LIGHTOLIER

by (signify

Downlighting

Calculite LED 4" gen 3

C4RTW Round Tunable White

Calculite LED 4" generation 3 features industry leading visual comfort, excellent uniform illumination over time, and patented installation flexibility. Industry leading visual comfort and uniform illumination make it an ideal choice for office, institution, healthcare, public, and retail applications. Tunable white technology provides dynamic flexibility to fully capture application ambiance and enhance behaviour by supporting biorhythms.

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

Frame		example: 4RN
Series	Installation	Voltage/Options
4R		
4R 4" Round	N New Construction R Remodeler	 Universal 120V/277V LC Chicago Plenum
		EM6 Emergency, 6W Self-Test/Self-Diagnostic ¹
	A Airseal IC	- Universal 120V/277V

Engine

Series	Lumens	CRI/CCT	Beam	Dimm	ing	Voltage
C4L		96T				
C4L Calculite LED 4"	05 500lm 10 1000lm 15 1500lm 20 2000lm	96T 90CRI / 6500-2700K	N Narrow (38°) M Medium (54°)	Z10 D DMX LTW	0-10V 1% DALI DT8 0.1% Digital Multiplexing w/ RDM 0.1% Lutron T-Series 1% ⁶	U Universal 120 V/277 V For 347V order T347-75VA accessory
				RA	Integral Interact Pro RF sensor ⁴ (enables wireless connected lighting control)	

Trim

Series C4	Aperture R	Style	Finish	Flange	Options
C4 Calculite LED 4"	R Round	DL Downlight WW Open Wall Wash ² LW Lensed Wall Wash ^{2.5} CW Corner Wall Wash ^{2.3} DW Double Wall Wash ^{2.3}	CL Specular clear CC Comfort clear CD Comfort clear diffuse CZ Champagne bronze BK Black (anodized)	 White (matte) P Polished F Flangeless (requires CA4RFT) 	IEM6 Trim mounted EM test switch ⁵
			WH White (matte) WHAMF White (gloss antimicrobial)	 White (matte) F Flangeless (requires CA4RFT) 	
		SL Shower Light	WH White (matte) WHAMF White (gloss antimicrobial)	- White (matte)	

Accessories

CA4RFT	Mud-in ring for use with flangeless installations (ordered with a flangeless trim)
CAEM6	Field installable EM pack
C4RVPWH	IP65 rated vandal proof matte white accessory that mounts onto a flangeless trim (not available for use with Lensed Wall Wash)
SBA	Interact Ready System Bridge accessory w/integral occupancy & daylight sensor (compatible with all 0-10v options, see SBA spec sheet)
	- Requires IRT9015 IR remote & Interact Pro App for commissioning.
T347-75VA	347:120V step-down transformer for non-IC (N) frame only (see page 2 for details)

 Emergency (EM6) frame is compatible with reflector mounted test switch when trim (LW not avail.) is ordered with IEM6 option code (not compatible with 347V). For remote mount switch, order standard trim and CAEM6TSCP mounting plate accessory. EM mode on 6500K circuit only.

Medium (M) beam recommended for all Wall Wash (LW, WW, CW, DW) applications.

Medium (M) beam recommended for all Wall Wash (LW, WW, CW, DW) applications.
 Corner (CW) and Double (DW) wall wash are not available with flangeless (F) option.

4. Linear driver profile. See page 5 for details

5. LW style requires remote mounted EM6 test switch. Order with CAEM6TSCP test switch mounting plate.

6. 500lm not available with LTW dimming option.





Project:			
Location:			
Cat.No:			
Туре:			
Qty:			
Notes:			

example: C4L1596TMDU

example: C4RDLCCP

Round Tunable White

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".

Patented install Mounting frame

- Pre-installed mounting bars for fast and toolless installs into T-grid & hat channel ceilings.
- 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.

Dimming (2-channel)

All configurations are FCC Class A unless otherwise specified. Dimming curves are logarithmic as standard, contact factory for options.

- 0-10V 1% (Z10)
- DALI DT8 1% (D)
- Digital Multiplexing w/ RDM 1% (DMX)
- Lutron T-Series 1% (LTW)

Rated life

55,000 hrs at 85% lumen maintenance based on IES LM-80-08 and TM-21-11.

