LIGHTOLIER

Downlighting

Calculite LED 3"

C3RDL Round downlight

Project:

Location:

Cat.No:

Type:

Qty:

Notes:

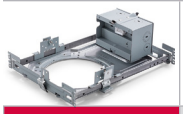
Calculite LED 3" features industry leading visual comfort, excellent uniform illumination over time, and patented installation flexibility. Optical cutoff of 50° coupled with exceptional 2 Step MacAdam ellipse color consistency make the Calculite 3" downlight an ideal choice for open office, retail,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

Buy American Act of 1933 (BAA) Compliant luminaire*: Complete luminaire = Frame-BAC + Engine-BAC + Trim-BAC

* BAA compliance requires that BAC option be selected for each of frame, engine, and trim.
Frame, engine, and trim will be shipped together as a single product.
Accessories (optional) are not currently BAA-compliant.

Follow the ordering guidelines below. Each step is a separate order line.

Step 1 — **Frame:** Ordered & shipped separately.



Frame — **Example:** 3RN

3R	

Step 2 — **Engine & Trim:** Ordered & shipped as a single product.

Engine — **Example:** C3L10935MZ10U-C3RDLCC

C3L		–	C3R	

Step 3 (optional) — **Accessories:** Ordered & shipped separately.

Frame

Note: For remodeler installations, order light engine and trim only (no frame needed). **example:** 3RAS

Series	Installation	Voltage / Options	
3R			
3R Uniframe 3" round frame	**N** New Construction Non-IC	– Universal 120/277/347V	**LC** Chicago plenum[8] **EM6** Emergency, 6W Self-Test/Self-Diagnostic[1]
	A AirSeal IC (1000lm max)	– Standard Universal 120/277/347V	**S** Shallow Universal 120/277/347V[2]

Engine

example: C3L10930NZ10US

Series	Lumens	CRI / CCT	Beam	Dimming	Options	Voltage	Plenum
C3L							
C3L Calculite 3" light engine	**05** 500lm **07** 750lm **10** 1000lm **15** 1500lm[3] **18** 1800lm[3]	**927** 90CRI / 2700K **930** 90CRI / 3000K **935** 90CRI / 3500K **940** 90CRI / 4000K	**N** Narrow (33°) **M** Medium (55°) **W** Wide (62°)	**Z10** 0-10V 1%	**---** None **D2O** Dim to Off	**U** 120V/277V **3** 347V (Z10 only)	– Standard
				L01 Lutron PEQ0 EcoSystem 0.1% **L1** Lutron LDE1 EcoSystem[4]		**U** 120V/277V	
	10 1000lm	**9D2W** 90CRI / 3000-1800K For new const. (N frame and Z10 engine only)		**D** DALI 0.1%	**---** None **LIN** Linear	**U** 120V/277V	
				SOL 0-10V 0.1% **DMX** Digital Multiplex w/ RDM 0.1%	**---** None **LIN** Linear **SQR** Square	**U** 120V/277V	
				E Forward/Reverse Phase		**1** 120V	
				RA Integral Interact Pro RF sensor[5]		**U** 120V/277V	
	07 750lm **10** 1000lm	**927** 90CRI / 2700K **930** 90CRI / 3000K **935** 90CRI / 3500K	**N** Narrow (33°) **M** Medium (55°) **W** Wide (62°)	**Z10** 0-10V 1%	**---** None	**U** 120V/277V	**R** Remodeler[6] **S** Shallow[2]
				E Forward/Reverse Phase		**1** 120V	

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Round downlight

Trim

example: C3RDLBTF

Series	Style	Reflector	Flange	Flange	Options
C3R	**DL**				
C3R Calculite 3" round trim	**DL** Downlight	**BK** Black (anodized) **CD** Comfort clear diffuse **CL** Specular clear **CZ** Champagne bronze (anodized) **CC** Comfort clear	**–** White (matte) **P** Matching reflector **F** Flangeless[7]	**–** Standard depth with 50° cutoff	**–** None **IEM6** Trim mounted EM test switch (standard depth trims only)
		WH White (matte)	**–** White (matte) **F** Flangeless[7]	**–** Standard depth with 50° cutoff **S** 1" regress cast aluminum (wide beam only)	
		WT Textured white (painted)	**P** Matching reflector **F** Flangeless[7]		
		BT Textured black (painted) **BZ** Bronze (painted) **D** Aluminum diffuse (painted)	**–** White (matte) **P** Matching reflector **F** Flangeless[7]		

