



**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.

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

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Cat.No: \_\_\_\_\_  
 Type: \_\_\_\_\_  
 Qty: \_\_\_\_\_  
 Notes: \_\_\_\_\_

### Frame

example: 4SA

Series	Aperture	Installation
<b>4</b>	<b>S</b>	<b>A</b>
4 4" New Construction	S Square	A AirSeal IC 120/277/347V <sup>1</sup>

### Engine

example: C4L15835NZ10U

Series	Lumens	CRI/CCT	Beam <sup>4</sup>	Dimming	Options	Voltage
<b>C4L</b>						
C4L Calculite LED 4" gen 3	05 500lm	927 90CRI/2700K	N Narrow M Medium & Wide	Z10 0-10V 1%	-- None	U 120/277V
	10 1000lm	930 90CRI/3000K			D20 Dim to Off	3 347V (Z10 only)
	15 1500lm	935 90CRI/3500K		L01 Lutron PEQ0 EcoSystem 0.1%		U 120/277V
	20 2000lm	940 90CRI/4000K		L1 Lutron LDE1 EcoSystem (500lm not available)		
		950 90CRI/5000K <sup>2</sup>		D DALI 0.1%	-- None	U 120/277V
		D2W 90CRI/3000K to 1800K <sup>3</sup> (dim-to-warm)		SOL EldoLED Solo 0-10V 0.1%	LIN Linear	
		DMX Digital Multiplexing w/RDM 0.1%	SQR Square	U 120/277V		
			E Forward & Reverse Phase	1 120V		

### Trim

example: C4SDLNMCCP

Series	Aperture	Style	Beam <sup>4</sup>	Finish	Flange
<b>C4</b>	<b>S</b>				
C4L Calculite LED 4" gen 3	S Square	DL Downlight	NM Narrow & Medium W Wide	CL Specular clear	- White (matte)
		LW Lensed Wall Wash <sup>5</sup>	- blank	CC Comfort clear	P Polished (matches aperture)
				CD Comfort clear diffuse	F Flangeless (requires CA4SFT)
				WH White (matte)	- White (matches finish)
					F Flangeless (requires CA4SFT)

### Accessories

- SBA** Interact Ready System Bridge Accessory with integral occupancy and daylight sensor (compatible with all 0-10V options, see SBA spec sheet)<sup>6</sup>
- CA4SFT** Mud-in ring for use with flangeless installations (ordered with a flangeless trim)

1. Universal 120-347V for 0-10v (Z10) dimming only. Non-Z10 dimming options available for 120/277V only.  
 2. Consult factory for 5000K CCT (50) with narrow (N) beam.  
 3. Dim-to-warm (D2W) available only with Z10 dimming up to 2000lm. Narrow (N) and medium (M) beams only.  
 4. See Beam options table to the left for light engine and trim combination spacing criterion.  
 5. Medium (M) beam is ideal for Lensed Wall Wash (LW) applications.  
 6. Requires IRT9015 IR remote & Interact Pro App for commissioning.

### Beam options

Trim	Narrow engine	Medium engine
Narrow/ Medium	47° (0.7 s.c.)	63° (0.9 s.c.)
Wide	Not recommended	79° (1.2 s.c.)



# C4SA Calculite LED 4" gen 3

## Square AirSeal IC frame

### Frame-in-kits

#### AirSeal:

Galvanized steel housing for dry or plaster ceilings. Pre-installed telescoping mounting bars from 13" to 24".

#### 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.

Close-cut aperture design eliminates possibility of gap between ceiling opening & 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 eliminates 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.

### Dimming

All configurations are FCC Class A unless otherwise specified.

- Advance 0-10V 1% (Z10), logarithmic curve is standard, specify D20 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. Use with Z10 dimming only. Fixture-to-fixture consistency of  $\leq 3$ SDCM at 2700K & 3000K, and  $\leq 5$ SDCM at 1800K.

#### 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

#### 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.

#### 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. 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.
- 347V light engines are 0-10v dimming only and include dedicated 347V driver for use with universal 120/277/347V (U) frames. All other dimming options available only for 120/277V input.

### Options and Accessories

#### Flangeless mud-in ring: Use CA4SFT

For use with flangeless plaster installations.

