LIGHTOLIER
by Signify

Downlighting

Calculite LED 4" gen 3

C4SLW Square Lensed Wall Wash

LED

Project:

Location:

Cat.No:

Type:

Qty:

Notes:

Calculite LED 4" generation 3 provides excellent performance coupled with optimized installation flexibility via UniFrame. Industry leading visual comfort and uniform illumination make it an ideal choice for open office, institution, healthcare, and retail applications.

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

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 and engine will be ordered/shipped together; trim will be ordered/shipped separately. Accessories (optional) are not currently BAA-compliant.

Frame

standard example: 4SN | BAC example: 4SN-BAC

Series **4S**	Installation		Voltage / Options			
4S 4" Non-IC Square	N	New construction	—	Universal 120/277/347V	LC	Chicago Plenum[2]
			EM6	Emergency, 6W Self-Test/Self-Diagnostic[1]	BAC	Meets the requirements of the Buy American Act of 1933 (BAA) **
	R	Remodeler	—	Universal 120/277/347V	BAC	Meets the requirements of the Buy American Act of 1933 (BAA) **

Engine

standard example: C4L15835NZ10U | BAC example: C4L15835NZ10U-BAC

Series **C4L**	Lumens	CRI	CCT	Beam[6]	Dimming		Options		Voltage		Options
C4L Calculite LED 4" gen 3	05 500 lm 10 1000 lm 15 1500 lm 20 2000 lm[3] 25 2500 lm[3] 30 3000 lm[3]	8 80 CRI 9 90 CRI	27 2700 K 30 3000 K 35 3500 K 40 4000 K	N Narrow M Medium & Wide	Z10	0-10 V 1%	—— None D2O Dim to Off		U 120/277V 3 347V (Z10 only)		RH Retrofit for tall collar frame[5] BAC Meets requirements of the Buy American Act of 1933 (BAA) **
					L01 L1 RA	Lutron PEQ0 EcoSystem 0.1% (up to 2000lm) Lutron LDE1 EcoSystem (500lm not available) Integral Interact Pro RF sensor[4] (enables wireless connected lighting control)			U 120/277V		
					D	DALI 0.1%	—— None LIN Linear		U 120/277V		
					SOL DMX	EldoLED Solo 0-10 V 0.1% Digital Multiplexing w/RDM 0.1%	—— None LIN Linear SQR Square		U 120/277V		
					E LTE	Forward & Reverse Phase (up to 2500lm) Lutron LTE Hi-Lume Phase Cut 1% (500lm not available)			1 120V		
					P	Power over Ethernet (PoE) only compatible with 1000 (10) to 2500 (25) lumen configurations			E Ethernet 48V DC		

Trim

standard example: C4SLWCCP | BAC example: C4SLWCCP-BAC

Series **C4**	Aperture **S**	Style **LW**	Finish		Flange		Options
C4 Calculite LED 4" gen 3	S Square	LW Lensed Wall Wash	CL CC CD BK	Specular clear Comfort clear Comfort clear diffuse Black (matte)	– P F	White (matte) Polished (matches aperture) Flangeless (requires CA4SFT)	BAC Meets the requisites of the Buy American Act of 1933 (BAA) **
			WH	White (matte)	– F	White (matches finish) Flangeless (requires CA4RFT)	

Accessories   (Not currently BAA-compliant) learn more on page 2

SBA	Interact Ready System Bridge Accessory (refer to Philips System Bridge Accessory spec sheet for options and details)
AMS	ActiLume multi-sensor (optional accessory for PoE configurations)
CA4SFT	Mud-in ring for use in 4" round flangeless trim installations (ordered with a flangeless trim)
CAEM6	Field-installable Bodine BSL6 6W battery pack with self-test/self-diagnostic (for new construction frames, 120-277V)
CAEM6TSCP	Must be ordered with EM6 frame for remote test switch, see page 2 for details
T347-75VA	347:120V step-down transformer for non-IC (N) frame only (see page 2 for details)

1. Emergency (EM6) frame is compatible with reflector mounted test switch when trim is ordered with IEM6 option code (not compatible with 347V or Power over Ethernet configurations). For remote mount switch, order standard trim and CAEM6TSCP mounting plate accessory.
2. Chicago Plenum (LC) frame is not available for Buy American Compliant (BAC) configurations.
3. See marked spacings requirements on page 7.
4. Linear driver profile. See page 6 for details.
5. Retrofits select legacy Lightolier luminaires. See pages 2 and 6 for details.

