

# PHILIPS LIGHTOLIER

## Downlighting

### Calculite LED gen 3

4" round wall wash,  
500-3000lm



Calculite LED 4" generation 3 features industry leading visual comfort, excellent uniform illumination over time, and patented installation flexibility.

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

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

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

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

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

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

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

#### Frame

example: C4RN

Series	Aperture	Installation	Voltage/Options
<b>C4</b>	<b>R</b>		
<b>C4</b> Calculite LED 4" aperture	<b>R</b> Round	<b>N</b> New construction <sup>1</sup> <b>R</b> Remodeler	— Universal 120V/277V (specify for Power Over Ethernet configurations) <b>3</b> 347V (not compatible with ELV dimming) <sup>3</sup> <b>EM</b> Emergency <sup>1,2</sup> <b>LC</b> Chicago Plenum <sup>1</sup>

#### Engine

example: C4L15835NZ10U

Series	Lumens	CRI	CCT	Beam	Dimming	Voltage
<b>C4L</b>				<b>W</b>		
<b>C4L</b> Calculite LED 4" aperture	<b>05</b> 500lm <sup>4</sup> <b>10</b> 1000lm <b>15</b> 1500lm <b>20</b> 2000lm <sup>5</sup> <b>25</b> 2500lm <sup>5</sup> <b>30</b> 3000lm <sup>5</sup>	<b>8</b> 80 CRI <b>9</b> 90 CRI	<b>27</b> 2700 K <b>30</b> 3000 K <b>35</b> 3500 K <b>40</b> 4000 K	<b>W</b> Wide	<b>Z10</b> 0-10 V 1% <sup>4</sup> <b>SOL</b> EldoLED Solo 0-10 V 0.1% <b>D</b> Dali <b>L</b> Lutron LDE1 EcoSystem (fade-to-black) <b>E</b> ELV (120V dimming only) <sup>5</sup> <b>P</b> Power over Ethernet Only compatible with 1000 (10) to 2500 (25) lumen configurations.	<b>U</b> Universal 120 V/277 V/347 V <b>1</b> Universal 120 V/277 V <b>E</b> Ethernet 48 V DC

#### Trim

example: C4RWWCCP

Series	Aperture	Style	Finish	Flange
<b>C4</b>	<b>R</b>			
<b>C4</b> Calculite LED 4" aperture	<b>R</b> Round	<b>WW</b> Open Wall Wash <b>LW</b> Lensed Wall Wash <sup>3</sup> <b>CW</b> Corner Wall Wash <sup>7</sup> <b>DW</b> Double Wall Wash <sup>7</sup>	<b>BK</b> Black (matte) <b>CL</b> Specular clear <b>CC</b> Comfort clear <b>CD</b> Comfort clear diffuse <b>CZ</b> Champagne bronze <b>WH</b> White (matte)	— White (matte) <b>P</b> Polished <b>F</b> Flangeless <sup>7</sup> — White (matte) <b>F</b> Flangeless <sup>7</sup>

#### Accessories

<b>CA4RFT</b>	Mud-in ring for use with flangeless installations (ordered with a flangeless trim)
<b>CAEM</b>	Field installable EM pack
<b>C4RVPWH</b>	IP65 rated vandal proof matte white accessory that mounts onto a flangeless trim (not available for use with Lensed Wall Wash)
<b>SWZDT</b>	SpaceWise wireless controller with dwell time functionality, compatible with all 0-10V configurations (for details see "SWZDT" spec sheet)

