# LIGHTOLIER
## by Signify

The Calculite 2" family features downlight, accent adjustable, and lensed wall wash serving as a complete recessed offering to accommodate all recessed application needs. The 50° light cut off and multiple adjustable beam angles provide quality light in a miniature aperture.

Project:

Location:

Cat.No:

Type:

Lamps: Qty:

Notes:

**Complete luminaire =** Engine + Trim + Accessories (optional)
Optional frames available (see page 2)

## Engine

example: C2RLW06927FLUPZU

| Series[1] | Style **LW** | Lumens | CRI **9** | CCT | Beam | Dimming / Voltage | Flange |
|---|---|---|---|---|---|---|---|
| **C2R** Calculite 2" round<br>**C2S** Calculite 2" square | **LW** Lensed Wall Wash | **06** 600lm<br>**09** 900lm<br>**15** 1500lm[2] | **9** 90CRI | **27** 2700K<br>**30** 3000K<br>**35** 3500K<br>**40** 4000K | **FL** Flood | **UPZU** 0–10V 1%, ELV 3%, Triac 3% Unv (120V/277V)<br>**LU** Lutron PEQ, 100% – 0.1% Unv (120V/277V) | **–** Flanged (leave blank)<br>**F** Flangeless[3] |

## Trim

example: C2RLWWT

| Series | Style **LW** | Finish | | Flange | |
|---|---|---|---|---|---|
| **C2R** Calculite 2" round<br>**C2S** Calculite 2" square | **LW** Lensed Wall Wash | **WT** | Textured white | **–** White<br>**F** Flangeless[3] | |
| | | **WH** White (matte)<br>**BK** Black (painted matte)<br>**BT** Textured black<br>**BZ** Bronze<br>**D** Aluminum diffuse<br>**CD** Clear diffuse (applied finish)<br><br>Special painted finishes available with RAL number. | | **–** White (matte)<br>**P** Matching reflector<br>**F** Flangeless[2] | |

## Accessories (order & install separately)

**Accessories**

**SBA** Interact Ready System Bridge Accessory (refer to Philips System Bridge Accessory specification sheet for options and details)[4]

**SWZDT** SpaceWise wireless controller with dwell time functionality (order with UPZ dimming option only)

1. Standard light engine may be used as a remodeler. Optional traditional frame-in kits are available.
2. The 1500lm (15) lumen option is available for non-IC only.
3. Flangeless option code must be ordered for both light engine and trim. Mud-in ring is integral with the light engine.
4. Requires IRT9015 IR remote & Interact Pro App for commissioning.

mesoOptics

**IC** INSULATION CONTACT

c UL us LISTED

**RoHS COMPLIANT**

interact ready.

# C2LW  Calculite 2"

## Round and Square Lensed Wall Wash

### Applications

- Ideal for use in retail, restaurants, residential, and office spaces to accentuate the space and provide tactical or ambience lighting from a minimalistic aperture
- The light engine is designed to be installed as a retrofit without need for a frame. Frames are optional to accommodate ceiling construction.
- Driver pod is tethered electrically to light engine.
- All components are designed to accommodate below ceiling accessibility through the aperture without need for tools.

### Dimensions

- **Max Ceiling Thickness:** 1.50"
- **Ceiling Cutout:** 3"

### Frame-in-kits (optional)

- Light engines are designed to be installed as a retrofit without need for a separate frame
- Die formed steel construction with 1/2" collar for ease of cutting the hole in ceiling.
- Optional new construction frames are available to support rought-in wiring in advance of finishing section.
- Rough-in wiring is done on the light engine driver pod.
- Four models offered:
  - **2RN:** 2" Round New Construction, Non-IC
  - **2SN:** 2" Square New Construction, Non-IC
  - **2RA:** 2" Round New Const., IC, AirSeal, CCEA*
  - **2SA:** 2" Square New Const., IC, AirSeal, CCEA*
- * 900lm maximum for IC applications.

### Optical systems

- **TIR** optics precisely control the beam pattern. Optics are field changeable.
- **PET** film provides a clean beam with mitigated spill and precise color mixing. Specially designed upper optic optimizes light distribution on the wall.
- **COB** (chip on board) provides long useful life with precise color control over time.
- Finishing section trims are durable die cast aluminum with precision painted finish. May be easily repainted in the field to match desired aesthetic appeal.
- 50° cutoff angle.