#### SBA: Interact Ready System Bridge Accessory.

Requires IRT9015 IR remote and Interact Pro App for commissioning. Specify with integral occupancy and daylight sensing capabilities for controls and compatibility with Interact Pro.

### ENERGY STAR® exceptions

- 500lm, 90CRI & Lensed Wall Wash configs
- Dali, ELV & EldoLED Solo drivers

### Title 24 exceptions

- 1000lm in Downlight & Lensed Wall Wash configurations

### Labels and Listings

- cULus listed for wet locations
- ENERGY STAR® certified
- RoHS certified
- CEC Title 24 JA8 certified

### Warranty



5 year limited warranty

Visit [Signify.com/warranties](https://www.signify.com/warranties) for more information on Signify's standard 5-year limited warranty on complete luminaire systems.

# C4SA Calculite LED 4" gen 3

## Square AirSeal IC frame

**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.



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



**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).

### Flanges



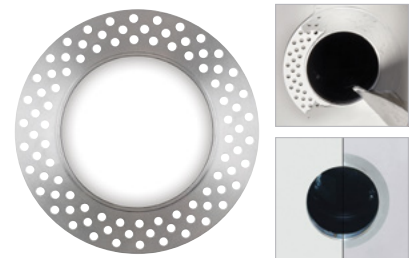
**White (-):** (matte) Provides the smoothest transition to ceilings when off.



**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.

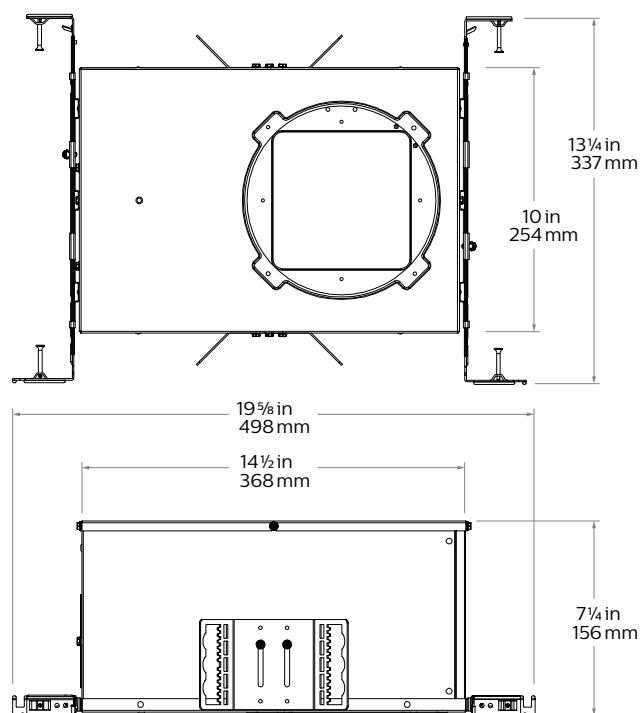


**Mud-in ring (FT):** Low profile, machined aluminum mud-in ring provides a raised rib to plaster up to and a 3/16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.

