the system, its possibilities and limitations.

| System level | |
|---|---|
| Total number of gateways | Unlimited |
| Total number of devices | 200 per network |
| • luminaires with integrated sensors | 150 |
| • smart TLEDS | 150 |
| Total number of ZGP devices (sensors and switches) | 50 |
| • sensors | 30 |
| • switches | 50 |
| • zones and groups | 64 |
| **Group level** | |
| Recommended number of lights | 40 (recommended 25) |
| Number of ZGP devices | 5 |
| Number of scenes | 16 |



# C3RDL Calculite 3"

## Round downlight

### Wireless Controls Options

**Interact Pro scalable sensor (System Bridge Accessory with -CS option):**

- CS is a connected sensor with integral occupancy and daylight sensing and supports wireless mesh connectivity.
- The sensor works in the Foundation mode (similar to SpaceWise) when configured without a gateway or in an Interact Pro Advanced or Enterprise mode if a compatible gateway is used.
- Interact Pro includes an App, a portal and a broad portfolio of wireless luminaires, lamps and retrofit kits all working on the same system.
- Startup is implemented via Interact Pro App (Android or iPhone) & BlueTooth connectivity. The App provides flexibility to choose between a gateway or non gateway mode for setup.
- Setup with the gateway requires wired internet access to the gateway. It is possible to add a gateway at a later point.
- Prepare project configuration steps remotely and use IRT9015 remote onsite to identify and group devices together.
- Compatible with:
  - UID8451/10 wireless dimmer switch
  - SWS200 wireless scene switch
  - Battery powered IP42 presence sensor OCC sensor IA CM WH 10/1
  - Battery powered IP42 presence & daylight sensor OCC-DL sensor IA CM IP42 WH
  - Battery powered IP65 presence sensor OCC sensor IA CM IP65 WH
  - Battery powered IP65 presence & daylight sensor OCC-DL sensor IA CM IP65 WH
- For more information on Interact Pro visit: www.interact-lighting.com/interactproscalablesystem.

**Interact Pro Enterprise (System Bridge Accessory with -SB option):**

- A wireless IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateways.
- View all your projects under one dashboard and easily compare insights from multiple projects in one view.
- Compatible with UID8451/10 wireless dimmer switch, SWS200 wireless scene switch, wireless Occ sensor (OCC SENSOR IA CM IP42 WH 10/1) and wireless Day/Occ sensor (OCC MULTI SENSOR IA CM WH 10/1) and wireless Occupancy or Daylight & Occupancy sensors available.
- Use Interact software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- SB option in addition to occupancy and daylight sensing supports advanced IoT capabilities such as people estimation analysis, desk level temperature & humidity sensing, noise classification, and BLE beacon.
- Requires compatible Gateway and internet connectivity for commissioning.
- For more information, visit: www.interact-lighting.com/office or www.usa.lighting.philips.com/systems/system-areas/offices.

**Emergency Options (ER100) (System Bridge Accessory with -ER100 option):**

- Power Sensing (Factory default) – Recommended UL924 option requires unswitched power sense line, absence of voltage on the normal circuit triggers luminaire to 100% output
- Power Interruption Detection (Field option) – Detects AC power interruption >30ms triggers 90 minute emergency mode with luminaire at 100% output

**Radio only sensor (RADIO):**

- Integral RADIO only sensor simply enables wireless mesh connectivity to the luminaire without any occupancy or daylight sensing.
- Ideal for applications where sensing functionality is managed by other Interact devices and the luminaire only needs to have wireless connectivity.

### Wired Controls Options

**Interact Office Wired (PoE):**

- PoE based IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateways.
- Use Interact Office software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- Supports advanced IoT Apps on Personal Control, Space Management, wayfinding, room/desk reservation and offers open APIs for light control and data exchange.
- PoE lighting controller is accessible from below.
- Integral sensor option for occupancy sensing (PIR) and/or daylight harvesting available for additional energy savings.
- Optional integral emergency controller and battery pack provides 600lm nominal output.
- Test switch and indicator light mounted on side of chassis on one end.
- Emergency battery has a 3 month pre-installed shelf life, and must be stored and installed in environments of 20C to 30C (-4F to 86F) ambient, and 45-85% relative humidity.
- For more information on Interact Office Wired, visit: www.interact-lighting.com/office or www.usa.lighting.philips.com/systems/system-areas/offices.

