



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.

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

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Cat.No: \_\_\_\_\_

Type: \_\_\_\_\_

Lamps: \_\_\_\_\_ Qty: \_\_\_\_\_

Notes: \_\_\_\_\_

### Engine

example: C2RDL06SPUPZULS6010

Series <sup>1</sup>	Style <div>DL</div>	Lumens	CRI <div>9</div>	CCT	Beam	Dimming/Voltage	Flange	Options
<b>C2R</b> Calculite 2" round	<b>DL</b> Downlight	<b>06</b> 600lm	<b>9</b> 90CRI	<b>27</b> 2700K	<b>NS</b> Narrow Spot (15°) <b>SP</b> Spot (19°) <b>NF</b> Narrow Flood (30°) <b>FL</b> Flood (55°)	<b>UPZU</b> 0-10V 1% ELV 3% Triac 3% Unv (120V/277V) <b>LU</b> Lutron PEQ 100% – 0.1% Unv (120V/277V)	<b>—</b> Flanged (leave blank) <b>F</b> Flangeless <sup>3</sup>	<b>MesoOptics</b>
<b>C2S</b> Calculite 2" square		<b>09</b> 900lm		<b>30</b> 3000K				<b>—</b> Symmetrical
		<b>15</b> 1500lm <sup>2</sup>		<b>35</b> 3500K <b>40</b> 4000K				<b>LS6010</b> Linear spread 60x10
								<b>ASY21</b> Asymmetrical 21° bend angle <b>ASY8</b> Asymmetrical 8° bend angle
								<b>Hex Cell Louver</b> <b>HCL</b> 2" hex cell louvre Holder standard on light engine order with MesoOptics film option or blank for symmetrical (ex. HCLLS6010)

### Trim

example: C2RDLWT

Series	Style	Finish	Flange
	<div>DL</div>		
<b>C2R</b> Calculite 2" round	<b>DL</b> Downlight	<b>WT</b> Textured white	-   White <b>F</b> Flangeless <sup>3</sup>
<b>C2S</b> Calculite 2" square		<b>WH</b> White (matte) <b>BK</b> Black (painted matte) <b>BT</b> Textured black <b>BZ</b> Bronze <b>D</b> Aluminum diffuse <b>CD</b> Clear diffuse (applied finish)  Special painted finishes available with RAL number.	-   White (matte) <b>P</b> Matching reflector <b>F</b> Flangeless <sup>3</sup>

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

### Accessories (order & install separately)

#### Field installed changeable TIR optics

**CA2NSSFR** 15° TIR reflector  
**CA2SPSFR** 19° TIR reflector  
**CA2NFSFR** 30° TIR reflector  
**CA2FLSFR** 55° TIR reflector

#### Accent accessories

**CL2HCL** 2" hex cell louver

#### MesoOptics accessories for Downlight & Wall Wash

**CA2RSYM** Symmetrical  
**CA2RLS6010** 60x10 linear spread  
**CA2RAS21** 21° bend angle  
**CA2RAS8** 8° bend angle

#### Accessories

**SBA** Interact Ready System Bridge Accessory (refer to Philips System Bridge Accessory specification sheet for options and details)<sup>4</sup>  
**SWZDT** SpaceWise wireless controller with dwell time functionality (order with UPZ dimming option only)

# C2DL Calculite 2"

## Round and Square Downlight

### Applications

- Ideal for use in retail, restaurants, residential, and office spaces to accentuate the space and provide tactical or ambience lighting from a minimalist 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.
- 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. Film is held in place via a holder integral to the engine that fits precisely TIR optic and LED socket.
- **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.
- Other distribution options available including linear spread and asymmetric.
- May be field installed with available accessories.
- Holder is standard on light engines.

### 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](http://www.interact-lighting.com/office) or  
[www.usa.lighting.philips.com/systems/system-areas/offices](http://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

### Hex Cell Louver

- Available as factory installed option or field installed accessory.
- Light engine includes holder attached to primary TIR optic.
- Holder supports one MesoOptics film and one louver.