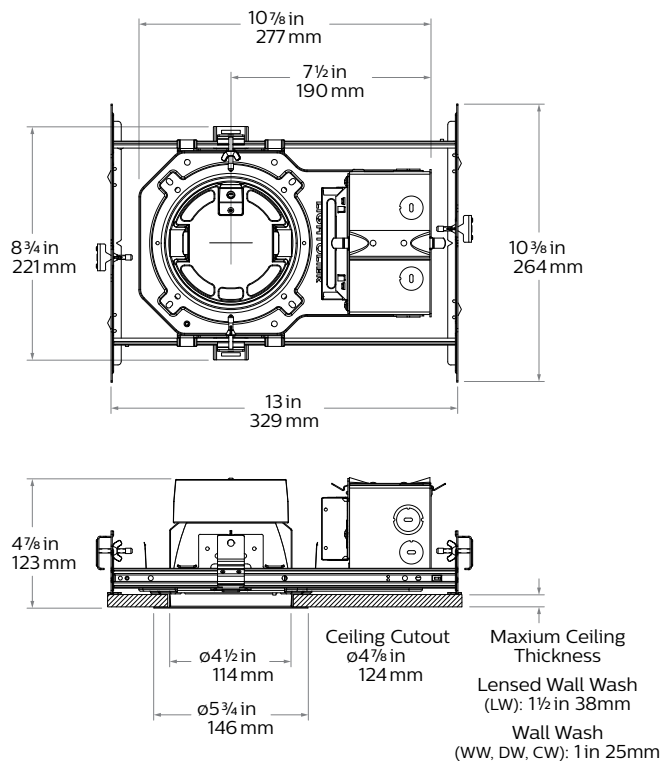
- Emergency (EM) and Chicago Plenum (LC) options are only available with New construction (N) installations.
- Emergency (EM) frame comes with emergency battery pack and ceiling mountable test switch. Reflector mounted test switch requires above ceiling access. For reflector mounted test switch, order emergency frame and add "EM" suffix to reflector (example: C4RLWCCEM).
- The 347V (3) is not compatible with lumen packages over 2500lm (25) for the Lensed Wall wash (LW) style.
- The 500lm (05) package is only compatible with 0-10V (Z10) dimming.
- The 2500lm (25), and 3000lm (30) packages have marked spacing requirements (see page 3).
- ELV (E) dimming is only compatible with up to 2000lm (20) configurations.
- Corner (CW) and Double (DW) Wall Wash are not available with flangeless (F) option.



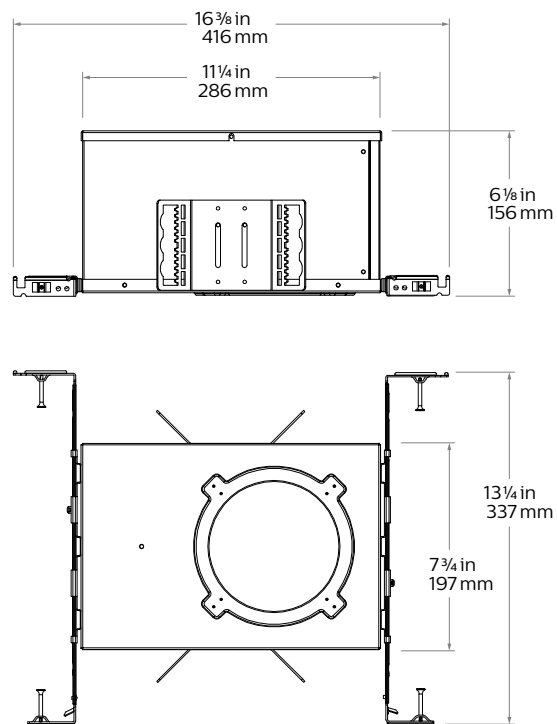
# C4RWW Calculite LED generation 3

## 4" round wall wash

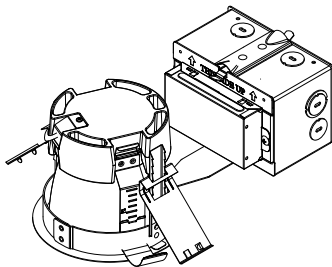
### New Construction (N)



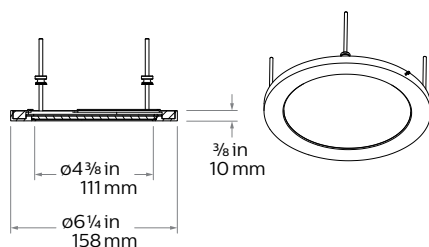
### Chicago Plenum (LC)



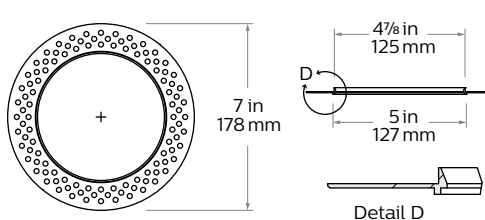
### Remodeler (R)



### Vandal Proof (VP) accessory



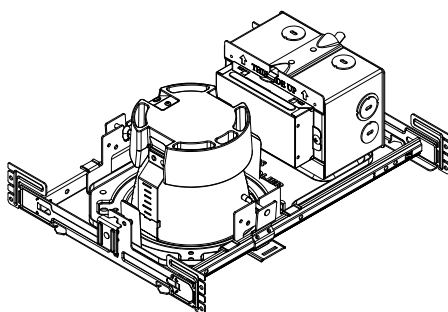
### Flangeless mud-in ring (CA4RFT) accessory



Consult factory for wood installation instructions.