### Dimming

- UPZ option is universal 0-10v (1%), electronic low voltage (3%), and triac (3%) in a single driver
- Lutron PEQ (L) dimming to 0.1%

### MesoOptics optical diffusion film

- **PET** film containing surface relieved, microscopic light diffusing structures/elements.
- Provides a clean beam with mitigated spill at articulated angles.
- Optimizes luminaire efficacy via high optical transmission.
- Homogenizes light engine luminance providing smooth gradients of white light.
- Uniformly lit optical aperture creates a balance of beam precision coupled with smooth gradients of pure white light.

### 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

### SpaceWiseDT (SWZDT)

- Remote mounted and centralized SWZDT module accessory controls multiple luminaires.
- Compatible with any 0-10v driver
- 120-347V mains input voltage
- Up to 730VA load at 120V

### Light engine

- Die cast heat sinks provide optimized passive thermal management to maximize LED lumen maintenance.
- Precision spun lower collar mechanically attaches to heat sink assembly tool-free via springs. Integral leaf springs for flanged configurations allow easy installation into the ceiling or on optional frame-in kits.
- For flangeless applications, mesh mud-in ring is integral to the lower collar eliminating the need to handle/order an accessory. Must specify flangeless light engine and trim.
- Predicted 70% lumen maintenance to >70,000 hours.
- 32°-86°F ambient operating range (0°-30°C).

### Labels and listings

- cULus listed for damp locations
- CEC Title 24 JA8 certified (full list pending)
- CCEA listing on 2RA/2SA frames

### Warranty

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

### 0-10v/ELV/Triac Electrical Tables

| Light Engine | Input volts | Input current | Drive current | Input power |
|---|---|---|---|---|
| **C2_06_UPZU** | 120V | 0.08A | 250mA | 9.8W |
| | 277V | 0.04A | — | — |
| **C2_09_UPZU** | 120V | 0.11A | 350mA | 13.4W |
| | 277V | 0.05A | — | — |
| **C2_15_UPZU** | 120V | 0.19A | 600mA | 23.3W |
| | 277V | 0.08A | — | — |

### Lutron Electrical Tables

| Light Engine | Input volts | Input current | Drive current | Input power |
|---|---|---|---|---|
| **C2_06_LU** | 120V | 0.08A | 250mA | 9.7W |
| | 277V | 0.04A | — | — |
| **C2_09_LU** | 120V | 0.11A | 350mA | 13.6W |
| | 277V | 0.05A | — | — |
| **C2_15_LU** | 120V | 0.19A | 600mA | 23.3W |
| | 277V | 0.08A | — | — |

# C2LW   Calculite 2"
## Round and Square Lensed Wall Wash

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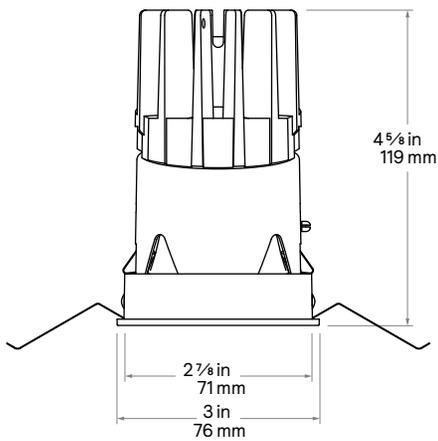
| System level | |
|---|---|
| Total number of gateways | Unlimited |
| Total number of devices | 200 per network |
| · luminaires with integrated sensors | 150 |
| · smart TLEDS | 150 |
| Total number of ZGP devices (sensors and switches) | 50 |
| · sensors | 30 |
| · switches | 50 |
| · zones and groups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