### 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 >65,000 hours.
- 32°-86°F ambient operating range (0°-30°C).

### Labels and listings

- cULus listed for damp locations, Wet listed for use in covered ceilings with "WL" trim option code
- CEC Title 24 JA8 certified
- CCEA listing on 2RA/2SA frames

### Warranty



5 year limited warranty  
Visit [Signify.com/warranties](http://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	—	—

# C2DL Calculite 2"

## Round and Square Downlight

# interact

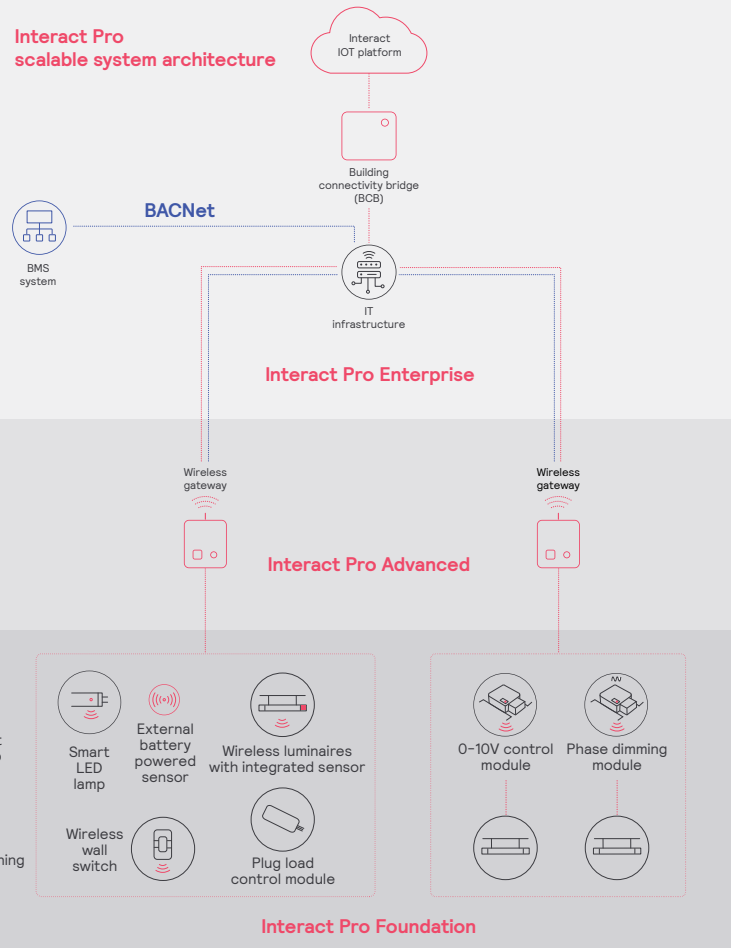
	Interact Pro scalable system		
	Foundation	Advanced	Enterprise
Dimming, grouping, and zoning	✓	✓	✓
Bluetooth and ZigBee enabled	✓	✓	✓
Motion sensing and daylight harvesting	✓	✓	✓
Integration with 0-10V and phase dimming fixtures	✓	✓	✓
Code compliance	✓	✓	✓
Granular dimming and dwell time	✓	✓	✓
Energy 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

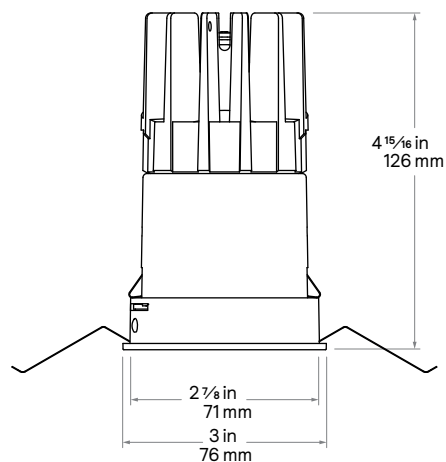
### Interact Pro scalable system architecture