** Failure to properly select the "BAC" suffix could result in you receiving product that is not BAA compliant product with no recourse for an RMA or refund. This BAC designation hereunder does not address (i) the applicability of, or availability of a waiver under, the Trade Agreements Act, or (ii) the "Buy America" domestic content requirements imposed on states, localities, and other non-federal entities as a condition of receiving funds administered by the Department of Transportation or other federal agencies.

UL LISTED   WET LOCATION   RoHS COMPLIANT   Bluetooth   energy ENERGY STAR   mesoOptics   interact ready.

C4SLW   Calculite LED 4" gen 3

Square Lensed 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 is 2" (51 mm) including PoE frame 4.88" (124 mm) plenum depth for installation.**

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.
· Easy alignment of fixtures and present locking at 0°, 45°, & 90° with 360° rotation via tool-less locking.

Retrofit

· Easily updates legacy Calculite downlights to the latest LED technology. Includes light engine, trim, and driver mounted on cover plate that mounts to junction box of previous Calculite generations. Order with RH option code at end of light engine catalog number (see details on page 5).

Compatibility:

Frames	Engines
With CFL S4118_series	**Use Retrofit configuration** C4R_ Trim + C4L_ Engine
With INC AS400_series	**Use Retrofit configuration** C4R_ Trim + C4L_ Engine
With LED C4L_N series C4X4L_N series P4RD_N_ series	**Use Retrofit configuration** C4R_ Trim + C4L_ Engine C4S_ Trim + C4L_ Engine C4R_ Trim + C4L_ Engine

* Not available for retrofitting luminaires with integral emergency battery.

Emergency

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

· For remote ceiling mounted test switch, order standard trim (ex: C4SDLWCC). 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.

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 (L) Hi-Lume Premier 0.1% EcoSystem
· Lutron LDE1 (L01) EcoSystem 1%
· Lutron LTE (LTE) Hi-Lume 2-wire phase cut 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%

Dimming Options
The following are factory-set options for the SOL, D, and DMX driver options (ex. DMXLIN):

SOL/D/DMX	Logarithmic (–) standard
SOL/D/DMX	Linear (LIN)
SOL/DMX	Square (SQR)

Power over Ethernet

Powered via Lightolier 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.

Optical systems

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

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

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

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.
· 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.

Options and Accessories

Flangeless mud-in ring: Use **CA4SFT** for use with flangless plaster installations.

CAEM6TSCP: Ceiling cover plate for remote mounted EM6 test switch. 1/2" (25mm) hole, 4 3/8" (109mm) x 2 3/4" (69mm) rectangular. Includes two mounting screws.

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. Refer to Calculite-LyteProfile-EasyLyte Emergency Battery Pack specification sheet for more details.

SBA: Interact Ready System Bridge Accessory. Requires IRT9015 IR remote and Interact Pro App for commissioning.

T347-75VA: Field installable 347:120V 75VA step-down transformer, attaches to knock out on frame junction box, for use with non-IC (N) or remodel (R) frames.

ENERGY STAR® exceptions

– 500lm & 90 CRI configurations
– 347V & Emergency voltage/options
– Dali, EldoLED Solo & PoE drivers

Title 24 exceptions

– 1000lm configurations

Labels and Listings

– cULus listed for wet locations
– ENERGY STAR® certified
– RoHS 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.

