



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: 4SA

Series	Aperture	Installation
4	S	A
4 4" Non-IC	S Square	A AirSeal IC 120 V/277V

Engine

example: C4L15835NZ10U

Series	Lumens	CRI	CCT	Beam ¹	Dimming	Voltage
C4L						
C4L Calculite LED 4"	05 500 lm (Z10 only)	8 80 CRI	27 2700 K	N Narrow (43°)	Z10 0-10 V 1%	U Universal 120 V/277 V
	10 1000 lm	9 90 CRI	30 3000 K	M Medium (56°) ²	SOL EldoLED Solo 0-10 V 0.1%	
	15 1500 lm		35 3500 K		D Dali 0.1%	
			40 4000 K		L Lutron LDE1 EcoSystem (fade-to-black)	
					DMX Digital Multiplexing	
					E ELV (120V dimming only)	1 Universal 120 V/277 V
	20 2000 lm	8 80 CRI	27 2700 K	M Narrow (43°) & Medium (56°) ²	Z10 0-10 V 1%	U Universal 120 V/277 V
		9 90 CRI	30 3000 K		SOL EldoLED Solo 0.1%	
			35 3500 K		DMX Digital Multiplexing	
			40 4000 K		E ELV (120V dimming only)	

Trim

example: C4SDLNMCCP

Series	Aperture	Style	Beam ¹	Finish	Flange
C4	S				
C4 Calculite LED 4"	S Square	DL Downlight	NM Narrow & Medium W Wide	CL Specular clear	- White (matte)
		LW Lensed Wall Wash ²	- blank	CC Comfort clear	P Polished (matches aperture)
				CD Comfort clear diffuse	F Flangeless (requires CA4RFT)
				WH White (matte)	- White (matte)
					F Flangeless

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.)

Accessories

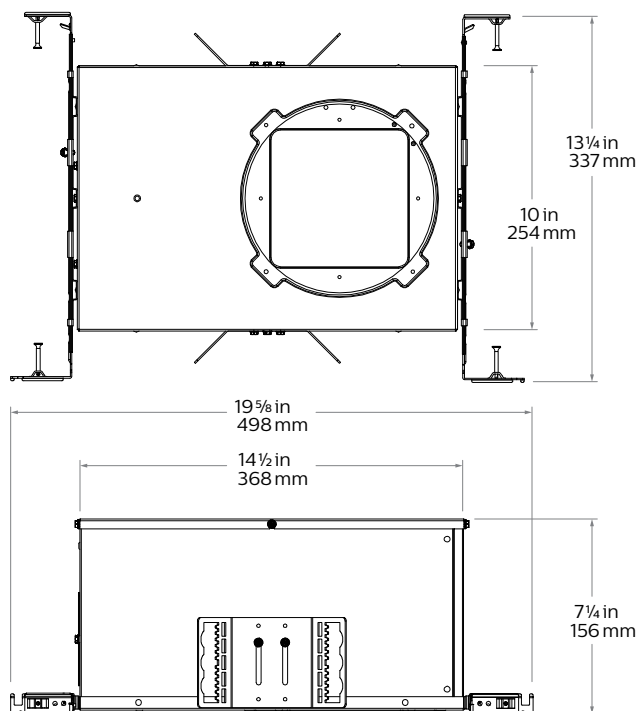
CA4SFT	Mud-in ring for use with flangeless installations (ordered with a flangeless trim)
SWZDT	SpaceWise wireless controller with dwell time functionality, compatible with all 0-10V configurations (for details see "SWZDT" spec sheet)

- See Beam Options table to the left for light engine and trim combination spacing criterion.
- Medium (M) beam is ideal for Lensed Wall Wash (LW) applications.