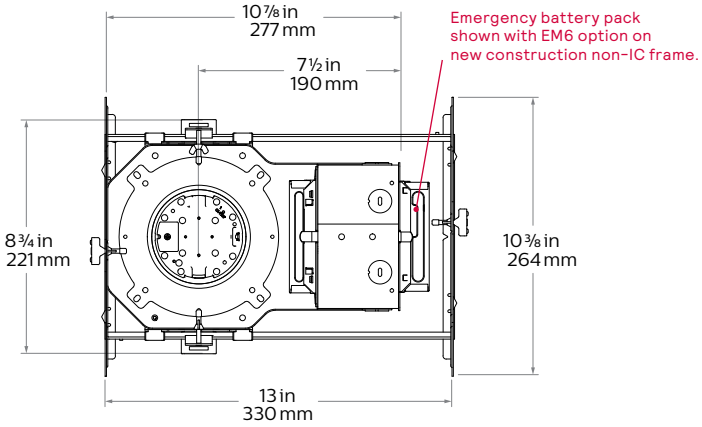
**Interact Office Wired (PoE), Static White:**

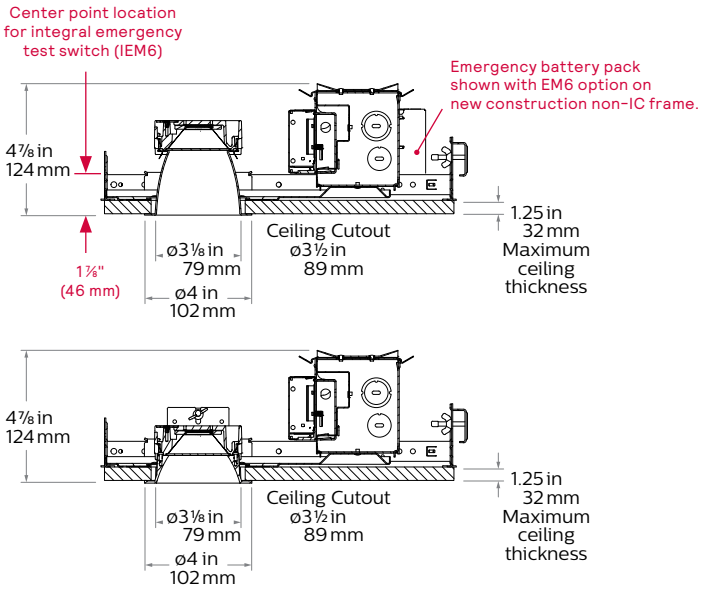
- A wireless IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateways.
- View all your projects under one dashboard and easily compare insights from multiple projects in one view.
- Compatible Zigbee Green Power wall dimmer and wireless Occupancy or Daylight & Occupancy sensors available.
- Use Interact Office software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- Supports advanced IoT Apps on wayfinding, room/desk reservation and offers open APIs
- Requires compatible Interact Office Gateway and internet connectivity for commissioning.
- For more information on Interact Office Wireless, visit: www.interact-lighting.com/office or www.usa.lighting.philips.com/systems/system-areas/offices.