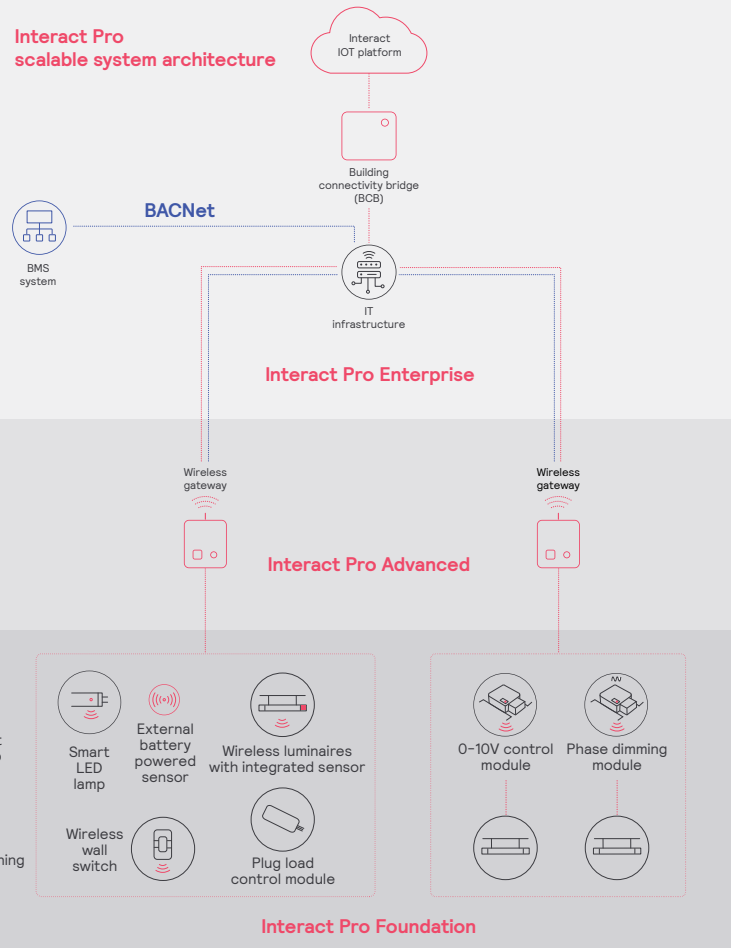# C4SLW Calculite LED 4" gen 3

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

Interact IOT platform

Building connectivity bridge (BCB)

BACNet

BMS system

IT infrastructure

Interact Pro Enterprise

Wireless gateway Wireless gateway

Interact Pro Advanced

Interact Pro App

Commissioning remote

Smart LED lamp

External battery powered sensor

Wireless wall switch

Wireless luminaires with integrated sensor

Plug load control module

0-10V control module

Phase dimming module

Interact Pro Foundation

C4SLW Calculite LED 4" gen 3
Square Lensed Wall Wash

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:
  - 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
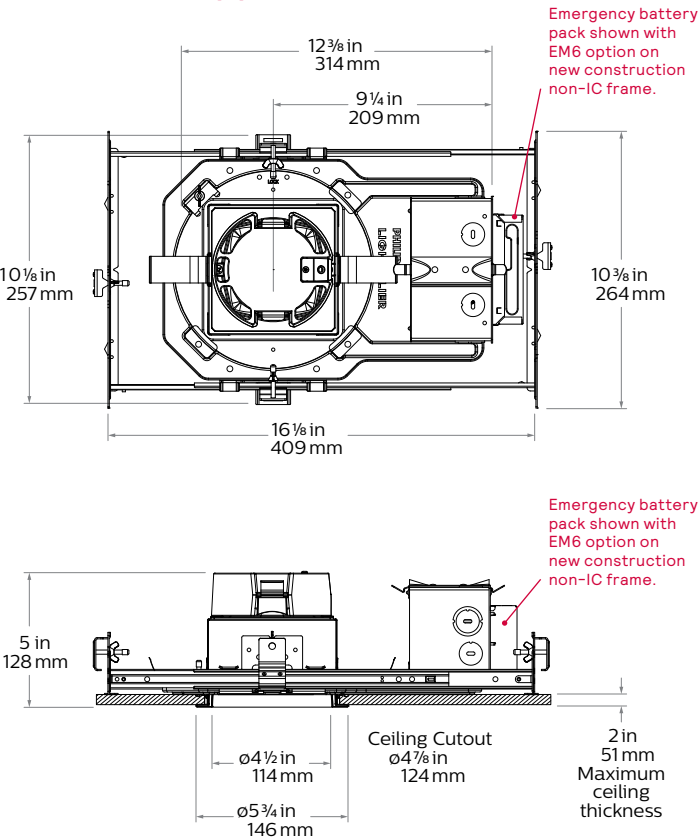**(System Bridge Accessory with –SB option):**

- 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 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 (RA):

- Integral radio (RA) 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.
- Integral RF device affixed to the driver box (see page 6 for details).
- RA option available on light engines only.
- 120–347V universal.

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.