**Interact Pro scalable system architecture**
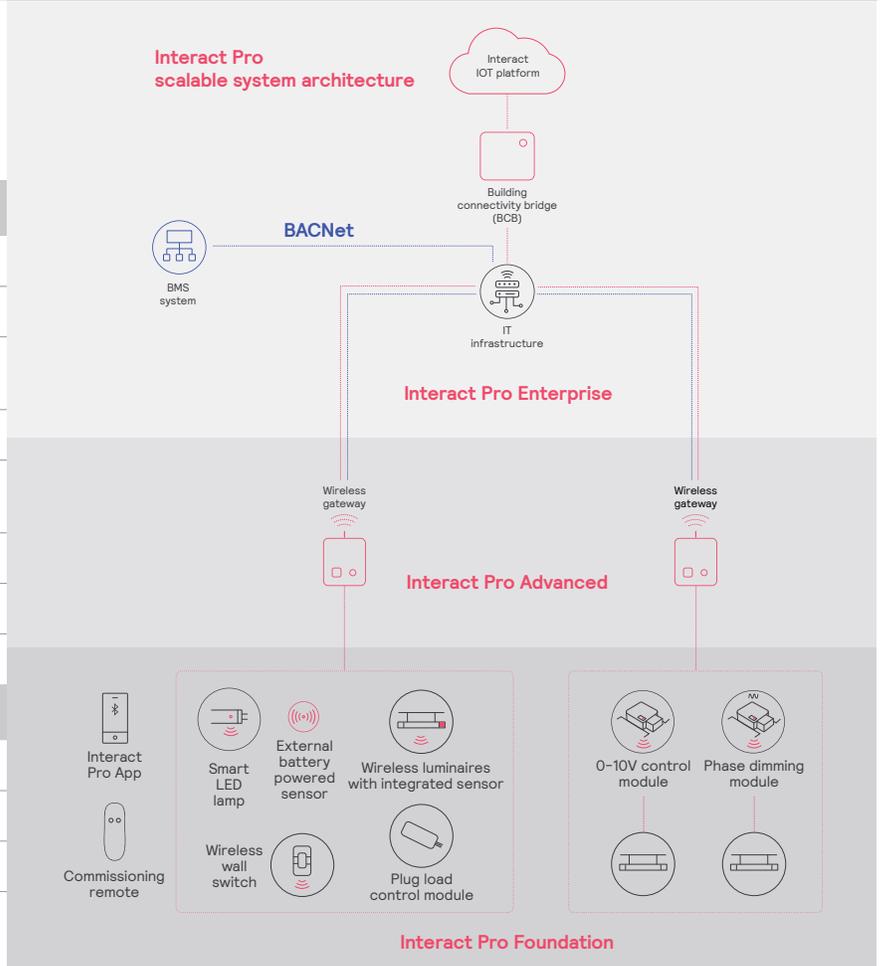
# C2LW   Calculite 2"

## Round and Square Lensed Wall Wash

### Round Engine
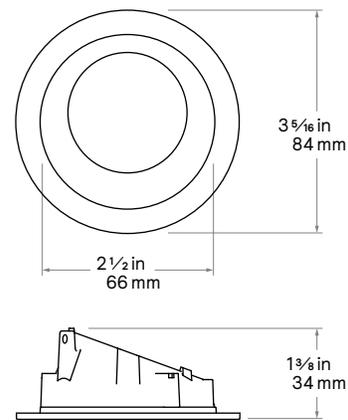
4 5/16 in
119 mm

2 7/8 in
71 mm

3 in
76 mm

### Round Trim

3 5/16 in
84 mm

2 1/2 in
66 mm

1 3/8 in
34 mm

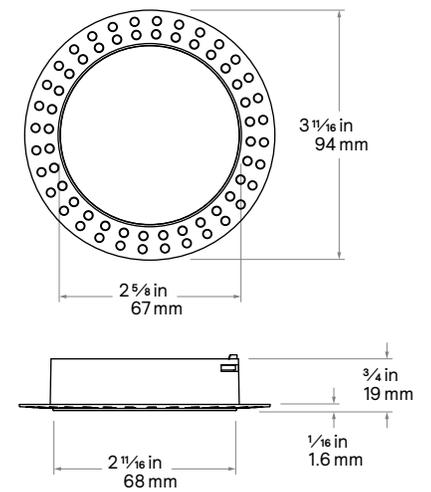### Round Mud-in ring

3 11/16 in
94 mm

2 5/8 in
67 mm

3/4 in
19 mm

1/16 in
1.6 mm

2 11/16 in
68 mm
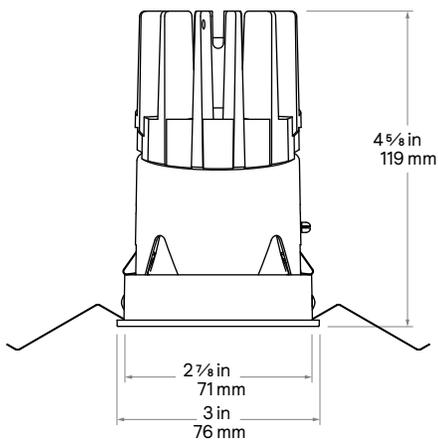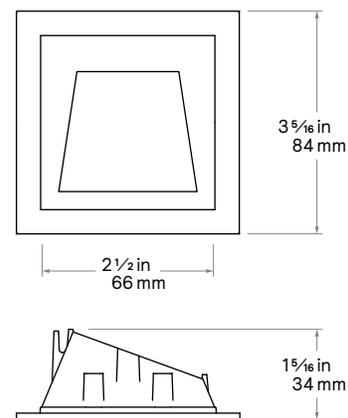