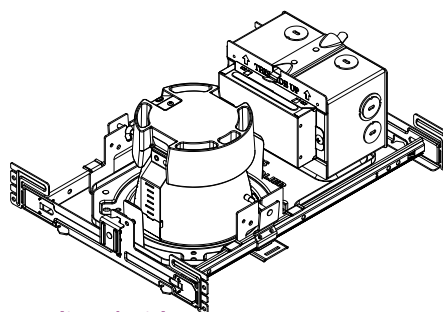
# C4RWW Calculite LED generation 3

## 4" round wall wash



Narrow

Light engine	Input volts	Input freq	Input current	Drive current	Input power	THD power	Power factor
C4L05_NZ10U	120V	50/60Hz	0.05	110 mA	6W	<20%	>0.95
	277V		0.03			<20%	>0.90
C4L10_NZ10U	120V	50/60Hz	0.08	230 mA	11W	<15%	>0.95
	277V		0.04			<20%	>0.95
C4L15_NZ10U	120V	50/60Hz	0.12	360 mA	16W	<10%	>0.95
	277V		0.06			<15%	>0.95
C4L20_NZ10U	120V	50/60Hz	0.17	490 mA	21W	<10%	>0.95
	277V		0.08			<15%	>0.95
C4L25_NZ10U	120V	50/60Hz	0.22	640 mA	27W	<10%	>0.95
	277V		0.10			<15%	>0.95
C4L30_NZ10U	120V	50/60Hz	0.27	790 mA	33W	<10%	>0.95
	277V		0.13			<15%	>0.95



Medium/Wide

Light engine	Input volts	Input freq	Input current	Drive current	Input power	THD power	Power factor
C4L05_MZ10U	120V	50/60Hz	0.05	110 mA	6W	<20%	>0.95
	277V		0.03			<20%	>0.90
C4L10_MZ10U	120V	50/60Hz	0.08	230 mA	11W	<15%	>0.95
	277V		0.04			<20%	>0.95
C4L15_MZ10U	120V	50/60Hz	0.12	350 mA	16W	<10%	>0.95
	277V		0.06			<15%	>0.95
C4L20_MZ10U	120V	50/60Hz	0.16	470 mA	21W	<10%	>0.95
	277V		0.08			<15%	>0.95
C4L25_MZ10U	120V	50/60Hz	0.21	610 mA	25W	<10%	>0.95
	277V		0.09			<15%	>0.95
C4L30_MZ10U	120V	50/60Hz	0.26	770 mA	31W	<10%	>0.95
	277V		0.12			<15%	>0.95

Narrow (Power over Ethernet)

Light engine	Input			
	Volts <sup>1</sup>	Voltage <sup>2</sup>	Freq	Power
C4L10___NPE	53V	51-54V	DC	160 mA 8.9 W
C4L15___NPE	53V	51-54V	DC	250 mA 13.6 W
C4L20___NPE	53V	51-54V	DC	340 mA 18.5 W
C4L25___NPE	53V	51-54V	DC	460 mA 24.6 W

1. Nominal input volts.  
2. Preferred voltage range.

Medium (Power over Ethernet)

Light engine	Input			
	Volts <sup>1</sup>	Voltage <sup>2</sup>	Freq	Power
C4L10___MPE	53V	51-54V	DC	160 mA 8.8 W
C4L15___MPE	53V	51-54V	DC	250 mA 13.4 W
C4L20___MPE	53V	51-54V	DC	320 mA 17.6 W
C4L25___MPE	53V	51-54V	DC	430 mA 23.2 W

Wide (Power over Ethernet)

Light engine	Input			
	Volts <sup>1</sup>	Voltage <sup>2</sup>	Freq	Power
C4L10___WPE	53V	51-54V	DC	160 mA 8.8 W
C4L15___WPE	53V	51-54V	DC	250 mA 13.4 W
C4L20___WPE	53V	51-54V	DC	320 mA 17.6 W
C4L25___WPE	53V	51-54V	DC	430 mA 23.2 W