# C3RDL Calculite 3"

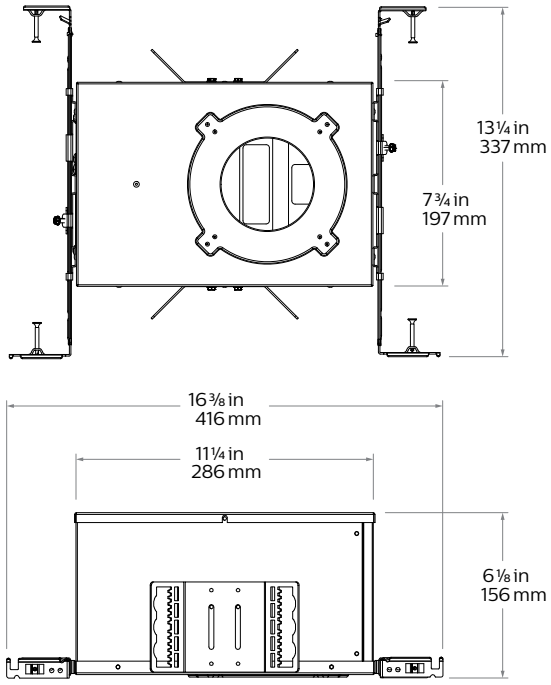
## Round downlight

### New construction (N)

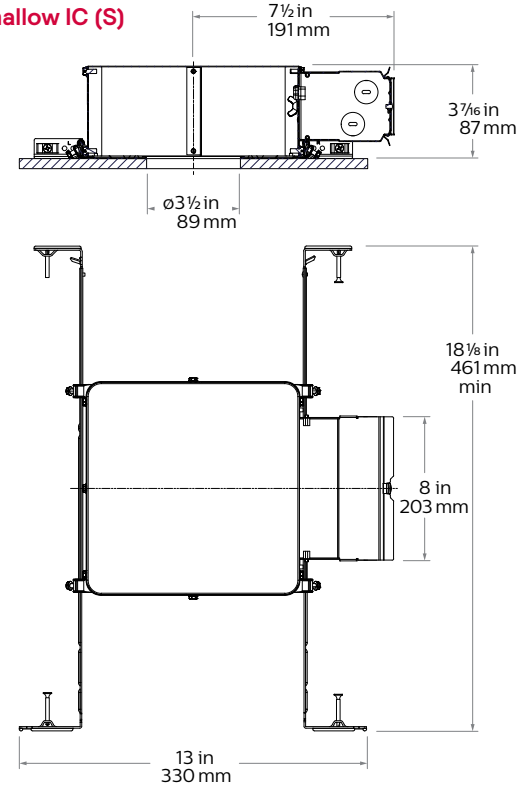


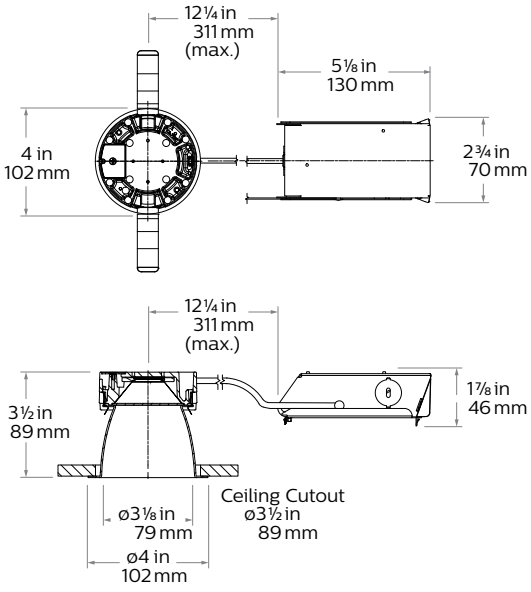

### Standard IC (A) and Chicago plenum (LC)



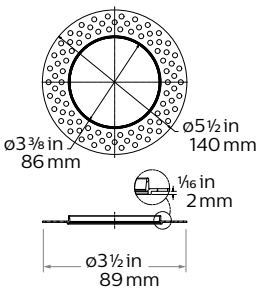

### Shallow IC (S)




### Remodeler (R)




### Flangeless mud-in ring (CA3RFT) accessory



# C3RDL Calculite 3"

## Round downlight

### Polished Reflectors

Shown as round reflectors but represent the finish of Calculite square reflectors.

**Specular clear (CL):** Most specular and most efficient finish, delivers maximum photometric performance but can produce a mirror image effect of the interior space.

**Champagne bronze (CZ):** Semi-specular finish that softens light at the source of the reflector while providing a warmer reflector appearance (slightly warmer).