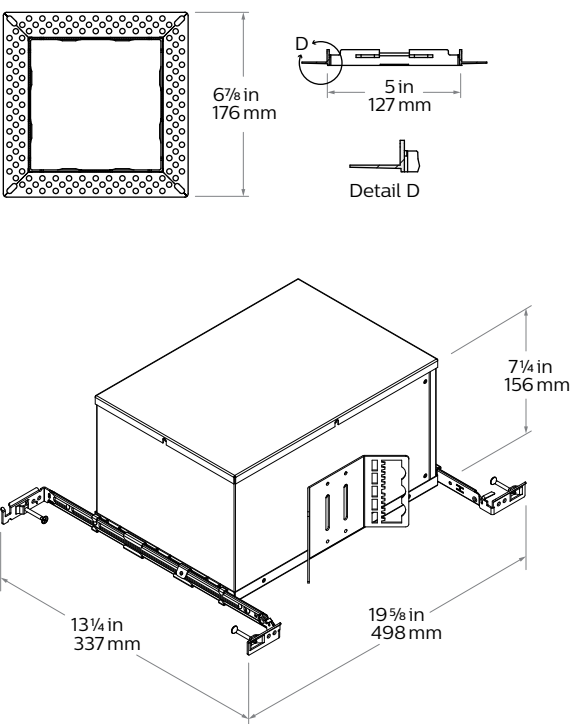
C4SA Calculite LED 4" gen 3

Square AirSeal IC frame

AirSeal (A)



Flangeless mud-in ring (CA4SFT) accessory



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

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

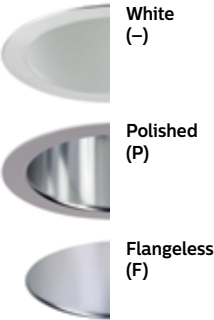
Lifetime (TM-21) data

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

Reflector



Flange



C4SA Calculite LED 4" gen 3

Square AirSeal IC frame

Frame-in-kits

AirSeal

Black painted 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.

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 and DMX dimming

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 CA4SFT for use with flangeless plaster installations.

ENERGY STAR® exceptions

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

Title 24 exceptions

- 1000lm in Downlight, Wall Wash & Lensed Wall Wash configurations

Labels and Listings

- cULus listed for wet locations
- ENERGY STAR® certified
- RoHS certified
- CEC Title 24 JA8 certified
- IBEW Union made (light engines & reflectors)

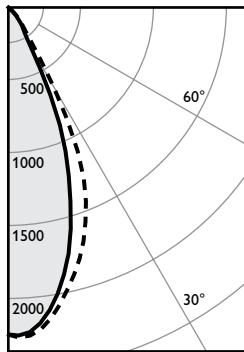
Warranty



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

Narrow beam, 1500lm Engine, 93.0 lm/w

Candela Curve



Frame: **C4SA or 4SA**
Engine: **C4L15835N210U**
Trim: **C4SDLNMCCL**

CCT¹: 3500K
Output lumens: 1369 lms
Input watts: 14.7 W (±5%)
CRI: 80 min
Spacing Crit.: 0.7
Beam Angle: 45°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1142	83.4%
0-40	1311	95.7%
0-60	1369	100.0%
0-90	1369	100.0%

Angle	0°	45°	Lms
0	2242	2242	
5	2206	2238	207
10	1995	2072	
15	1661	1845	488
20	1234	1568	
25	783	1196	447
30	334	637	
35	197	264	168
40	132	156	
45	73	87	58
50	0	0	
55	0	0	0
60	0	0	
65	0	0	0
70	0	0	
75	0	0	0
80	0	0	
85	0	0	0
90	0	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	90	3.5'
6'	62	4.2'
7'	46	4.9'
8'	35	5.6'
9'	28	6.3'

* 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'	63.4	0.65
6'	41.6	0.43
7'	29.7	0.31
8'	24.8	0.25
9'	19.8	0.20

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

Efficacy: 93.0 lm/w
Report²: T20161391

Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 107%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 99%	2000lm = 133%
CZ = 63%	80CRI 2700K = 93%	1500lm = 100%
WH = 87%	90CRI 3000K = 87%	1000lm = 67%
BK = 57%	90CRI 2700K = 81%	500lm = 33%