See page 5 for complete details.

Optical systems

Comfort throughout the space:

- True 50° physical cutoff and 45° reflected cutoff.
- MesoOptics PET optical diffusion film:Provides a smooth beam shape and mitigates color over angle with optimized luminaire efficiency.
- Tunable white (6T): 2700K to 6500K CCT. Use with Z10 dimming only. Fixture-to-fixture consistency of ≤3SDCM at 2700K, 5000K, and 6500K CCT.

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.

Emergency

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

- For trim with integral emergency test switch, order trim with IEM6 option (ex: C4RDLCCIEM6). Not avail. for LW style.
- For remote ceiling mounted test switch, order standard trim (ex: C4RDLCC). Optional accessory ceiling mounting plate available (CAEM6TSCP) for remote mounted test switch (required for LW style).
- EM mode is on 6500K circuit.
- To estimate lumen output in emergency mode, multiply emergency pack wattage by luminaire configuration efficacy, then by 1.1.

Options and Accessories

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

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

C4RVPWH: includes machined aluminum ring painted white, gasketed for IP65 protection, and impact resistant polycarbonate lens (IK10). Locks in place with discrete setscrew (key included). Available also with antimicrobial finish (C4RVPWHAMF).

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.

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. C4RDLCCIEM6). 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 stepdown transformer, attaches to knock out on frame junction box, for use with non-IC (N) or remodel (R) frames.

Labels and Listings

- cULus listed for wet locations (downlights)
- RoHS certified
 - CCEA (frames with *LC suffix)
 - IP65 rated with vandal proof accessory

Warranty



5 year warranty Indoor Professional Luminaires complete system warranty available at: www.signify.com/warranties

Round Tunable White

Polished 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 (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.



Vandal proof (VP): Provides an elegant solution for vandal resistant needs. One piece machined aluminum ring with impact resistant clear lens. Flangeless (F) flange must be ordered. Provides the luminaire with an IK10 impact and IP65 rating.



Champagne bronze (CZ): Semi-specular finish that softens light at the source of the reflector while providing a warmer reflector appearance (slightly warmer).



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



Black (BK): (anodized) Specular finish that provides the lowest aperture brightness possible and significantly reduces source identification in a ceiling.



Shower light (SL): Wet location rated shower light with clear acrylic lens applicable in any installation requiring dead front trims, interior or exterior noncorrosive applications, or where a diffused lens at the ceiling is required (non-conductive).



Flanges

Polished (P): (matches aperture) Produces a continuous look throughout the reflector (aperture matching). Not available for square trims with CL, CD, CC, and CZ finishes.

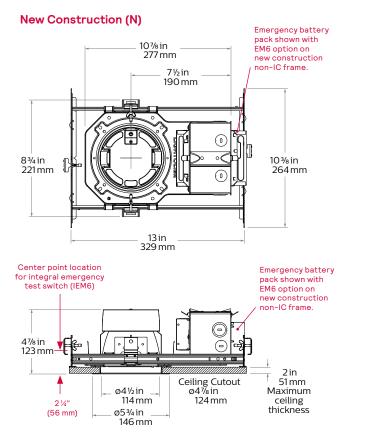


Flangeless (F): (flush-mount)Creates a flush, virtually seamless transition from aperture to ceiling.

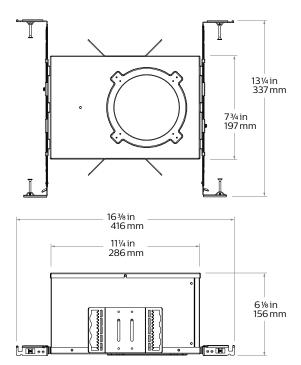


Mud-in ring (FMR): Low profile, non-metallic mudin ring provides a raised rib to plaster up to and a 3/16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.