* Mud-in rings are integral to the light engine. Must order flangeless light engine and trim with (F) option code.

### Square Engine

4 5/16 in
119 mm

2 7/8 in
71 mm

3 in
76 mm

### Square Trim

3 5/16 in
84 mm

2 1/2 in
66 mm

1 5/16 in
34 mm

### Square Mud-in ring

3 11/16 in
94 mm

2 5/8 in
67 mm

3/4 in
19 mm

1/16 in
1.6 mm

2 11/16 in
68 mm

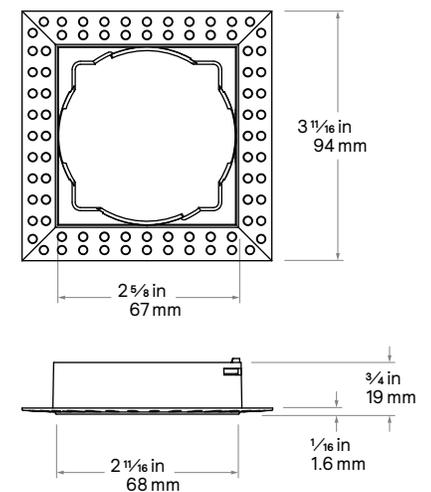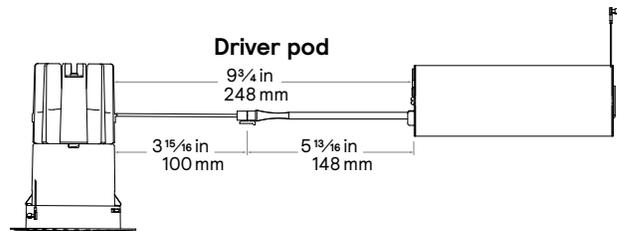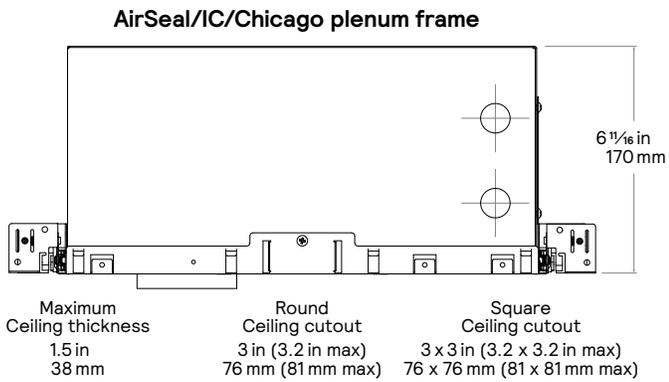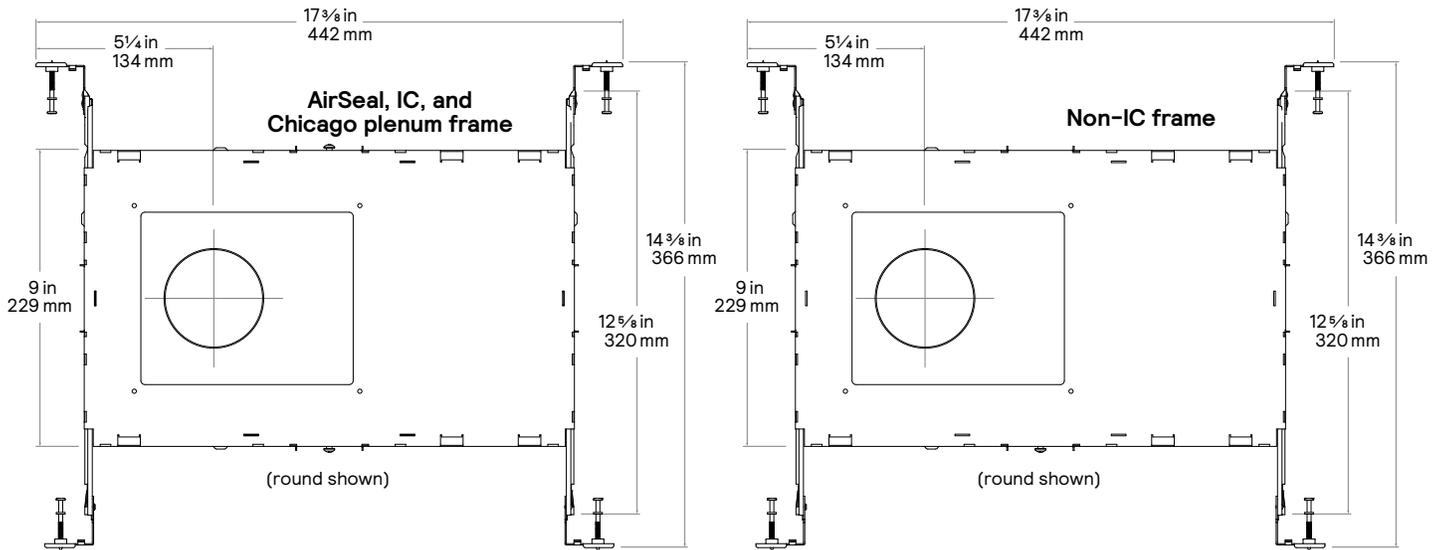* Mud-in rings are integral to the light engine. Must order flangeless light engine and trim with (F) option code.