Accessories (order & install separately)

SBA	Interact Ready System Bridge (compatible with 0-10V, see SBA spec sheet) Requires IRT9015 IR remote & Interact Pro App for commissioning.
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 round flangeless installs (ordered with a flangeless trim)
CAEM6TSCP	Must be ordered with EM6 frame for remote test switch (see page 3 for details)
T347-75VA	347:120V step-down transformer for non-IC (N) frame only (see page 3 for details). Not compatible with emergency options.

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		

Footnotes for page 1

1. Emergency (EM6) frame is compatible with reflector mounted test switch when trim is ordered with IEM6 option code. For remote mounted test switch, order EM6 frame and CAEM6TSCP accessory. Not compatible with 347V.
2. 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).
3. The 1500lm (15) and 1800lm (18) options are not available with standard AirSeal IC frame (3RA-).
4. Not available with 500lm (05) option.
5. Linear driver profile. See page 7 for details. Specify only with non-IC (N) frame, not for use with LC or EM6 options.
6. For remodeler installations, order light engine and trim only (no frame needed).
7. Flangeless (F) trims require CA3RFT mud-in accessory for installation.
8. Chicago plenum (LC) frame option not available with EM6 options, nor with RA engine dimming option.

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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), logarithmic curve is standard, specify D2O for factory-set dim-to-off function, consult factory for linear dimming curve.
- EldoLED SOLODrive (SOL) 0-10V 0.1%
- Lutron PEQ0 (L01) Hi-Lume Premier EcoSystem 0.1%
- Lutron LDE1 (L1) EcoSystem 1%
- Electronic low voltage (E) - forward or reverse phase dimming, remodel and AirSeal IC Shallow are FCC Class B
- DALI (D) - DT6 DALI 0.1%
- DMX (DMX) - Digital multiplexing with RDM 0.1%
- Dim to Warm (D2W) - option changes CCT from 3000 - 1800K gradually as it dims, dimming agnostic

Dimming options:

- The following are factory-set for the SOL, D, and DMX driver options (ex. DMXLIN):
- SOL/D/DMX: Logarithmic (-) standard
- SOL/D/DMX: Linear (LIN)
- SOL/DMX: Square (SQR)

Optical systems

MesoOptics PET optical diffusion film: Provides a smooth beam shape and mitigates color over angle with optimized luminaire efficiency.

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 downlight trims available to aesthetically match adjustable accent in painted finish.

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

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) and CAEM6TSCP mounting plate accessory.
- Refer to Calculite-LyteProfile-EasyLyte Emergency Battery Pack specification sheet for more details.

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 Z10 dimming only and include dedicated 347V driver. For 347V non-Z10 dimming, order T347-75VA field-installed step-down transformer accessory.

Remodeler Engine (R)

- No frame is required.
- Remodeler engine is suited for new construction, remodel, and retrofit applications.
- All wiring is done on the integral j-box to the engine.
- LCEM6 6W battery pack accessory is available for field installation.

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 **CA3RFT** 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).

T347-75VA Field installable: 347:120V 75VA step-down transformer, attaches to knock out on frame junction box, for use with non-IC (N) frame only. Not for use with emergency options.