**Comfort clear (CC):** Semi-specular finish that softens the light at the source of the reflector and creates a subtle, even luminance from the reflector cone.

**White (WH):** (matte) Brightest illuminated aperture and provides the smoothest transition to most ceilings when off (white is only available with a white flange).

**Comfort clear diffuse (CD):** Slightly diffuse clear finish, that eliminates iridescence and reduces the mirror image effect inherent with specular finishes.

**Black (BK):** (anodized) Specular finish that provides the lowest aperture brightness possible and significantly reduces source identification in a ceiling.

### Textured Reflectors

Shown as square reflectors but represent the finish of Calculite round reflectors.

**Aluminum diffuse (D):**
Matte painted finish.

**Textured white (WT):**
Matte painted finish.

**Bronze (BZ):**
Matte painted finish.

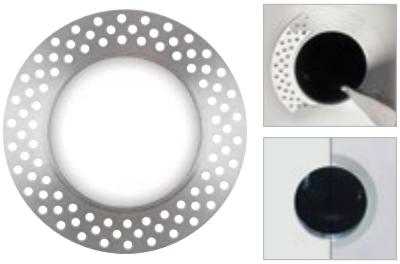
**Textured black (BT):**
Matte painted finish.

### Flanges

**White (–):** (matte) Provides the smoothest transition to ceilings when off.

**Polished (P):** (matches aperture) Produces a continuous look throughout the reflector (aperture matching).

**Flangeless (F):** (flush-mount)Creates a flush, virtually seamless transition from aperture to ceiling.



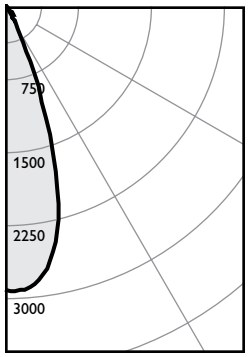
**Mud-in ring (FT):** Low profile, machined aluminum mud-in ring provides a raised rib to plaster up to and a 3⁄16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.

# C3RDL Calculite 3"

## Round downlight

### Narrow beam (standard), 1000lm engine, 87.3 lm/W at 14W

**Candela Curve**




Frame: **3RN**
Engine: **C3L10935NZ10U**
Trim: **C3RDLCC**

| | |
|---|---|
| Output lumens: | 1222 lms |
| Input watts: | 14 W |
| CRI: | 90 min |
| CCT[1]: | 3500K |
| Spacing Crit.: | 0.64 |

**Zonal summary**

| Zone | Lumens | %Luminaire |
|---|---|---|
| 0-30 | 1074 | 87.9% |
| 0-40 | 1152 | 94.3% |
| 0-60 | 1220 | 99.8% |
| 0-90 | 1222 | 100.0% |

| Angle | Mean CP | Lumens |
|---|---|---|
| 0 | 2906 | |
| 5 | 2891 | 293 |
| 10 | 2618 | |
| 15 | 2078 | 586 |
| 20 | 1161 | |
| 25 | 495 | 229 |
| 30 | 171 | |
| 35 | 116 | 73 |
| 40 | 117 | |
| 45 | 85 | 66 |
| 50 | 10 | |
| 55 | 5 | 4 |
| 60 | 13 | |
| 65 | 2 | 1 |
| 70 | 1 | |
| 75 | 0 | 1 |
| 80 | 0 | |
| 85 | 0 | 0 |
| 90 | 0 | |

**Single unit data**

| Height to lighted plane | Initial center beam foot-candles | Beam diameter (ft)* |
|---|---|---|
| 5' | 116 | 3.2' |
| 6' | 81 | 3.8' |
| 7' | 59 | 4.5' |
| 8' | 45 | 5.1' |
| 9' | 36 | 5.8' |

* Beam diameter is where foot-candles drop to 50% of maximum.