### Marked spacing applications

Light engine	2500lm	3000lm
C4L_Z10U series	—	X
C4L_LU series	X	X
C4L_DU series	—	X

Modules marked with an X require marked spacing:  
– Center-to-center of adjacent luminaires: 24" (610mm)  
– Luminaire center to side building member: 12" (305mm)

### Lifetime (TM-21) data

Lumens	Narrow beam	Medium/Wide beam*
500lm 1000lm 1500lm	L90 @ 60,000 hrs.	L90 @ 60,000hrs.
2000lm 2500lm 3000lm*	L90 @ 60,000 hrs.	L85 @ 60,000hrs.

\* Lutron 3000lm with Medium/Wide beam is L80 @ 60,000hrs.

# C4RWW Calculite LED generation 3

## 4" round wall wash

### 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 for Lensed Wall Wash (LW) is 1-1/2" and for Open, Corner, Double Wall Wash (WW, CW, DW) is 2".**

#### Patented install Mounting frame

With no driver attached, this versatile frame is independent of driver accommodating a wide range of lumen packages, driver types and CCTs, including 120V and 277V inputs.

Pre-installed mounting bars allow for fast and tool-less installation into T-grid and hat channel ceilings.

Close-cut aperture design eliminates the possibility of undesired gap between ceiling opening and reflector flange.

Separate wiring compartment for wiring frame to building allows inspection prior to light engine installation.

Simple plug-and-play connection between the frame and light engine from below the ceiling eliminates the need for wiring between frame and LED driver, and also saves time during installation and future replacements/upgrades. Plug-and-play receptacle accommodates technology upgrade of light engines and replacements for the life of the building.

### Drivers

- Advance 0-10V 1% dimming
- Lutron Hi-lume EcoSystem H Series 1% dimming
- EldoLED ECODrive Dali 1% dimming
- EldoLED SOLOdrive 0-10V 0.1% dimming
- ELV dimming

### Power over Ethernet

**Powered via Philips PoE lighting controller:** complies with FCC rules per Title 47 part 15 (Class A) for EMI / RFI (conducted & radiated). PoE lighting controller accessible from below ceiling.

**Rated life:** 60,000 hrs at 70% lumen maintenance based on IES LM-80-08 and TM-21-11.

### Optical systems

#### Comfort throughout the space:

Patented optical system combines primary and secondary optics to provide a true 50° physical cutoff and 45° reflected cutoff virtually eliminating the view of the light source and bright spots in the reflector. A new reflector curve reduces reflector brightness by up to 50% compared to existing products, allowing for the use of higher lumen packages in smaller apertures without creating bright spots in the ceiling.

**Quality of light:** 2 SDCM ensures color consistency from fixture to fixture and over the luminaire's long lifetime. Proprietary optical grade silicone lens with patterned surface provides soft, even beam diffusion without hotspots or dark rings.

### Light Engine

Quick connect power pack comprised of light source and driver 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.

### Options and Accessories

**Flangeless mud-in ring:** Use **CA4RFT** for use with flangeless plaster installations.

**Sloped ceilings:** Compatible with sloped ceiling adapters (see **SCA** spec sheet).

**Vandal Proof:** Use **C4RVPWH** for an IP65 rated vandal proof matte white accessory. Must be ordered with a flangeless trim. Not available with Lensed Wall Wash.

### ENERGY STAR® exceptions

90 CRI configurations

Champagne Bronze and Black finishes

347V and Emergency configurations

Dali & EldoLED SOLO dimming

Power over Ethernet driver

### Labels and Listings

cULus listed for wet location (lensed wall washers)

ENERGY STAR®

CCEA (frames with \*LC suffix)

IP65 rated with vandal proof accessory

IBEW Union made (light engines & reflectors)

RoHS compliant

### Warranty

5 year warranty on complete system.