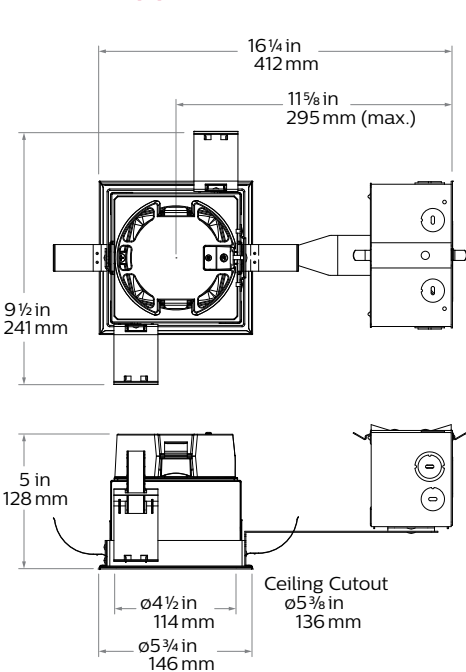# C4SLW   Calculite LED 4" gen 3

Square Lensed Wall Wash

New Construction (N)

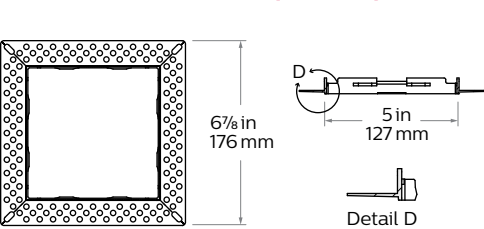12 3/8 in
314 mm

9 1/4 in
209 mm

Emergency battery pack shown with EM6 option on new construction non-IC frame.

10 1/8 in
257 mm

10 3/8 in
264 mm

16 1/8 in
409 mm

Emergency battery pack shown with EM6 option on new construction non-IC frame.

5 in
128 mm

Ceiling Cutout
ø4 7/8 in
124 mm

2 in
51 mm
Maximum ceiling thickness

ø4 1/2 in
114 mm

ø5 3/4 in
146 mm

Chicago Plenum (LC)

13 1/4 in
337 mm

10 in
254 mm

19 5/8 in
498 mm

14 1/2 in
368 mm

7 1/4 in
156 mm

Remodeler (R)

16 1/4 in
412 mm

11 5/8 in
295 mm (max.)

9 1/2 in
241 mm

5 in
128 mm

ø4 1/2 in
114 mm

Ceiling Cutout
ø5 3/8 in
136 mm

ø5 3/4 in
146 mm

Flangeless mud-in ring (CA4SFT) accessory

6 7/8 in
176 mm

D

5 in
127 mm

Detail D

C4SLW   Calculite LED 4" gen 3

Square Lensed Wall Wash

Round tall collar frame (RH type light engine required)

1⅞ in
47 mm

ø5⅛ in
130 mm

Linear driver (RA)

8¾ in
222 mm

12 in
305 mm

20¾ in
527 mm

2 in
51 mm

1¼ in
32 mm
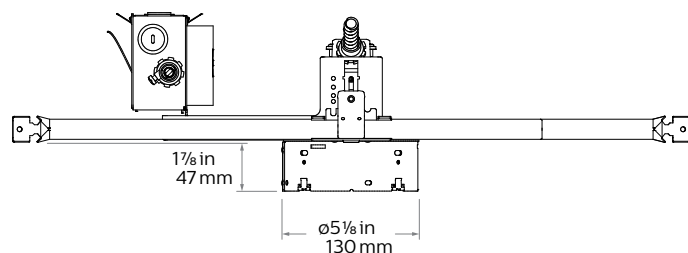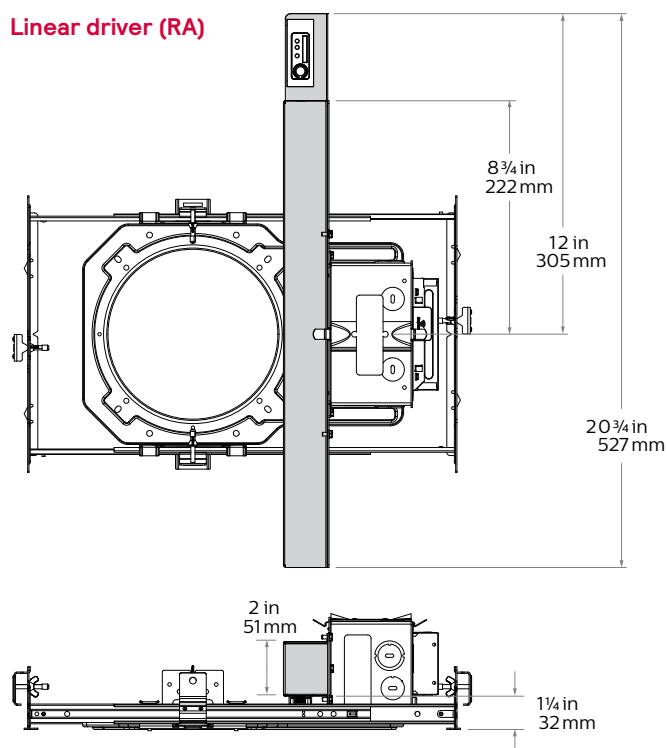
Medium/Wide