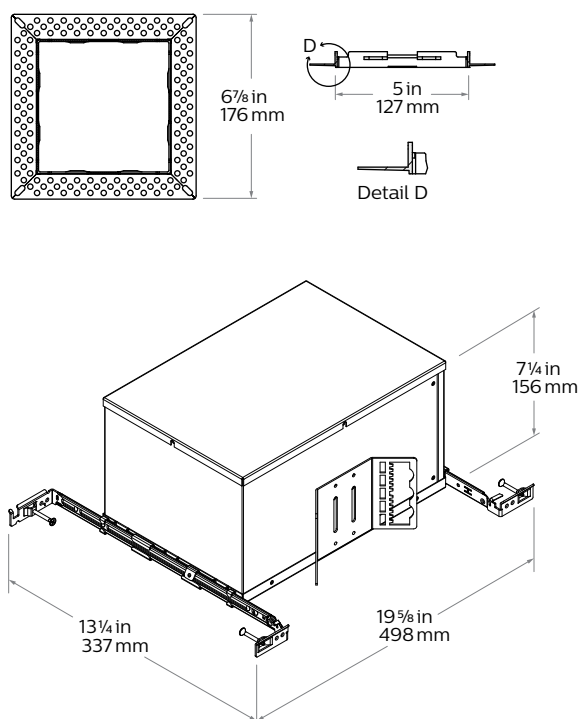
# C4SA Calculite LED 4" gen 3

## Square AirSeal IC frame

### AirSeal (A)



### Flangeless mud-in ring (CA4SFT) accessory



### Electrical - Narrow

Light engine	Input Volts	Input Freq.	Input Current	Drive Current	Input Power	LED Power	THD Factor @ Max Load	Power Factor
500lm	120V	50/60Hz	0.050A	0.15A	6.0W	4.8W	<10%	>0.9
	277V	50/60Hz	0.023A	0.15A	6.3W	4.8W	<30%	>0.9
	347V	50/60Hz	0.020A	0.15A	7.0W	4.8W	N/A	>0.9
1000lm	120V	50/60Hz	0.072A	0.22A	8.7W	7.1W	<10%	>0.9
	277V	50/60Hz	0.032A	0.22A	8.9W	7.1W	<20%	>0.9
	347V	50/60Hz	0.029A	0.22A	10.1W	7.1W	<30%	>0.9
1500lm	120V	50/60Hz	0.108A	0.33A	12.9W	10.8W	<10%	>0.9
	277V	50/60Hz	0.047A	0.33A	13.0W	10.8W	<10%	>0.9
	347V	50/60Hz	0.043A	0.33A	14.8W	10.8W	<25%	>0.9
2000lm	120V	50/60Hz	0.147A	0.45A	17.6W	14.9W	<10%	>0.9
	277V	50/60Hz	0.064A	0.45A	17.7W	14.9W	<10%	>0.9
	347V	50/60Hz	0.056A	0.45A	19.6W	14.9W	<20%	>0.9

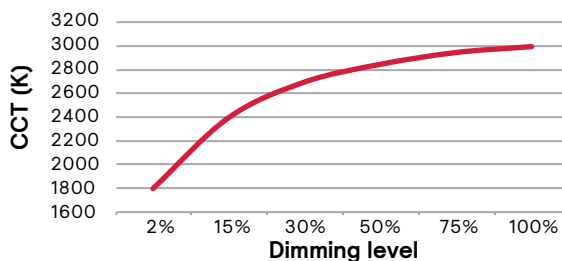
### Electrical - Medium & Wide

Light engine	Input Volts	Input Freq.	Input Current	Drive Current	Input Power	LED Power	THD Factor @ Max Load	Power Factor
500lm	120V	50/60Hz	0.051A	0.15A	6.1W	4.8W	<10%	>0.9
	277V	50/60Hz	0.023A	0.15A	6.4W	4.8W	<30%	>0.9
	347V	50/60Hz	0.020A	0.15A	7.1W	4.8W	N/A	>0.9
1000lm	120V	50/60Hz	0.084A	0.25A	10.1W	8.3W	<10%	>0.9
	277V	50/60Hz	0.037A	0.25A	10.3W	8.3W	<10%	>0.9
	347V	50/60Hz	0.034A	0.25A	11.7W	8.3W	<30%	>0.9
1500lm	120V	50/60Hz	0.117A	0.36A	14.0W	11.8W	<10%	>0.9
	277V	50/60Hz	0.051A	0.36A	14.1W	11.8W	<10%	>0.9
	347V	50/60Hz	0.046A	0.36A	16.0W	11.8W	<25%	>0.9
2000lm	120V	50/60Hz	0.153A	0.47A	18.4W	15.5W	<10%	>0.9
	277V	50/60Hz	0.067A	0.47A	18.5W	15.5W	<10%	>0.9
	347V	50/60Hz	0.059A	0.47A	20.3W	15.5W	<20%	>0.9

### Lifetime (TM-21) data

Lumens	Narrow beam	Medium/Wide beam
500lm	L90 @ 60,000hrs.	L90 @ 60,000hrs.
1000lm		
1500lm		
2000lm	Not Applicable	L80 @ 60,000hrs.

### Dim-to-Warm: CCT vs Dimmed level



# C4SA Calculite LED 4" gen 3

## Square AirSeal IC frame



### AccuRender Technology (CRI 90+)

The right light brings colors to life. Our new AccuRender technology helps ensure colors are rendered more accurately and consistently, while doing so as efficiently as CRI 80 products.