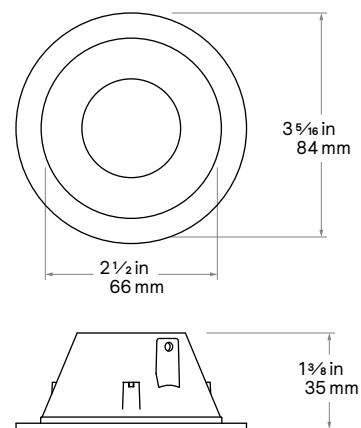
# C2DL Calculite 2"

## Round and Square Downlight

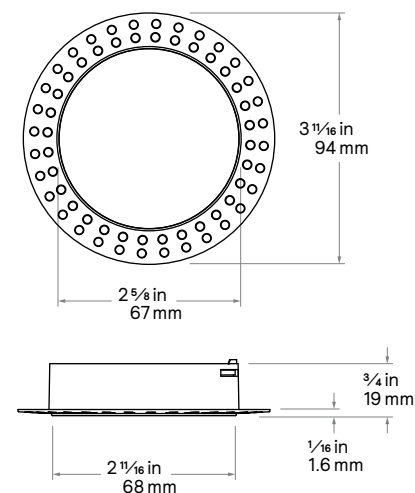
Round Engine



Round Trim

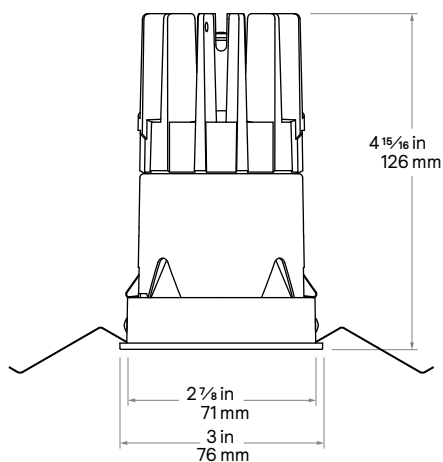


Round Mud-in ring

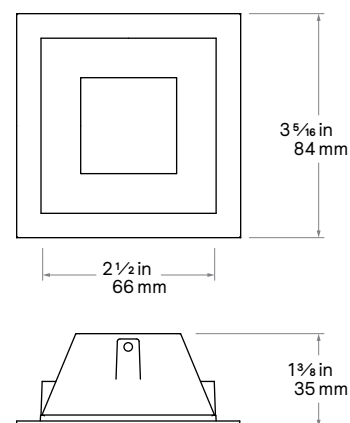


\* Mud-in rings are integral to the light engine. Must order flangeless light engine and trim with (F) option code.