Coefficients of utilization

Ceiling	80%				70%				50%				30%				0%
Wall	70	50	30	10	50	10	50	10	50	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	106	106	100	95	
1	114	112	109	107	109	106	105	102	102	99	99	95	102	102	99	95	
2	109	105	101	98	103	97	100	95	97	93	89	89	97	93	89	84	
3	104	99	94	91	97	90	95	88	92	87	84	84	92	87	84	80	
4	100	93	88	84	92	84	90	83	88	82	80	80	88	82	80	75	
5	95	88	83	79	87	79	85	78	84	77	75	75	85	78	75	71	
6	91	83	78	74	83	74	81	73	80	73	71	71	81	73	71	67	
7	87	79	74	70	78	70	77	69	76	69	67	67	77	69	67	64	
8	84	75	70	66	75	66	74	66	73	66	64	64	74	66	64	61	
9	80	72	66	63	71	63	70	62	69	62	61	61	70	62	61	58	
10	77	68	63	60	68	60	67	59	66	59	58	58	67	59	58		

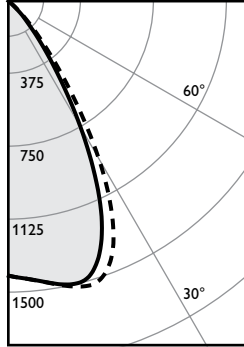
1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSI C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State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

C4SA Calculite LED 4" gen 3

Square AirSeal IC frame

Medium beam, 1500lm Engine, 103.8 lm/w

Candela Curve



Frame: **C4SA or 4SA**
Engine: **C4L15835MZ10U**
Trim: **C4SDLNMCL**

CCT¹: 3500K
Output lumens: 1475 lms
Input watts: 14.2 W (±5%)
CRI: 80 min
Spacing Crit.: 0.9
Beam Angle: 58°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1092	74.0%
0-40	1393	94.5%
0-60	1475	100.0%
0-90	1475	100.0%

Angle	0°	45°	Lms
0	1414	1414	
5	1442	1442	139
10	1481	1484	
15	1494	1522	422
20	1387	1485	
25	1119	1287	531
30	755	943	
35	430	561	301
40	217	285	
45	100	129	82
50	0	0	
55	0	0	0
60	0	0	
65	0	0	0
70	0	0	
75	0	0	0
80	0	0	
85	0	0	0
90	0	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	57	4.5'
6'	39	5.4'
7'	29	6.3'
8'	22	7.2'
9'	17	8.1'

* 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'	67.5	0.63
6'	44.3	0.41
7'	31.6	0.30
8'	26.4	0.25
9'	21.1	0.20

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

Efficacy: 103.8 lm/w

Report²: T20161398

Adjustment factors

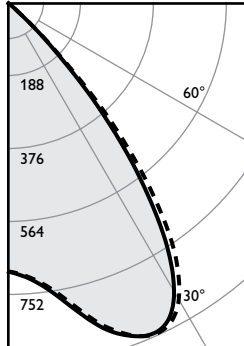
Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 97%	2000lm = 133%
CZ = 63%	80CRI 2700K = 87%	1500lm = 100%
WH = 87%	90CRI 3000K = 77%	1000lm = 67%
BK = 57%	90CRI 2700K = 73%	500lm = 33%