**Standard CRI 80**  
Good color rendering and high efficacy



**Standard CRI 90**  
Better color rendering and low efficacy



**AccuRender**  
Best color rendering, color preference and high efficacy

### Enjoy design flexibility

#### Full range of products and options:

- Available soon in across Lightolier portfolio for application flexibility
- Multiple color temperatures (CCTs) and lumen packages offered

### Promote savings

#### High efficacy, with no penalty:

- Energy efficacy compares well to conventional 80 CRI
- Up to 25% more energy savings vs competitor 90 CRI<sup>1</sup>
- Helps meet Title 24 requirements

### Show your true colors

#### High color rendering:

- True to life colors that help energize your environment and render better flesh tones critical for healthcare hospitality and retail applications.
- $R_a$  up to 94 CRI     $R_r$  up to 92 TM-30  
 $R_g$  up to 67 CRI     $R_{s,ht}$  up to 91 TM-30  
 $G_a$  up to 99 CRI     $R_g$  up to 100 TM-30  
 $C_g$  up to 94 CRI     $R_{cs,ht}$  up to -5% TM-30

### Achieve color balance

#### Best in class color consistency:

- Promote aesthetic harmony in your space with  $\leq 2$  SDCM

### Round Downlight

#### Photometric - Downlights with CRI of 90+ & R9 of 50+

Lumen Package	Beam	Flux (lm)	Efficacy (lm/W)	Beam Angle	CBCP	CRI	R9	IES TM-30-18			UGR
								$R_r$	$R_g$	$R_{cs,ht}$	
500 lm	Narrow (N)	617	102	40°	1409	90+	50+	92	100	-5%	0
	Medium (M)	545	89	57°	769	90+	50+	91	99	-6%	0
	Wide (W)	413	67	74°	378	90+	50+	91	99	-6%	0
1000 lm	Narrow (N)	916	106	40°	2094	90+	50+	92	100	-5%	0
	Medium (M)	921	91	57°	1300	90+	50+	91	99	-6%	0
	Wide (W)	696	69	74°	638	90+	50+	91	99	-6%	0
1500 lm	Narrow (N)	1364	101	40°	3118	90+	50+	92	100	-5%	1
	Medium (M)	1317	94	57°	1859	90+	50+	91	99	-6%	1
	Wide (W)	1002	72	74°	917	90+	50+	91	99	-6%	0
2000 lm	Narrow (N)	1800	102	40°	4115	90+	50+	92	100	-5%	2
	Medium (M)	1690	92	57°	2385	90+	50+	91	99	-6%	2
	Wide (W)	1287	70	74°	1178	90+	50+	91	99	-6%	1

### Round Wall Wash

#### Photometric - Downlights with CRI of 90+ & R9 of 50+

Lumen Package	Beam	Flux (lm)	Efficacy (lm/W)	Beam Angle	CBCP	CRI	R9	IES TM-30-18			UGR
								$R_r$	$R_g$	$R_{cs,ht}$	
500 lm	Lensed (LW)	493	81	—	—	90+	50+	91	99	-6%	16
1000 lm	Lensed (LW)	832	83	—	—	90+	50+	91	99	-6%	18
1500 lm	Lensed (LW)	1197	85	—	—	90+	50+	91	99	-6%	19
2000 lm	Lensed (LW)	1538	84	—	—	90+	50+	91	99	-6%	20

# C4SA Calculite LED 4" gen 3

Square AirSeal IC frame

## interact

	Gateway Connected		
	Standalone	Option 1	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			✓