# C2LW   Calculite 2"

## Round and Square Lensed Wall Wash

### Frames

The standard C2R/C2S light engines may be installed non-IC as a remodeler with no additional frame-in kit required. Optional frames below are available to facilitate ceiling construction

**AirSeal, IC, and Chicago plenum frame**

17 3/8 in
442 mm

5 1/4 in
134 mm

9 in
229 mm

14 3/8 in
366 mm

12 5/8 in
320 mm

(round shown)

**Non-IC frame**

17 3/8 in
442 mm

5 1/4 in
134 mm

9 in
229 mm

14 3/8 in
366 mm

12 5/8 in
320 mm

(round shown)

**AirSeal/IC/Chicago plenum frame**

6 11/16 in
170 mm

| Maximum Ceiling thickness | Round Ceiling cutout | Square Ceiling cutout |
|---|---|---|
| 1.5 in 38 mm | 3 in (3.2 in max) 76 mm (81 mm max) | 3 x 3 in (3.2 x 3.2 in max) 76 x 76 mm (81 x 81 mm max) |

**Driver pod**

9 3/4 in
248 mm

3 15/16 in
100 mm

5 13/16 in
148 mm

# C2LW   Calculite 2"

## Round and Square Lensed Wall Wash

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



**Matched Reflector**                **Flangeless**

**Clear diffuse (CD):** Diffused painted finish with a hint of sparkle where a refined finish is desired.



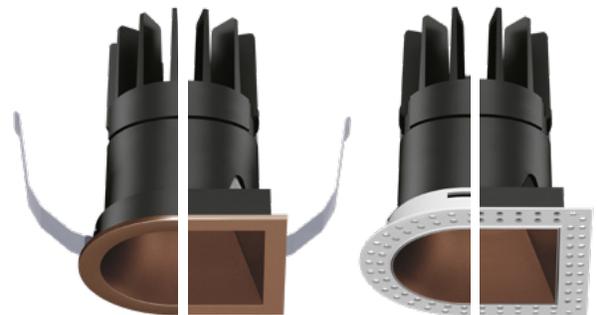**Matched Reflector**                **Flangeless**

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



**Matched Reflector**                **Flangeless**

**Black Textured (BT):** Textured Matte finish that provides the lowest aperture brightness possible and significantly reduces source identification in a ceiling.