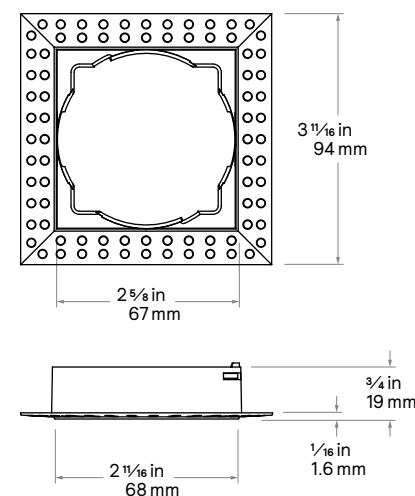
Square Engine



Square Trim



Square Mud-in ring



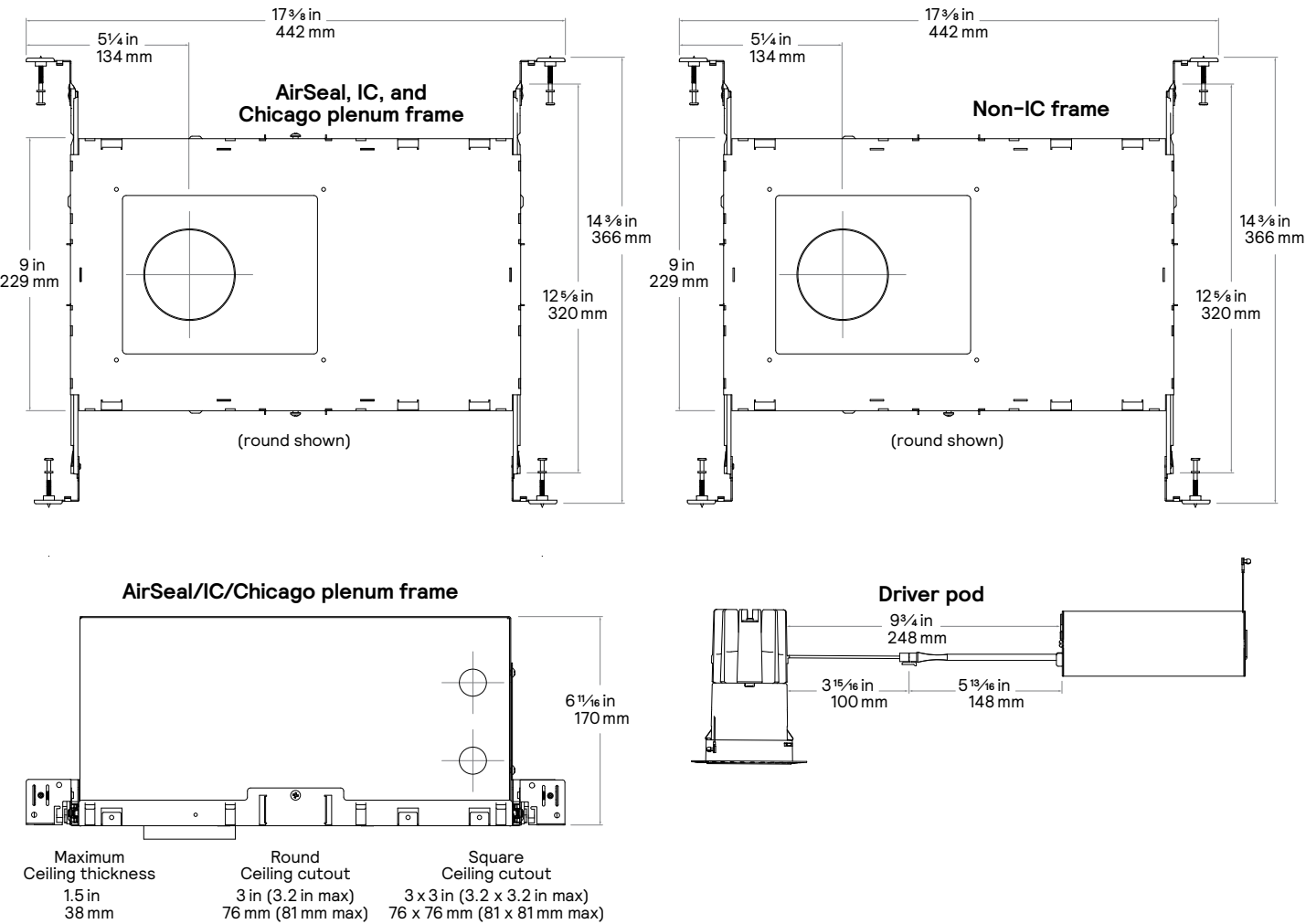
\* Mud-in rings are integral to the light engine. Must order flangeless light engine and trim with (F) option code.