**Multiple unit data - RCR 2**

| Spacing on center | Initial center beam foot-candles | Watts per sq. ft. |
|---|---|---|
| 5' | 57.2 | 0.62 |
| 6' | 37.6 | 0.41 |
| 7' | 26.8 | 0.29 |
| 8' | 22.4 | 0.24 |
| 9' | 17.9 | 0.19 |

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

**Efficacy: 87.3 lm/w**
Report[2]: 1763GFR

**Adjustment factors**

| Standard | CCT | Lumens |
|---|---|---|
| CL = 105% | 90CRI 4000K = 104% | 1800lm = 142% |
| CC = 100% | 90CRI 3500K = 100% | 1500lm = 130% |
| CD = 80% | 90CRI 3000K = 96% | 1000lm = 100% |
| WH = 80% | 90CRI 2700K = 90% | 750lm = 70% |
| CZ = 78% | | 500lm = 50% |
| BK = 40% | | |

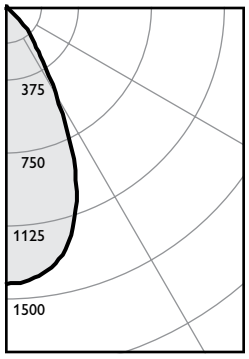
**Coefficients of utilization**

| Ceiling | 80% | | | | 70% | | 50% | | 30% | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Wall | 70 | 50 | 30 | 10 | 50 | 10 | 50 | 10 | 50 | 10 | 0 |
| RCR | Zonal cavity method - Effective floor reflectance = 20% | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 119 | 116 | 111 | 111 | 106 | 106 | 100 |
| 1 | 114 | 112 | 110 | 108 | 110 | 106 | 106 | 103 | 102 | 100 | 95 |
| 2 | 110 | 106 | 102 | 100 | 104 | 98 | 101 | 96 | 98 | 94 | 91 |
| 3 | 106 | 100 | 96 | 93 | 99 | 92 | 96 | 91 | 94 | 89 | 87 |
| 4 | 102 | 95 | 91 | 87 | 94 | 87 | 92 | 86 | 90 | 85 | 83 |
| 5 | 98 | 91 | 86 | 83 | 90 | 82 | 88 | 82 | 87 | 81 | 79 |
| 6 | 94 | 87 | 82 | 78 | 86 | 78 | 85 | 78 | 83 | 77 | 76 |
| 7 | 91 | 83 | 78 | 75 | 83 | 75 | 81 | 74 | 80 | 74 | 72 |
| 8 | 88 | 80 | 75 | 72 | 79 | 71 | 78 | 71 | 77 | 71 | 70 |
| 9 | 85 | 77 | 72 | 69 | 76 | 69 | 75 | 68 | 75 | 68 | 67 |
| 10 | 82 | 74 | 69 | 66 | 73 | 66 | 73 | 66 | 72 | 66 | 64 |

Room Cavity Ratio

### Medium beam (standard), 1000lm engine, 80.6 lm/W at 14W

**Candela Curve**




Frame: **3RN**
Engine: **C3L10935MZ10U**
Trim: **C3RDLCC**

| | |
|---|---|
| Output lumens: | 1128 lms |
| Input watts: | 14 W |
| CRI: | 90 min |
| CCT[1]: | 3500K |
| Spacing Crit.: | 0.86 |

**Zonal summary**

| Zone | Lumens | %Luminaire |
|---|---|---|
| 0-30 | 836 | 74.1% |
| 0-40 | 1039 | 92.1% |
| 0-60 | 1126 | 99.8% |
| 0-90 | 1128 | 100.0% |

| Angle | Mean CP | Lumens |
|---|---|---|
| 0 | 1418 | |
| 5 | 1408 | 143 |
| 10 | 1365 | |
| 15 | 1268 | 359 |
| 20 | 1075 | |
| 25 | 814 | 377 |
| 30 | 527 | |
| 35 | 324 | 203 |
| 40 | 213 | |
| 45 | 104 | 81 |
| 50 | 16 | |
| 55 | 6 | 6 |
| 60 | 3 | |
| 65 | 2 | 2 |
| 70 | 1 | |
| 75 | 0 | 1 |
| 80 | 0 | |
| 85 | 0 | 0 |
| 90 | 0 | |

**Single unit data**

| Height to lighted plane | Initial center beam foot-candles | Beam diameter (ft)* |
|---|---|---|
| 5' | 57 | 4.3' |
| 6' | 39 | 5.2' |
| 7' | 29 | 6.0' |
| 8' | 22 | 6.9' |
| 9' | 18 | 7.7' |

* Beam diameter is where foot-candles drop to 50% of maximum.