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

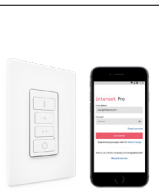
5 year limited warranty

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

C3RDL Calculite LED 3"

Round downlight

interact



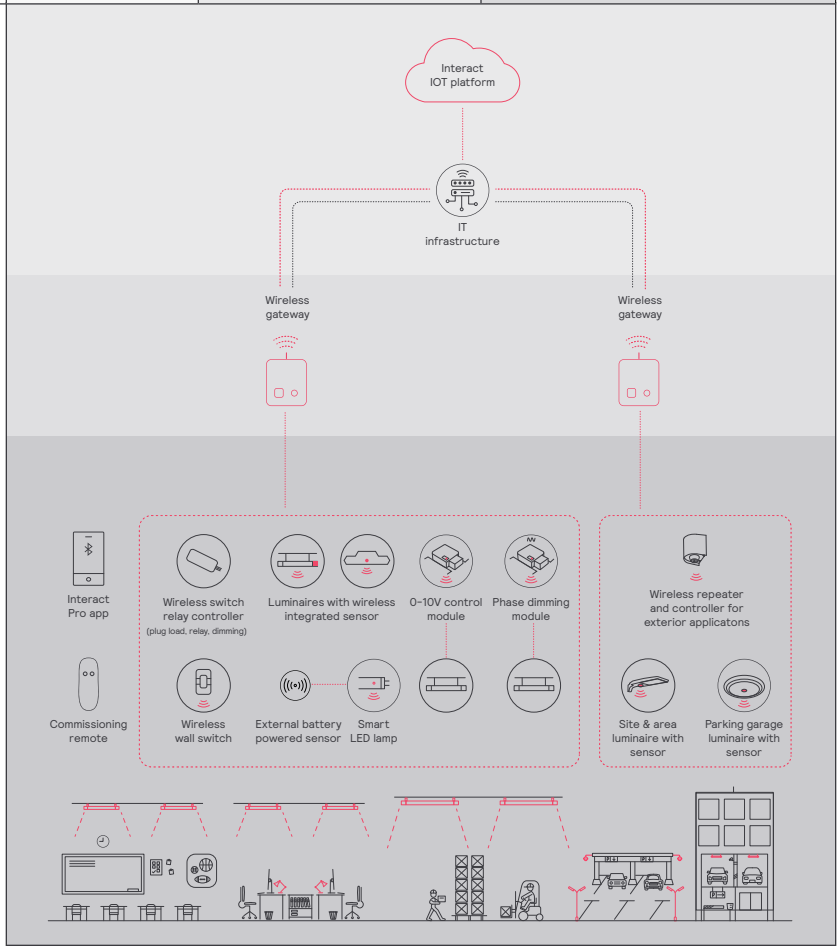
		Standalone	Gateway Connected: Option 1	Gateway Connected: Option 2
Dimming, grouping, and zoning		✓	✓	✓
Bluetooth and ZigBee enabled		✓	✓	✓
Motion sensing and daylight harvesting		✓	✓	✓
Integration with 0–10V and phase dimming fixtures		✓	✓	✓
Code compliance		✓	✓	✓
Granular dimming and dwell time		✓	✓	✓
Correlated color temperature (CCT) tuning by switch	New	✓	✓	✓
Support for sensor-based Tunable White luminaires	New	✓	✓	✓
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
• Zones + groups	64
Total number of ZGP devices (sensors and switches)	50
• Sensors	30
• Switches	50

Group level	
Recommended number of lights	40 (maximum 150)
Number of ZGP devices	5
Number of scenes	16



C3RDL Calculite LED 3"

Round downlight

Wireless controls options

Interact

- SWZCS is a connected sensor with integral occupancy and daylight sensing and supports wireless mesh connectivity.
- The sensor works in the standalone mode (similar to SpaceWise) when configured without a gateway or in a cloud connected mode if a compatible gateway is used.
- Interact 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 on-site to identify and group devices together.

  Compatible with:

  - SWS200 & UID8465 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
  - LCN3110: battery powered IP65 presence sensor, OCC sensor IA CM IP65W
  - LCN3120: battery powered IP65 presence & daylight sensor, OCC-DL sensor IA CM IP65 WH
- For more information on Interact visit: interact-lighting.com/interactproscalablesystem

Radio only sensor (RA or RADIO)

- Integral RA or 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.
- Interact 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, identify and group devices together onsite.
- Compatible with SWS200 and UID8465 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).
- For more information on Interact visit: interact-lighting.com/interactproscalablesystem

Sensor bundle (IAOSB or SB)

- 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 SWS200 wireless scene switch, wireless Occ sensor (OCC SENSORIA 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.
- IAOSB or SB option in addition to occupancy and daylights 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: interact-lighting.com/interactproscalablesystem

Emergency Options (ER100)

- **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.