Coefficients of utilization

Ceiling	80%				70%				50%				30%				0%
Wall	70	50	30	10	50	10	50	10	50	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	106	106	100	94	94
	1	114	111	109	106	109	105	105	101	101	98	91	98	98	91	87	87
	2	108	103	99	96	102	95	98	93	96	90	84	96	90	84	82	82
	3	103	97	92	88	95	87	93	86	90	84	76	93	86	80	76	76
	4	98	90	85	81	89	80	87	79	85	78	71	87	79	73	71	71
	5	93	85	79	75	84	74	82	74	80	73	66	82	74	68	66	66
	6	88	79	74	69	79	69	77	69	76	68	62	77	69	63	62	62
	7	84	75	69	65	74	64	73	64	72	64	58	73	64	58	58	58
	8	80	70	64	60	70	60	69	60	68	60	55	69	60	55	55	55
	9	76	66	61	57	66	57	65	56	64	56	51	65	56	51	51	51
	10	72	63	57	53	62	53	62	53	61	53	48	62	53	48	48	48

Wide beam, 1500lm Engine, 90.8 lm/w

Candela Curve



Frame: **C4SA or 4SA**
Engine: **C4L15835MZ10U**
Trim: **C4SDLWCL**

CCT¹: 3500K
Output lumens: 1288 lms
Input watts: 14.2 W (±5%)
CRI: 80 min
Spacing Crit.: 1.2
Beam Angle: 69°

Zonal summary

Zone	Lumens	%Luminaire
0-30	725	56.3%
0-40	1141	88.6%
0-60	1288	100.0%
0-90	1288	100.0%

Angle	0°	45°	Lms
0	688	688	
5	713	709	69
10	766	757	
15	846	837	237
20	907	904	
25	923	928	419
30	854	878	
35	666	720	416
40	410	466	
45	163	181	146
50	28	27	
55	0	0	1
60	0	0	
65	0	0	0
70	0	0	
75	0	0	0
80	0	0	
85	0	0	0
90	0	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	28	6.0'
6'	19	7.2'
7'	14	8.4'
8'	11	9.6'
9'	8	10.8'

* 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'	57.9	0.63
6'	38.0	0.41
7'	27.1	0.29
8'	22.6	0.25
9'	18.1	0.20

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

Efficacy: 90.8 lm/w

Report²: T20161399

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%

Coefficients of utilization

Ceiling	80%				70%				50%				30%				0%
Wall	70	50	30	10	50	10	50	10	50	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	106	106	100	94	94
	1	113	110	107	105	108	103	104	100	100	97	91	98	98	91	87	87
	2	107	102	97	93	100	92	97	90	94	88	85	96	90	84	82	82
	3	101	94	88	84	92	83	90	82	87	81	78	93	86	80	76	76
	4	95	87	80	76	85	75	83	74	81	74	71	87	79	73	71	71
	5	89	80	74	69	79	69	77	68	75	67	65	82	74	68	66	66
	6	84	74	67	63	73	63	72	62	70	62	60	77	69	63	62	62
	7	79	69	62	57	68	57	67	57	65	57	55	73	64	58	58	58
	8	74	64	57	53	63	53	62	52	61	52	50	69	60	55	55	55
	9	70	59	53	49	59	48	58	48	57	48	46	65	56	51	51	51
	10	66	56	49	45	55	45	54	45	53	44	43	62	53	48	48	48

1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
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C4SA Calculite LED 4" gen 3

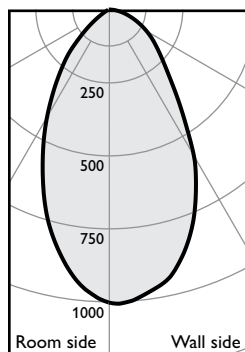
Square AirSeal IC frame

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%

Lensed Wall Wash, 1500lm Engine, 83.1 lm/w

Candela Curve



Frame: **C4SA or 4SA**
Engine: **C4L15835MZ10U**
Trim: **C4SLWCL**

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

Efficacy: 83.1 lm/w
Report#: 1093GFR

Multiple unit data

Footcandles on wall

	2' from wall			
	3' on ctr.			
Distance from ceiling in feet	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

	3' from wall			
	3' on ctr.			
Distance from ceiling in feet	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)

	3' from wall			
	4' on ctr.			
Distance from ceiling in feet	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	

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