**Multiple unit data - RCR 2**

| Spacing on center | Initial center beam foot-candles | Watts per sq. ft. |
|---|---|---|
| 5' | 51.7 | 0.62 |
| 6' | 33.9 | 0.41 |
| 7' | 24.2 | 0.29 |
| 8' | 20.2 | 0.24 |
| 9' | 16.1 | 0.19 |

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

**Efficacy: 80.6 lm/w**
Report[2]: 1758GFR

**Adjustment factors**

| Standard | CCT | Lumens |
|---|---|---|
| CL = 105% | 90CRI 4000K = 104% | 1800lm = 142% |
| CC = 100% | 90CRI 3500K = 100% | 1500lm = 130% |
| CD = 80% | 90CRI 3000K = 96% | 1000lm = 100% |
| WH = 80% | 90CRI 2700K = 90% | 750lm = 70% |
| CZ = 78% | | 500lm = 50% |
| BK = 40% | | |

**Coefficients of utilization**

| Ceiling | 80% | | | | 70% | | 50% | | 30% | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Wall | 70 | 50 | 30 | 10 | 50 | 10 | 50 | 10 | 50 | 10 | 0 |
| RCR | Zonal cavity method - Effective floor reflectance = 20% | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 111 | 111 | 106 | 106 | 100 |
| 1 | 114 | 111 | 109 | 106 | 109 | 105 | 105 | 101 | 101 | 98 | 94 |
| 2 | 108 | 103 | 100 | 96 | 102 | 95 | 99 | 93 | 96 | 91 | 88 |
| 3 | 103 | 97 | 92 | 88 | 95 | 87 | 93 | 86 | 90 | 85 | 82 |
| 4 | 98 | 91 | 85 | 81 | 89 | 81 | 87 | 80 | 85 | 79 | 76 |
| 5 | 93 | 85 | 79 | 75 | 84 | 75 | 82 | 74 | 81 | 74 | 71 |
| 6 | 89 | 80 | 74 | 70 | 79 | 70 | 78 | 69 | 76 | 69 | 67 |
| 7 | 84 | 75 | 70 | 65 | 75 | 65 | 73 | 65 | 72 | 65 | 63 |
| 8 | 80 | 71 | 65 | 61 | 71 | 61 | 70 | 61 | 69 | 61 | 59 |
| 9 | 77 | 67 | 62 | 58 | 67 | 58 | 66 | 57 | 65 | 57 | 56 |
| 10 | 73 | 64 | 58 | 54 | 63 | 54 | 63 | 54 | 62 | 54 | 53 |

Room Cavity Ratio

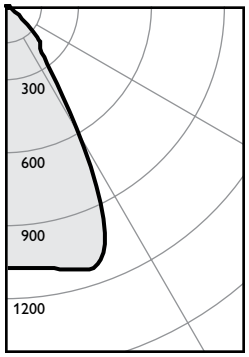
1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.

# C3RDL Calculite 3"

## Round downlight

### Wide beam (standard), 1000lm engine, 77.1 lm/W at 14W

**Candela Curve**




Frame: **3RN**
Engine: **C3L10935WZ10U**
Trim: **C3RDLCC**

| | |
|---|---|
| Output lumens: | 1079 lms |
| Input watts: | 14 W |
| CRI: | 90 min |
| CCT[1]: | 3500K |
| Spacing Crit.: | 1.02 |