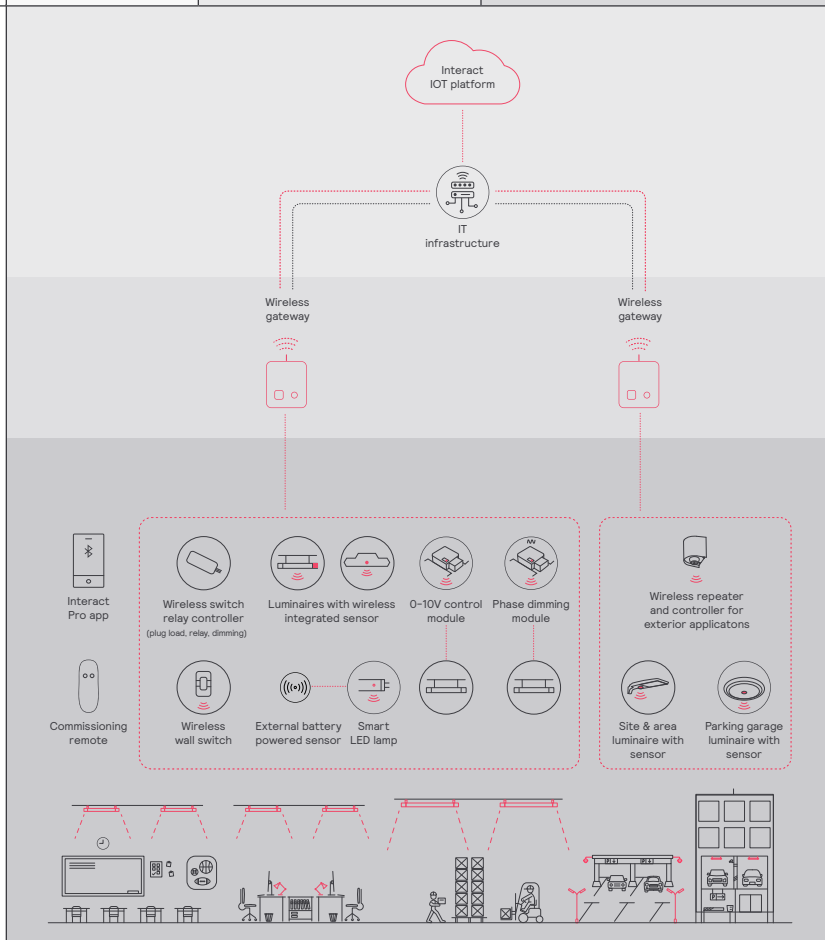
### Currently supported maximum system size

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



# C4SA Calculite LED 4" gen 3

## Square AirSeal IC frame

### 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 IP65WH
- LCN3120: battery powered IP65 presence & daylight sensor, OCC-DL sensor IA CM IP65 WH
- For more information on Interact visit: [interact-lighting.com/interactproscalablesystem](http://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](http://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 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.
- 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](http://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](http://interact-lighting.com/office) or [www.usa.lighting.philips.com/systems/system-areas/offices](http://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	-	-

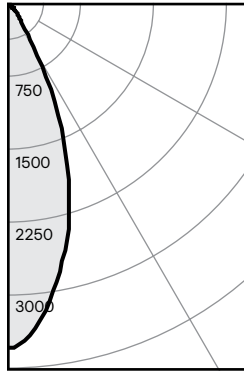


# C4SA Calculite LED 4" gen 3

## Square AirSeal IC frame

### Narrow beam, 1500lm Engine, 101lm/W at 14W

#### Candela Curve



#### 4SA / C4L15935N / C4SDLNMCL

Output lumens: 1365 lms  
 Input watts: 13.5 W  
 CRI: 90 min  
 CCT<sup>1</sup>: 3500K  
 Spacing Crit.: 0.66  
 Beam Angle: 40°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	1170	85.7%
0-40	1309	95.9%
0-60	1363	99.9%
0-90	1365	100.0%

Angle	Mean CP	Lumens
0	2819	
5	2660	
10	2310	242
15	1911	
20	1421	523
25	901	
30	427	405
35	204	
40	118	139
45	63	
50	18	49
55	3	
60	2	5
65	1	
70	1	1
75	0	
80	0	1
85	0	
90	0	0

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
8'	44	4.8'
9'	35	5.4'
10'	28	6.0'
12'	20	6.6'
14'	14	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'	64.0	0.60
6'	41.0	0.39
7'	30.0	0.28
8'	25.0	0.23
9'	38.0	0.19