Wired controls options

Interact (PoE):

- PoE based IoT connected lighting solution for large enterprises that span across multiple floors, buildings and require multiple gateways.
- Use Interact software and insights to increase building efficiency, achieve building wide integration and optimize space through occupancy analytics.
- Test switch and indicator light mounted on side of chassis on one end.
- Supports advanced IoT Apps on Personal Control, Space Management, wayfinding, room/desk reservation and offers open APIs for light control and data exchange.
- 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.
- PoE lighting controller is accessible from below.
- 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: interact-lighting.com/office or www.usa.lighting.philips.com/systems/system-areas/offices

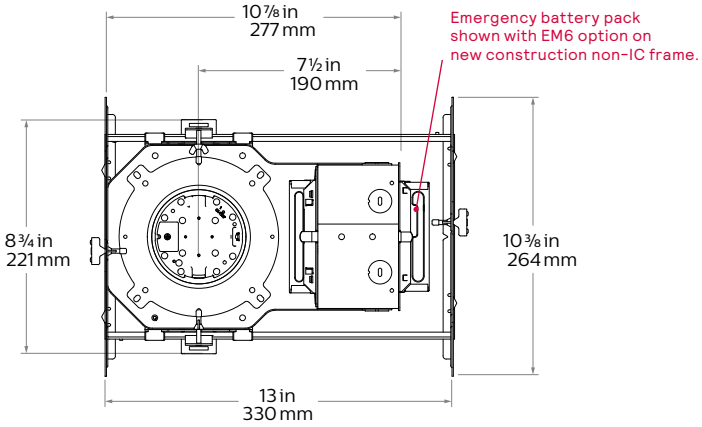
Interact supported sensor option codes across Genlyte product lines

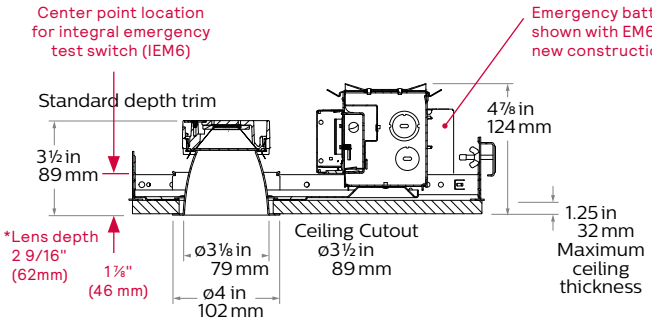
	Evokit	Day-Brite	Ledalite	Lightolier
ZigBee + Bluetooth + Sensing	SWZCS	SWZCS	CS	SBA accessory (external)
ZigBee + Bluetooth	RADIO	RADIO	RA	RA
ZigBee + Bluetooth + Sensing + Environmental data	IAOSB	IAOSB	SB	SB
ZigBee + Highbay + Sensing	-	SWZCSH	-	-

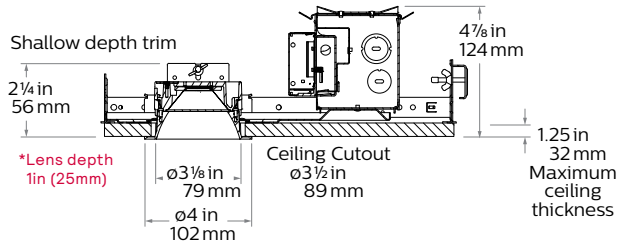
C3RDL Calculite LED 3"