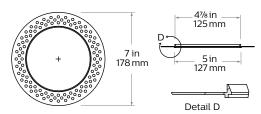
Round Tunable White



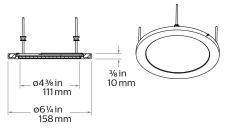
AirSeal (A) & Chicago Plenum (LC)



Flangeless mud-in ring (CA4RFT) accessory

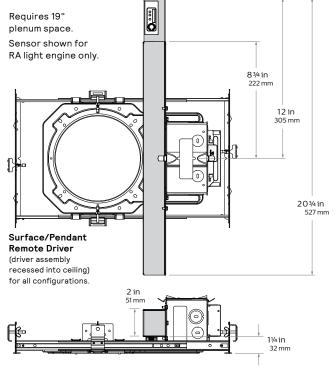


Vandal Proof (VP) accessory



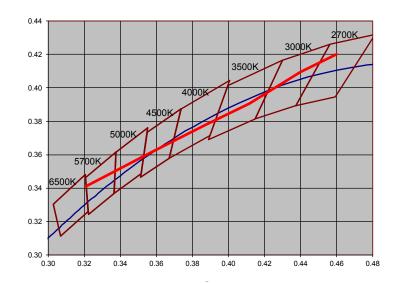
Round Tunable White

Linear driver (RA)



Electrical

			90CRI,	2700K	90CRI,	6500K
Light engine	Input Volts	Input Freq.	Input Current	Input Power	Input Current	Input Power
	120V	50/60Hz	0.060A	7.1W	0.828A	5.9W
C4L05	277V	50/60Hz	0.027A	7.5W	0.840A	6.3W
0 41 40	120V	50/60Hz	0.111A	13.3W	0.835A	11.1W
C4L10	277V	50/60Hz	0.049A	13.5W	0.845A	11.4W
04145	120V	50/60Hz	0.177A	21.2W	0.823A	17.4W
C4L15	277V	50/60Hz	0.077A	21.3W	0.824A	17.5W
	120V	50/60Hz	0.246A	29.5W	0.820A	24.2W
C4L20	277V	50/60Hz	0.106A	29.5W	0.820A	24.2W



Lifetime (TM-21) data

Lumens	Narrow beam	Medium beam
500lm 1000lm 1500lm	L85 @ 55,000hrs.	L90 @ 60,000hrs.
2000lm	L85 @ 55,000hrs.	L80 @ 60,000hrs.

Lumens

		90CRI,	2700K	90CRI,	6500K								
Light engine	Beam	Input Current	Input Power										
500	Narrow (N)	596	83	590	85	582	88	576	90	567	92	560	95
500m	Medium (M)	529	74	523	76	516	78	509	79	500	82	493	83
1000	Narrow (N)	1097	82	1091	85	1084	87	1079	90	1071	93	1065	96
1000m	Medium (M)	974	73	968	75	960	77	954	79	944	82	938	84
1500	Narrow (N)	1664	79	1657	81	1647	84	1638	86	1626	90	1618	93
1500m	Medium (M)	1479	70	1470	72	1458	74	1449	76	1435	79	1425	82
	Narrow (N)	2181	74	2178	76	2173	80	2170	83	2164	87	2160	89
2000m	Medium (M)	1938	66	1932	68	1925	71	1918	73	1909	76	1903	79

Round Tunable White

Narrow beam (4000 K), 1500 lm Engine, 87 lm/W at 19 W

0-30

0-40

Zonal summary

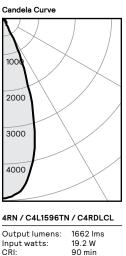
Zone Lumens %Luminaire

90.3%

96.6%

1501

1605



90 min

4000K

0.64

38°

CCT 1:

CRI

CCT 1:

Spacing Crit.:

Beam Angle:

Spacing Crit.:

Beam Angle:

0-	60	1658	99.8%
0-	90	1662	100.0%
Α	ngle	Mean CP	Lumens
	0 5	3929	
	5	3832	
	10	3440	353
	15	2750	
	20	1761	737
	25	883	
	30	313	411
	35	150	
	40	115	104
	45	61	
	50	14	47
	55	7	
	60	4	6
	65	3	
	70	2	3
	75	1	
	80	0	1
	85	4 3 2 1 0 0	
	90	0	l c

Single unit dat	Single unit data						
Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*					
8'	61	5.1'					
9'	49	5.8'					
10'	39	6.4'					
101	27	17'					

20

9.0'