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

Efficacy: 101.1lm/W  
 Report<sup>2</sup>: STMR-2431

#### Adjustment factors

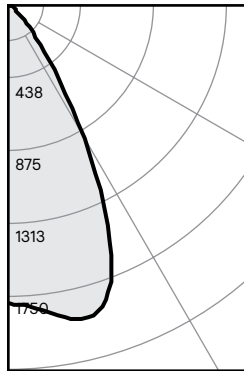
Finish	CCT	Lumens
CL = 100%	90CRI, 4000K = 102%	2000lm = 133%
CC = 95%	90CRI, 3500K = 100%	1500lm = 100%
CD = 87%	90CRI, 3000K = 96%	1000lm = 67%
CZ = 63%	90CRI, 2700K = 92%	500lm = 33%
WH = 87%		
BK = 57%		

#### Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
	70	50	30	10	50	10	50	10	50	10	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	114	112	109	108	110	106	106	103	102	100	95
	2	109	105	102	99	103	97	100	95	97	93	90
	3	105	99	95	91	98	91	95	89	93	88	85
	4	100	94	89	85	93	85	91	84	89	83	81
	5	96	89	84	80	88	80	86	79	85	79	77
	6	92	85	80	76	84	76	83	75	81	75	73
	7	89	81	75	72	80	72	79	71	78	71	69
	8	85	77	72	68	76	68	75	68	74	68	66
	9	82	74	69	65	73	65	72	65	71	65	63
	10	79	70	65	62	70	62	69	62	69	62	60

### Medium beam, 1500lm Engine, 94lm/W at 14W

#### Candela Curve



#### 4SA / C4L15935M / C4SDLNMCL

Output lumens: 1317 lms  
 Input watts: 14.0 W  
 CRI: 90 min  
 CCT<sup>1</sup>: 3500K  
 Spacing Crit.: 0.98  
 Beam Angle: 57°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	1045	79.3%
0-40	1261	95.7%
0-60	1316	99.9%
0-90	1317	100.0%

Angle	Mean CP	Lumens
0	1426	
5	1453	
10	1511	141
15	1534	
20	1404	426
25	1071	
30	656	478
35	328	
40	150	216
45	60	
50	16	51
55	3	
60	1	4
65	1	
70	0	1
75	0	
80	0	0
85	0	
90	0	0

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	57	4.9'
6'	40	5.9'
7'	29	6.9'
8'	22	7.8'
9'	18	8.8'

\* 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'	61.0	0.62
6'	40.0	0.41
7'	28.0	0.29
8'	24.0	0.24
9'	19.0	0.19

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

Efficacy: 94.1lm/W  
 Report<sup>2</sup>: STMR-1857

#### Adjustment factors

Finish	CCT	Lumens
CL = 100%	90CRI, 4000K = 102%	2000lm = 133%
CC = 95%	90CRI, 3500K = 100%	1500lm = 100%
CD = 87%	90CRI, 3000K = 96%	1000lm = 67%
CZ = 63%	90CRI, 2700K = 92%	500lm = 33%
WH = 87%		
BK = 57%		

#### Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
	70	50	30	10	50	10	50	10	50	10	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	114	111	109	107	109	105	105	102	101	99	94
	2	109	104	100	97	102	96	99	94	96	92	88
	3	103	97	93	89	96	88	93	87	91	85	83
	4	99	91	86	82	90	82	88	81	86	80	77
	5	94	86	80	76	85	76	83	75	82	75	73
	6	90	81	75	71	80	71	79	71	77	70	68
	7	85	77	71	67	76	67	75	66	73	66	64
	8	81	72	67	63	72	63	71	62	70	62	61
	9	78	69	63	59	68	59	67	59	66	59	57
	10	74	65	60	56	65	56	64	56	63	55	54

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.



# C4SA Calculite LED 4" gen 3

## Square AirSeal IC frame

### Wide beam, 1500lm Engine, 72lm/W at 14W

#### Candela Curve



#### 4SA / C4L15935M-C4SDLWCL

Output lumens: 1002 lms  
 Input watts: 14.0 W  
 CRI: 90 min  
 CCT<sup>1</sup>: 3500K  
 Spacing Crit.: 1.44  
 Beam Angle: 74°

#### Zonal summary

Zone	Lumens	%Luminaire
0-30	548	54.7%
0-40	870	86.8%
0-60	1000	99.8%
0-90	1002	100.0%