Round downlight

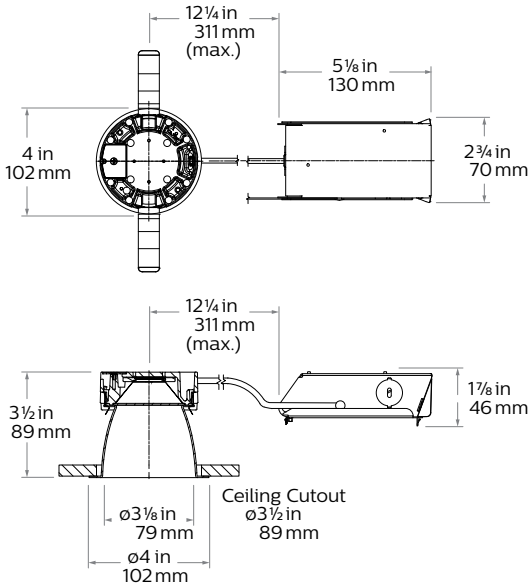
New construction (N)



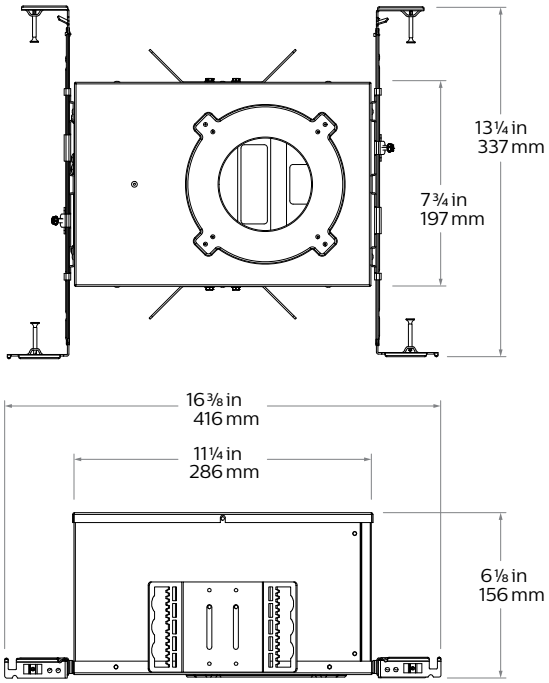




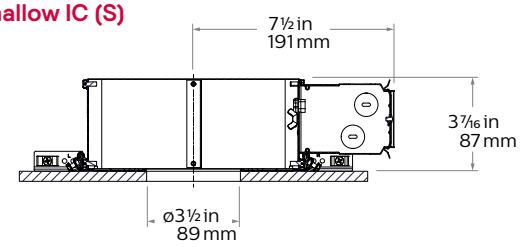
Remodeler (R)

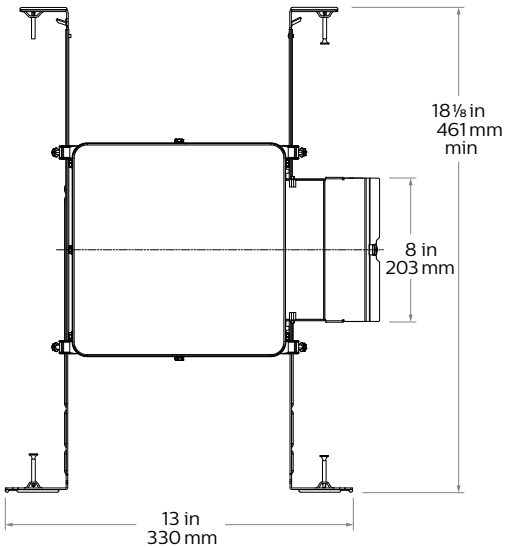


Standard IC (A) and Chicago plenum (LC)



Shallow IC (S)