**Zonal summary**

| Zone | Lumens | %Luminaire |
|---|---|---|
| 0-30 | 807 | 74.8% |
| 0-40 | 985 | 91.3% |
| 0-60 | 1076 | 99.7% |
| 0-90 | 1079 | 100.0% |

| Angle | Mean CP | Lumens |
|---|---|---|
| 0 | 1073 | |
| 5 | 1080 | 109 |
| 10 | 1096 | |
| 15 | 1121 | 318 |
| 20 | 1106 | |
| 25 | 903 | 418 |
| 30 | 512 | |
| 35 | 260 | 163 |
| 40 | 196 | |
| 45 | 113 | 88 |
| 50 | 17 | |
| 55 | 7 | 6 |
| 60 | 3 | |
| 65 | 2 | 2 |
| 70 | 1 | |
| 75 | 0 | 1 |
| 80 | 0 | |
| 85 | 0 | 0 |
| 90 | 0 | |

**Single unit data**

| Height to lighted plane | Initial center beam foot-candles | Beam diameter (ft)* |
|---|---|---|
| 5' | 43 | 5.1' |
| 6' | 30 | 6.1' |
| 7' | 22 | 7.1' |
| 8' | 17 | 8.2' |
| 9' | 13 | 9.2' |

* Beam diameter is where foot-candles drop to 50% of maximum.

**Multiple unit data - RCR 2**

| Spacing on center | Initial center beam foot-candles | Watts per sq. ft. |
|---|---|---|
| 5' | 49.3 | 0.62 |
| 6' | 32.4 | 0.41 |
| 7' | 23.1 | 0.29 |
| 8' | 19.3 | 0.24 |
| 9' | 15.4 | 0.19 |

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

**Efficacy: 77.1lm/w**
Report[2]: 1770GFR

**Adjustment factors**

| Standard | CCT | Lumens |
|---|---|---|
| CL = 105% | 90CRI 4000K = 104% | 1800lm = 142% |
| CC = 100% | 90CRI 3500K = 100% | 1500lm = 130% |
| CD = 80% | 90CRI 3000K = 96% | 1000lm = 100% |
| WH = 80% | 90CRI 2700K = 90% | 750lm = 70% |
| CZ = 78% | | 500lm = 50% |
| BK = 40% | | |

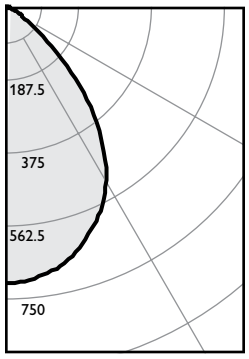
**Coefficients of utilization**

| Ceiling | 80% | | | | 70% | | 50% | | 30% | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Wall | 70 | 50 | 30 | 10 | 50 | 10 | 50 | 10 | 50 | 10 | 0 |
| RCR | Zonal cavity method - Effective floor reflectance = 20% | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 111 | 111 | 106 | 106 | 100 |
| 1 | 114 | 111 | 109 | 106 | 109 | 105 | 105 | 101 | 101 | 98 | 94 |
| 2 | 108 | 103 | 100 | 96 | 102 | 95 | 98 | 93 | 95 | 91 | 87 |
| 3 | 103 | 97 | 92 | 87 | 95 | 87 | 92 | 85 | 90 | 84 | 81 |
| 4 | 98 | 91 | 85 | 80 | 89 | 80 | 87 | 79 | 85 | 78 | 76 |
| 5 | 93 | 85 | 79 | 74 | 83 | 74 | 82 | 73 | 81 | 73 | 71 |
| 6 | 89 | 80 | 74 | 69 | 78 | 69 | 77 | 68 | 76 | 68 | 66 |
| 7 | 84 | 75 | 70 | 64 | 74 | 64 | 73 | 64 | 71 | 64 | 62 |
| 8 | 80 | 71 | 65 | 60 | 70 | 60 | 69 | 60 | 68 | 60 | 58 |
| 9 | 77 | 67 | 62 | 56 | 66 | 56 | 65 | 56 | 64 | 56 | 54 |
| 10 | 73 | 64 | 58 | 53 | 62 | 53 | 61 | 53 | 61 | 53 | 51 |

Room Cavity Ratio

### Wide beam (shallow), 1000lm engine, 79.0 lm/W at 13.6W

**Candela Curve**




Frame: **3RN**
Engine: **C3L10935WZ10U**
Trim: **C3RDLDS**

| | |
|---|---|
| Output lumens: | 1074 lms |
| Input watts: | 13.6 W |
| CRI: | 90 min |
| CCT[1]: | 3500K |
| Spacing Crit.: | 1.12 |