Angle	Mean CP	Lumens
0	544	54
5	555	
10	586	
15	633	
20	675	181
25	687	
30	645	313
35	531	
40	347	322
45	148	
50	32	122
55	5	
60	2	8
65	1	
70	1	1
75	0	0
80	0	0
85	0	0
90	0	0

#### Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	22	7.2'
6'	15	8.6'
7'	11	10.1'
8'	9	11.5'
9'	7	13.0'

\* 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'	30.0	0.41
7'	21.0	0.29
8'	18.0	0.24
9'	14.0	0.19

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

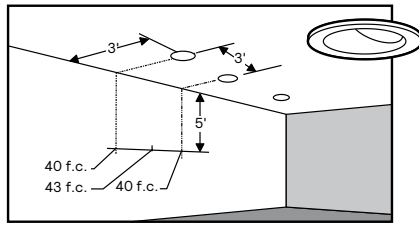
Efficacy: 71.6 lm/W  
 Report#: STMR-1821

#### Adjustment factors

Finish	CCT	Lumens
CL = 100%	90CRI, 4000K = 102%	2000lm = 133%
CC = 95%	90CRI, 3500K = 100%	1500lm = 100%
CD = 87%	90CRI, 3000K = 96%	1000lm = 67%
CZ = 63%	90CRI, 2700K = 92%	500lm = 33%
WH = 87%		
BK = 57%		

#### Coefficients of utilization

Ceiling	80%		70%		50%		30%		0%		
	70	50	30	10	50	10	50	10	50	10	
Wall	70	50	30	10	50	10	50	10	50	10	
RCR	Zonal cavity method - Effective floor reflectance = 20%										
Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106
1	113	110	107	105	108	103	104	100	100	97	92
2	107	101	97	93	99	92	96	90	93	88	84
3	100	93	88	83	92	83	89	81	87	80	77
4	94	86	80	75	85	75	83	74	81	73	70
5	89	79	73	68	78	68	77	67	75	67	64
6	83	74	67	62	73	62	71	61	70	61	59
7	79	68	61	57	67	57	66	56	65	56	54
8	74	63	57	52	63	52	61	52	60	51	50
9	70	59	52	48	58	48	57	48	56	47	46
10	66	55	48	44	54	44	54	44	53	44	42



#### Lighting Data - Example

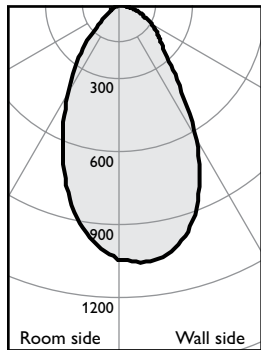
C4RWWCL / C4L15935W  
 illumination on the wall  
 5' down from the ceiling is 40 f.c.  
 beneath and 43 f.c. between fixtures.

#### Adjustment factors

Finish	CCT	Lumens
CL = 100%	90CRI, 4000K = 102%	2000lm = 133%
CC = 95%	90CRI, 3500K = 100%	1500lm = 100%
CD = 87%	90CRI, 3000K = 96%	1000lm = 67%
CZ = 63%	90CRI, 2700K = 92%	500lm = 33%
WH = 87%		
BK = 57%		

### Lensed Wall Wash, 1500lm Engine, 86lm/W at 14W

#### Candela Curve



#### 4SA / C4L15935M / C4SLWCL

Output lumens: 1198 lms  
 Input watts: 14.0 W  
 CRI: 90 min  
 CCT<sup>1</sup>: 3500K

Efficacy: 85.6 lm/w  
 Report#: STMR-1858

#### Multiple unit data

Footcandles on wall	2' from wall		
	2' on ctr.		
1	43	46	43
2	63	67	63
3	60	65	60
4	52	56	52
5	40	43	40
6	30	32	30
7	22	23	22
8	17	17	17
9	13	13	13
10	10	11	10
12	8	9	8
14	7	7	7

#### Multiple unit data

Footcandles on wall	3' from wall		
	3' on ctr.		
1	9	9	9
2	16	16	16
3	18	18	18
4	18	17	18
5	17	17	17
6	15	15	15
7	13	13	13
8	11	11	11
9	9	10	9
10	8	8	8
12	7	7	7
14	6	6	6

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.