# C2DL    Calculite 2"

## Round and Square Downlight

### Frames

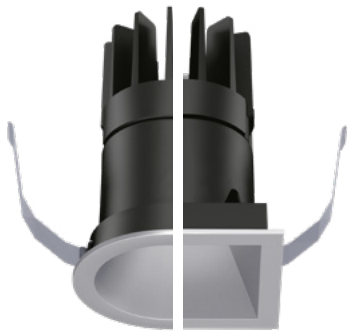
The standard C2R/C2S light engines may be installed non-IC as a remodeler with no additional frame-in kit required. Optional frames below are available to facilitate ceiling construction



# C2DL Calculite 2"

## Round and Square Downlight

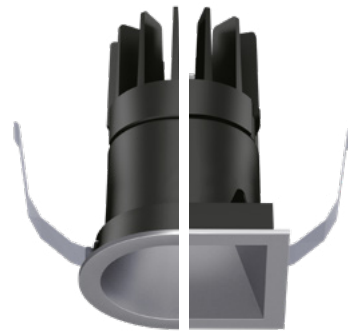
**Finishes** Shown as round reflectors but represent the finish of Calculite square reflectors.



Matched Reflector



Flangeless



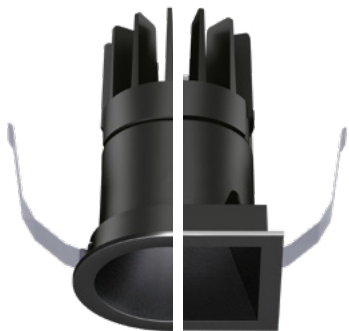
Matched Reflector



Flangeless

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

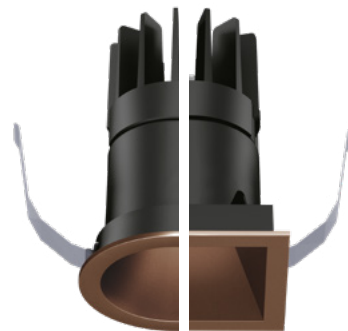
**Aluminum diffuse (D):** Semi-specular finish that softens the light at the source of the reflector and creates a subtle, even luminance from the reflector cone.



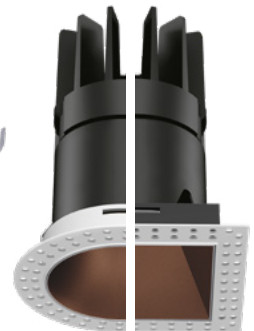
Matched Reflector



Flangeless



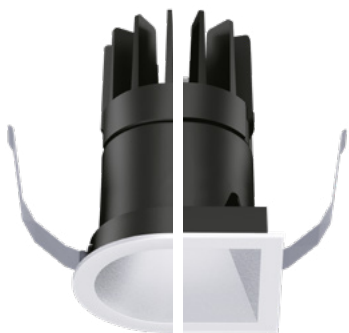
Matched Reflector



Flangeless

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

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



Matched Reflector



Flangeless



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).



Matched Reflector



Flangeless



Matched Reflector



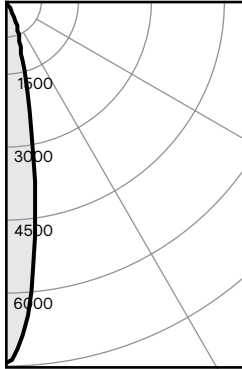
Flangeless

# C2DL Calculite 2"

## Round and Square Downlight

### Spot beam, 1000lm Engine, 66.9lm/W at 14.0W

#### Candela Curve



Engine: C2DL09935SPUOZU  
Trim: C2RDLWT

Output lumens: 936 lms  
Input watts: 14 W  
CRI: 90 min  
CCT: 3500K  
Spacing Crit.: 0.32  
Beam Angle: 18°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	888	94.9%
0-40	906	96.8%
0-60	926	98.9%
0-90	936	100.0%