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

14'

Spacing on center	Initial center beam foot-candles	Watts per sq. ft.
5'	78.0	0.85
6'	51.0	0.56
7'	37.0	0.40
8'	30.0	0.33
9'	24.0	0.27
	Room, Workplane 2.5' 0/50/20% Reflectanc	es
Efficacy: 86		
Report ² ST	MR-2476	

Report²: STMR-2476

Adjustment factors

Finish	Lumens
CL = 100% CC = 95% CD = 87% CZ = 63% WH = 87% BK = 57%	2000lm = 133% 1500lm = 100% 1000lm = 67% 500lm = 33%

Coefficients of utilization

Ceiling		80%			70%		50%		30%		0%	
Wall		70	50	30	10	50	10	50	10	50	10	0
RCR		Zona	Zonal cavity method - Effective floor reflectance = 20%									
	0	119	119	119	119	116	116	111	111	106	106	100
0	1	114	112	110	108	110	106	106	103	102	100	95
Room Cavity Ratio	2	110	106	103	100	104	99	101	96	98	94	91
	3	106	100	96	93	99	92	97	91	94	90	87
	4	102	96	91	88	94	87	92	86	91	85	83
	5	98	91	86	83	90	83	89	82	87	81	79
	6	94	87	82	79	86	79	85	78	84	78	76
	7	91	83	79	75	83	75	82	75	81	74	73
	8	88	80	75	72	80	72	79	71	78	71	70
	9	85	77	72	69	76	69	76	69	75	68	67
	10	82	74	69	66	74	66	73	66	72	66	65

Medium beam (2700K), 1500Im Engine, 73Im/W at 21W

0-30

0-40

0-60

0-90

Angle

0

5

10

15

20 25 30

35

40

45

50

55 60

65

70 75

80

85

90

Zonal summary

Zone Lumens %Luminaire

73.4%

92.6%

99.7%

123

404

100.0%

Mean CP Lumens

2076

2060

2064

2225

2496

2176

1206

705

488

212

19

5 3

2

1

1

0

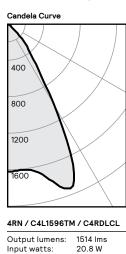
0 0

1112

1402

1509

1514



90 min

2700K

1.1

54°

Single u	init data
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Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*			
5'	83	5.5'			
6'	58	6.6'			
7'	42	7.7'			
8'	32	8.8'			
9'	26	9.9'			

* Beam diameter is where foot-candles drop to 50% of maximum.

Multiple unit data - RCR 2

404										
404 585	Spacing on center	Initial center beam foot-candles	Watts per sq. ft.							
			· ·							
290	5'	69.0	0.92							
200	6'	45.0	0.60							
97	7'	32.0	0.43							
	8'	27.0	0.36							
10	9'	22.0	0.29							
4		38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances								
1										
	Efficacy: 72	.8 lm/W								
0	Report ² : ST	MR-2482								

Adjustment factors

Finish	Lumens				
CL = 100% CC = 95% CD = 87% CZ = 63% WH = 87% BK = 57%	2000lm = 133% 1500lm = 100% 1000lm = 67% 500lm = 33%				

Coefficients of utilization

Ceiling	80%		70%		50%		30%		0%		
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zona	Zonal cavity method - Effective floor reflectance = 20%									
0	119	119	119	119	116	116	111	111	106	106	100
0 1	113	110	108	105	108	104	104	101	100	98	93
2 ڀَ يَ	107	102	98	94	100	93	97	91	94	89	86
<u>د</u> ۳ 3	101	95	90	85	93	85	91	83	88	82	79
Room Cavity Ratio 8	96	88	82	78	87	77	85	76	83	75	73
<u>₹</u> 5	91	82	76	71	81	71	79	70	77	70	67
0 6	86	76	70	65	75	65	74	65	72	64	62
57	81	71	65	60	71	60	69	60	68	60	58
8 %	77	67	60	56	66	56	65	56	64	55	54
9	73	62	56	52	62	52	61	52	60	51	50
10	69	59	52	48	58	48	57	48	56	48	46

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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not form part of any quotation or contract, unless otherwise agreed by Signify.

Telephone: 800-668-9008