Complete warranty available at: [http://images.philips.com/is/content/PhilipsConsumer/PDFDownloads/United%20States/ODLI20150930\\_003-UPD-en\\_US-Philips-warranty-indoor-PLS-us.pdf](http://images.philips.com/is/content/PhilipsConsumer/PDFDownloads/United%20States/ODLI20150930_003-UPD-en_US-Philips-warranty-indoor-PLS-us.pdf)



# C4RWW Calculite LED generation 3

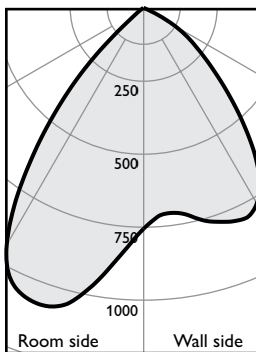
## 4" round wall wash

### Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 97%	2000lm = 133%
CZ = 63%	80CRI 2700K = 87%	1500lm = 100%
WH = 87%	90CRI 3000K = 77%	1000lm = 67%
BK = 57%	90CRI 2700K = 73%	500lm = 33%

### Wall Wash, 1500lm Engine, 102.8 lm/W or 109.3 lm/W at 13.4W (Power over Ethernet)

#### Candela Curve



Frame: **C4RN**  
Engine: **C4L15835WZ10U**  
Trim: **C4RWWCL**

Output lumens: 1465 lms  
Input watts: 14.3 W  
CRI: 80 min  
CCT<sup>1</sup>: 3500K

**Efficacy: 102.8 lm/w**  
Report<sup>2</sup>: T20170304

#### Multiple unit data

Footcandles on wall

	2' from wall		
	3' on ctr.		
Distance from ceiling in feet			
1	22	16	22
2	44	33	44
3	37	40	37
4	29	31	29
5	22	23	22
6	17	17	17
7	14	14	14
8	12	12	12
9	10	10	10
10	9	9	9
12	7	7	7
14	6	6	6

#### Multiple unit data

Footcandles on wall

	3' from wall		
	3' on ctr.		
Distance from ceiling in feet			
1	9	9	9
2	19	18	19
3	27	26	27
4	27	28	27
5	24	24	24
6	20	21	20
7	17	17	17
8	15	14	15
9	12	12	12
10	11	11	11
12	9	9	9
14	8	8	8

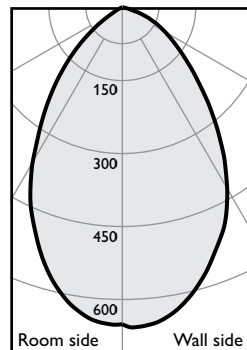
#### Multiple unit data

Footcandles on wall

	3' from wall		
	4' on ctr.		
Distance from ceiling in feet			
1	8	7	8
2	16	13	16
3	22	19	22
4	21	21	21
5	18	19	18
6	16	16	16
7	13	13	13
8	11	11	11
9	10	10	10
10	9	9	9
12	7	7	7
14	6	6	6

### Lensed Wall Wash, 1500lm Engine, 71.1 lm/W or 75.5 lm/W at 13.4W (Power over Ethernet)

#### Candela Curve



Frame: **C4RN**  
Engine: **C4L15835WZ10U**  
Trim: **C4RLWCL**

Output lumens: 1012 lms  
Input watts: 14.2 W  
CRI: 80 min  
CCT<sup>1</sup>: 3500K

**Efficacy: 71.1 lm/w**  
Report<sup>2</sup>: T20170310

#### Multiple unit data

Footcandles on wall

	2' from wall		
	3' on ctr.		
Distance from ceiling in feet			
1	27	17	27
2	35	28	35
3	30	28	30
4	22	22	22
5	17	17	17
6	13	13	13
7	11	11	11
8	9	9	9
9	7	7	7
10	6	6	6
12	5	5	5
14	5	5	5

#### Multiple unit data

Footcandles on wall

	3' from wall		
	3' on ctr.		
Distance from ceiling in feet			
1	10	9	10
2	19	18	19
3	22	21	22
4	21	21	21
5	18	18	18
6	15	15	15
7	13	13	13
8	11	11	11
9	9	9	9
10	8	8	8
12	7	6	7
14	6	6	6

#### Multiple unit data

Footcandles on wall

	3' from wall		
	4' on ctr.		
Distance from ceiling in feet			
1	8	6	8
2	16	13	16
3	17	15	17
4	16	15	16
5	14	14	14
6	12	12	12
7	10	10	10
8	8	8	8
9	7	7	7
10	6	6	6
12	5	5	5
14	4	4	4

1. Correlated Color Temperature within specs as defined in ANSI\_NEMA\_ANSI 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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