Angle	Mean CP	Lumens
0	5900	
5	4761	
10	2572	380
15	1179	
20	653	348
25	391	
30	62	160
35	26	
40	19	18
45	15	
50	12	11
55	10	
60	7	9
65	6	
70	4	6
75	3	
80	2	3
85	1	
90	0	1

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	236	1.6'
6'	164	1.9'
7'	120	2.2'
8'	92	2.6'
9'	73	2.9'

\* 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'	45.0	0.62
6'	29.0	0.41
7'	21.0	0.29
8'	17.0	0.24
9'	14.0	0.19

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

Efficacy: 66.9lm/w  
Report: STMR-3196

#### Adjustment factors

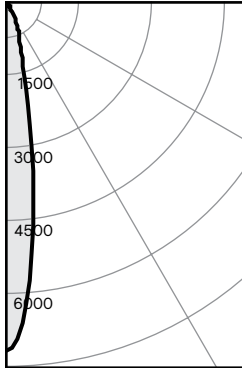
Finish	Lumens
CL = 100%	2000lm = 133%
CC = 95%	1500lm = 100%
CD = 87%	1000lm = 67%
CZ = 63%	500lm = 33%
WH = 87%	
BK = 57%	

#### 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%											
Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106	100
	1	115	113	111	109	111	111	107	104	103	101	96
	2	111	107	104	102	106	101	103	99	100	97	93
	3	108	103	99	96	102	96	99	94	97	93	90
	4	104	99	95	92	98	91	96	90	94	89	87
	5	101	95	91	88	95	88	93	87	91	87	85
	6	98	92	88	85	92	85	90	84	89	84	82
	7	96	89	85	82	89	82	88	82	87	81	80
	8	93	87	83	80	86	80	85	80	85	79	78
	9	91	84	81	78	84	78	83	77	83	77	76
10	89	82	78	76	82	76	81	76	81	75	74	

### Spot beam, 1000lm Engine, 67.8lm/W at 14.0W

#### Candela Curve



Engine: C2SDL09935SPUOZU  
Trim: C2SDLWT

Output lumens: 949 lms  
Input watts: 14 W  
CRI: 90 min  
CCT: 3500K  
Spacing Crit.: 0.32  
Beam Angle: 18°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	883	93.0%
0-40	921	97.0%
0-60	939	98.9%
0-90	949	100.0%

Angle	Mean CP	Lumens
0	5700	
5	4577	
10	2415	363
15	1117	
20	649	331
25	441	
30	169	189
35	51	
40	18	38
45	13	
50	10	10
55	9	
60	7	8
65	5	
70	4	5
75	3	
80	2	3
85	1	
90	0	1

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	228	1.6'
6'	158	1.9'
7'	116	2.2'
8'	89	2.6'
9'	70	2.9'

\* 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'	45.0	0.62
6'	29.0	0.41
7'	21.0	0.29
8'	17.0	0.24
9'	14.0	0.19

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

Efficacy: 67.8lm/w  
Report: STMR-3198

#### Adjustment factors

Finish	Lumens
CL = 100%	2000lm = 133%
CC = 95%	1500lm = 100%
CD = 87%	1000lm = 67%
CZ = 63%	500lm = 33%
WH = 87%	
BK = 57%	

#### 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%											
Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106	100
	1	115	113	111	109	110	107	107	104	103	101	96
	2	111	107	104	101	105	100	102	98	99	96	93
	3	107	102	99	96	101	95	99	93	96	92	89
	4	104	98	94	91	97	90	95	89	93	88	86
	5	101	94	90	87	94	87	92	86	90	85	83
	6	98	91	87	84	90	84	89	83	88	82	81
	7	95	88	84	81	88	81	86	80	85	80	78
	8	92	85	81	78	85	78	84	78	83	78	76
	9	90	83	79	76	82	76	82	76	81	75	74
10	87	81	76	74	80	74	80	74	79	73	72	

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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