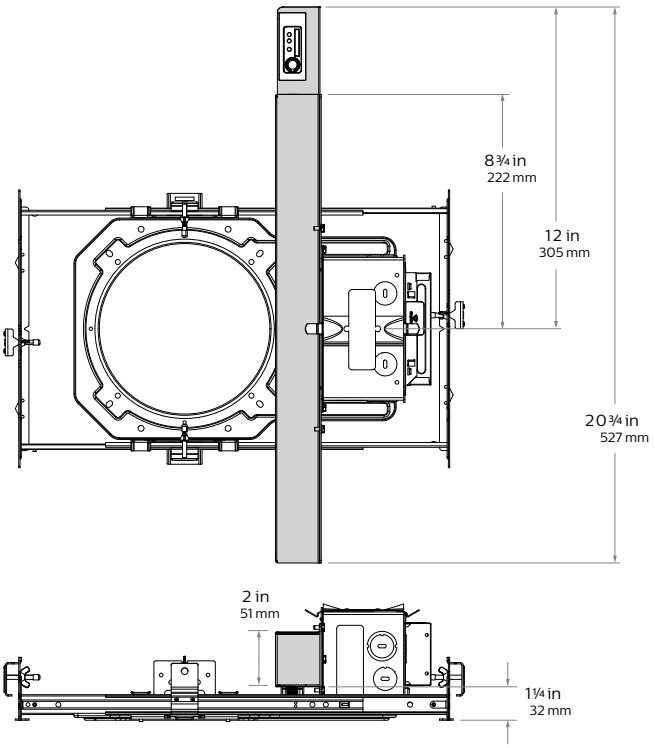




C3RDL Calculite LED 3"

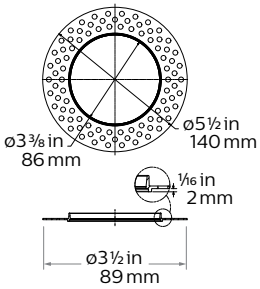
Round downlight

Linear driver (RA)



Requires either top accessory or 19" plenum space without sensor, and 22" with sensor.

Flangeless mud-in ring (CA3RFT) accessory



C3RDL Calculite LED 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.

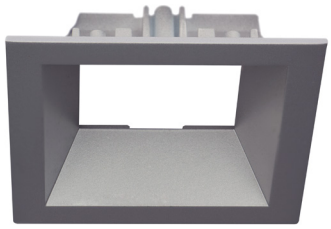
White (WH): (matte) Brightest illuminated aperture and provides the smoothest transition to most ceilings when off (white is only available with a white flange).

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.

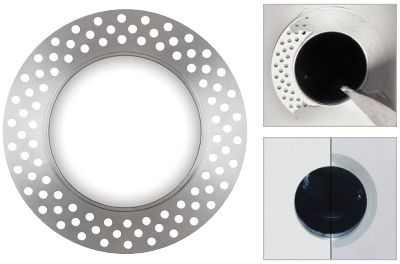
Textured black (BT):
Matte painted finish.

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.



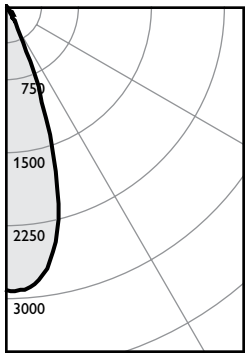
Mud-in ring (FT): Low profile, machined aluminum mud-in ring provides a raised rib to plaster up to and a 3⁄16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.

C3RDL Calculite LED 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%		

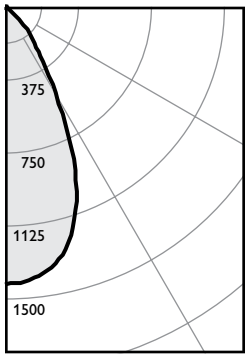
Coefficients of utilization

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

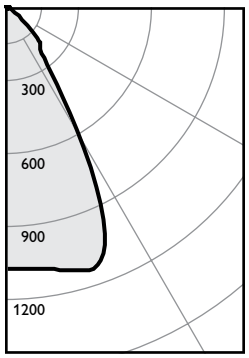
1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State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

C3RDL Calculite LED 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%		

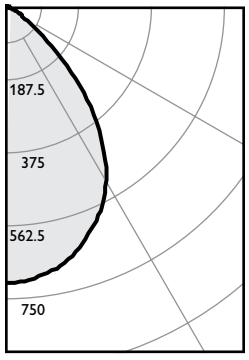
Coefficients of utilization

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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