Light engine	Input volts	Input freq	Input current	Drive current	Input power	THD power	Power factor
C4L05_MZ10U/3	120V	50/60Hz	0.05	110 mA	6W	<20%	>0.95
	277V		0.03			<20%	>0.90
C4L10_MZ10U/3	120V	50/60Hz	0.08	230 mA	11W	<15%	>0.95
	277V		0.04			<20%	>0.95
C4L15_MZ10U/3	120V	50/60Hz	0.12	350 mA	16W	<10%	>0.95
	277V		0.06			<15%	>0.95
C4L20_MZ10U/3	120V	50/60Hz	0.16	470 mA	21W	<10%	>0.95
	277V		0.08			<15%	>0.95
C4L25_MZ10U/3	120V	50/60Hz	0.21	610 mA	25W	<10%	>0.95
	277V		0.09			<15%	>0.95
C4L30_MZ10U/3	120V	50/60Hz	0.26	770 mA	31W	<10%	>0.95
	277V		0.12			<15%	>0.95

Medium (Power over Ethernet)

Light engine	Input				
	Volts[1]	Voltage[2]	Freq	Current	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

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.

Marked spacing applications

Light engine	2000lm	2500lm	3000lm
C4L_Z10 series	–	–	X
C4L_L01 series	X	X	X
C4L_L1 series	X	X	X
C4L_LD series	X	X	X
C4L_LTE series	X	X	X
C4L_D series	–	–	X
C4L_DMX series	–	–	X
C4L_RA 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)

In accordance with CAN ICES-005-A/ NEB-005-A and FCC Part 15-A.

C4SLW   Calculite LED 4" gen 3

Square Lensed Wall Wash

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.

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

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

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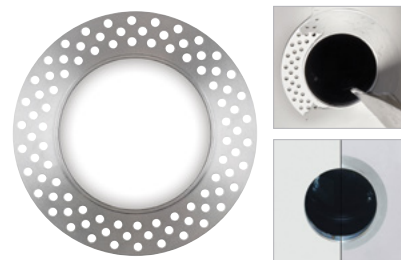
Mud-in ring (FT): Low profile, machined aluminum mud-in ring provides a raised rib to plaster up to and a 3/16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.

C4SLW   Calculite LED 4" gen 3

Square Lensed Wall Wash

Lensed Wall Wash, 1500lm Engine, 83.1 lm/w or 84.5 lm/W at 13.4W (Power over Ethernet)

Candela Curve

250	
500	
750	
1000	
Room side	Wall side
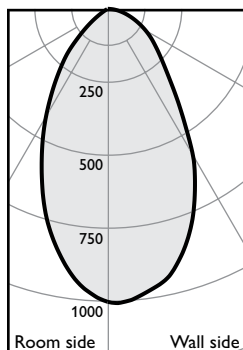
Frame: **C4SN or 4SN**
Engine: **C4L15835MZ10U**
Trim: **C4SLWCL**

CCT[1]: 3500K
Output lumens: 1172 lms
Input watts: 14.1 W (±5%)
CRI: 80 min

Efficacy: 83.1 lm/w
Report[2]: 1093GFR

Multiple unit data
Footcandles on wall

Distance from ceiling in feet	2' from wall	3' on ctr.	
1	27	17	27
2	31	25	31
3	29	26	29
4	25	24	25
5	20	20	20
6	16	16	16
7	13	13	13
8	11	11	11
9	9	9	9
10	8	8	8
12	7	7	7
14	6	6	6

Multiple unit data
Footcandles on wall

Distance from ceiling in feet	3' from wall	3' on ctr.	
1	11	10	11
2	18	17	18
3	19	19	19
4	19	19	19
5	19	19	19
6	17	17	17
7	15	15	15
8	13	13	13
9	11	11	11
10	10	10	10
12	8	8	8
14	7	7	7

Multiple unit data
Footcandles on wall (shown above)

Distance from ceiling in feet	3' from wall	4' on ctr.	
1	10	7	10
2	15	12	15
3	16	14	16
4	15	14	15
5	15	14	15
6	13	13	13
7	11	11	11
8	10	10	10
9	9	9	9
10	8	8	8
12	6	6	6
14	6	6	6

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%

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.