**Zonal summary**

| Zone | Lumens | %Luminaire |
|---|---|---|
| 0-30 | 515 | 48.0% |
| 0-40 | 783 | 72.9% |
| 0-60 | 1037 | 96.6% |
| 0-90 | 1074 | 100.0% |

| Angle | Mean CP | Lumens |
|---|---|---|
| 0 | 707 | |
| 5 | 701 | 71 |
| 10 | 686 | |
| 15 | 659 | 185 |
| 20 | 620 | |
| 25 | 576 | 263 |
| 30 | 514 | |
| 35 | 433 | 269 |
| 40 | 337 | |
| 45 | 239 | 184 |
| 50 | 140 | |
| 55 | 74 | 67 |
| 60 | 47 | |
| 65 | 26 | 26 |
| 70 | 12 | |
| 75 | 7 | 7 |
| 80 | 4 | |
| 85 | 2 | 1 |
| 90 | 0 | |

**Single unit data**

| Height to lighted plane | Initial center beam foot-candles | Beam diameter (ft)* |
|---|---|---|
| 5' | 28 | 5.6' |
| 6' | 20 | 6.7' |
| 7' | 14 | 7.8' |
| 8' | 11 | 9.0' |
| 9' | 9 | 10.1' |

* Beam diameter is where foot-candles drop to 50% of maximum.

**Multiple unit data - RCR 2**

| Spacing on center | Initial center beam foot-candles | Watts per sq. ft. |
|---|---|---|
| 5' | 47.0 | 0.60 |
| 6' | 31.0 | 0.40 |
| 7' | 22.0 | 0.28 |
| 8' | 18.0 | 0.24 |
| 9' | 15.0 | 0.19 |

38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances

**Efficacy: 79.0lm/w**
Report[2]: 1810GFR

**Adjustment factors**

| Shallow | CCT | Lumens |
|---|---|---|
| WT = 112% | 90CRI 4000K = 104% | 1800lm = 142% |
| WH = 110% | 90CRI 3500K = 100% | 1500lm = 130% |
| D = 100% | 90CRI 3000K = 96% | 1000lm = 100% |
| BZ = 77% | 90CRI 2700K = 90% | 750lm = 70% |
| BK = 75% | | 500lm = 50% |
| BT = 74% | | |

**Coefficients of utilization**

| Ceiling | 80% | | | | 70% | | 50% | | 30% | | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Wall | 70 | 50 | 30 | 10 | 50 | 10 | 50 | 10 | 50 | 10 | 0 |
| RCR | Zonal cavity method - Effective floor reflectance = 20% | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 111 | 111 | 106 | 106 | 100 |
| 1 | 112 | 109 | 106 | 103 | 107 | 102 | 103 | 98 | 99 | 95 | 91 |
| 2 | 105 | 99 | 94 | 90 | 97 | 89 | 94 | 87 | 91 | 85 | 82 |
| 3 | 98 | 90 | 84 | 79 | 89 | 79 | 86 | 77 | 84 | 76 | 73 |
| 4 | 92 | 83 | 76 | 71 | 81 | 70 | 79 | 69 | 77 | 69 | 66 |
| 5 | 86 | 76 | 69 | 63 | 75 | 63 | 73 | 63 | 71 | 62 | 60 |
| 6 | 80 | 70 | 62 | 57 | 69 | 57 | 67 | 57 | 66 | 56 | 54 |
| 7 | 75 | 64 | 57 | 52 | 64 | 52 | 62 | 52 | 61 | 51 | 49 |
| 8 | 71 | 60 | 52 | 48 | 59 | 47 | 58 | 47 | 57 | 47 | 45 |
| 9 | 67 | 55 | 48 | 44 | 55 | 44 | 54 | 43 | 53 | 43 | 42 |
| 10 | 63 | 52 | 45 | 40 | 51 | 40 | 50 | 40 | 49 | 40 | 38 |

Room Cavity Ratio

1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.



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