**Matched Reflector**                **Flangeless**

**Bronze (BZ):** Matte finish that provides the lowest aperture brightness possible and significantly reduces source identification in a ceiling.



**Matched Reflector**                **Flangeless**

**White Textured (WT):** Textured finish that provides the brightest illuminated aperture and provides the smoothest transition to most ceilings when off (white is only available with a white flange).
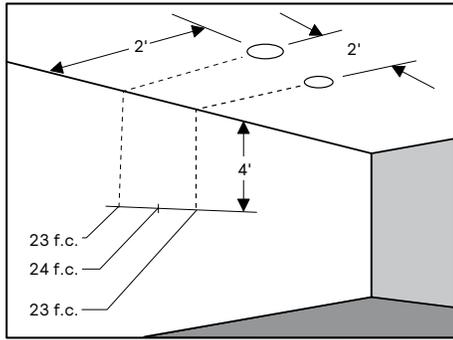


**Mud-in ring (WH):** Low profile, machined aluminum mud-in ring provides a raised rib to plaster up to and a 3⁄16" flange thickness. The ring is attached to the ceiling material directly via flat head screws (contractor supplied).
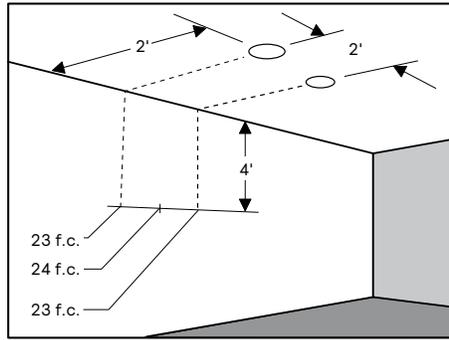
# C2LW  Calculite 2"
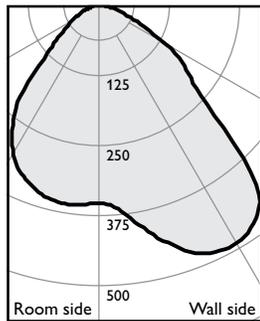## Round and Square Lensed Wall Wash

**Round**



```
23 f.c.
24 f.c.
23 f.c.
```

**Square**



```
23 f.c.
24 f.c.
23 f.c.
```

**Adjustment Factors**

| Finish | CCT (90CRI) | Lumens |
|---|---|---|
| WT = 100% | 4000K = 107% | 1500lm = 167% |
| BT = 97% | 3500K = 100% | 600lm = 66% |
| BZ = 97% | 3000K = 93% | |
| D = 101% | 2700K = 93% | |
| CD = 102% | | |

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## Round, Wall Wash, 900lm engine, 69 lm/W at 14W

**Candela Curve**



Engine: **C2RLW09935FLUPZU**
Trim: **C2RLWWT**

Output lumens: 799 lms
Input watts: 14 W
CRI: 90 min
CCT[1]: 3500K

**Efficacy:** **69.0 lm/w**
Report[2]: STMR-3201

**Multiple unit data**
Footcandles on wall

| Distance from ceiling in feet | 2' from wall / 2' on ctr. | | |
|---|---|---|---|
| 1 | 21 | 23 | 21 |
| 2 | 47 | 51 | 47 |
| 3 | 55 | 59 | 55 |
| 4 | 45 | 49 | 45 |
| 5 | 32 | 35 | 32 |
| 6 | 23 | 24 | 23 |
| 7 | 16 | 17 | 16 |
| 8 | 13 | 13 | 13 |
| 9 | 9 | 9 | 9 |
| 10 | 7 | 7 | 7 |
| 11 | 6 | 6 | 6 |
| 12 | 5 | 5 | 5 |

**Multiple unit data**
Footcandles on wall

| Distance from ceiling in feet | 2' from wall / 3' on ctr. | | |
|---|---|---|---|
| 1 | 10 | 8 | 10 |
| 2 | 21 | 17 | 21 |
| 3 | 24 | 22 | 24 |
| 4 | 20 | 20 | 20 |
| 5 | 15 | 16 | 15 |
| 6 | 12 | 12 | 12 |
| 7 | 9 | 9 | 9 |
| 8 | 7 | 7 | 7 |
| 9 | 5 | 6 | 5 |
| 10 | 4 | 5 | 4 |
| 11 | 4 | 4 | 4 |
| 12 | 3 | 3 | 3 |

**Multiple unit data**
Footcandles on wall

| Distance from ceiling in feet | 3' from wall / 3' on ctr. | | |
|---|---|---|---|
| 1 | 4 | 4 | 4 |
| 2 | 8 | 8 | 8 |
| 3 | 13 | 13 | 13 |
| 4 | 15 | 15 | 15 |
| 5 | 15 | 15 | 15 |
| 6 | 13 | 13 | 13 |
| 7 | 11 | 11 | 11 |
| 8 | 9 | 9 | 9 |
| 9 | 7 | 7 | 7 |
| 10 | 6 | 6 | 6 |
| 11 | 5 | 5 | 5 |
| 12 | 4 | 4 | 4 |

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## Square, Wall Wash, 900lm engine, 69 lm/W at 14W

**Candela Curve**
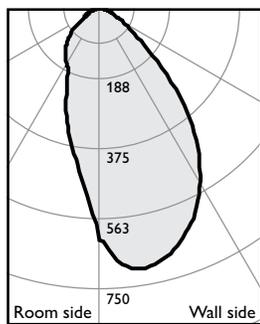


Engine: **C2SLW09935FLUPZU**
Trim: **C2SLWWT**

Output lumens: 827 lms
Input watts: 14 W
CRI: 90 min
CCT[1]: 3500K

**Efficacy:** **59.0 lm/w**
Report[2]: STMR-3202

**Multiple unit data**
Footcandles on wall

| Distance from ceiling in feet | 2' from wall / 2' on ctr. | | |
|---|---|---|---|
| 1 | 33 | 35 | 33 |
| 2 | 65 | 70 | 65 |
| 3 | 62 | 67 | 62 |
| 4 | 42 | 45 | 42 |
| 5 | 26 | 28 | 26 |
| 6 | 17 | 18 | 17 |
| 7 | 11 | 12 | 11 |
| 8 | 8 | 8 | 8 |
| 9 | 6 | 6 | 6 |
| 10 | 5 | 5 | 5 |
| 11 | 4 | 4 | 4 |
| 12 | 3 | 3 | 3 |

**Multiple unit data**
Footcandles on wall

| Distance from ceiling in feet | 2' from wall / 3' on ctr. | | |
|---|---|---|---|
| 1 | 15 | 12 | 15 |
| 2 | 28 | 24 | 28 |
| 3 | 27 | 25 | 27 |
| 4 | 19 | 20 | 19 |
| 5 | 13 | 13 | 13 |
| 6 | 9 | 9 | 9 |
| 7 | 7 | 7 | 7 |
| 8 | 5 | 5 | 5 |
| 9 | 4 | 4 | 4 |
| 10 | 3 | 3 | 3 |
| 11 | 3 | 3 | 3 |
| 12 | 2 | 2 | 2 |

**Multiple unit data**
Footcandles on wall

| Distance from ceiling in feet | 3' from wall / 3' on ctr. | | |
|---|---|---|---|
| 1 | 6 | 5 | 6 |
| 2 | 13 | 12 | 13 |
| 3 | 18 | 18 | 18 |
| 4 | 18 | 19 | 18 |
| 5 | 15 | 16 | 15 |
| 6 | 12 | 12 | 12 |
| 7 | 9 | 9 | 9 |
| 8 | 7 | 7 | 7 |
| 9 | 6 | 6 | 6 |
| 10 | 4 | 4 | 4 |
| 11 | 4 | 4 | 4 |
| 12 | 3 | 3 | 3 |

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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.