LIGHTOLIER

Downlighting

Calculite LED 6" gen 3

C6RTW Round Tunable White

Project:

Location:

Cat.No:

Type:

Qty:

Notes:

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: 6RN

Series	Installation	Voltage / Options
6R		
6R 6" 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

example: C6L1596TMDU

Series	Lumens	CRI/CCT	Beam	Dimming	Voltage
C6L		**96T**			
C6L Calculite LED 6"	**10** 1000lm **15** 1500lm **20** 2000lm **25** 2500lm **30** 3000lm	**96T** 90CRI / 6500-2700K	**N** Narrow (36°) **M** Medium (52°)	**Z10** 0-10V 1% **D** DALI DT8 0.1% **DMX** Digital Multiplexing w/ RDM 0.1% **LTW** Lutron T-Series 1% **RA** Integral Interact Pro RF sensor[4] (enables wireless connected lighting control)	**U** Universal 120V/277V For 347V order T347-75VA accessory

Trim

example: C6RDLCCP

Series	Aperture	Style	Finish	Flange	Options
C6	**R**				
C6 Calculite LED 6"	**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 CA6RFT)	**IEM6** Trim mounted EM test switch[5]
			WH White (matte) **WHAMF** White (gloss antimicrobial)	**–** White (matte) **F** Flangeless (requires CA6RFT)	
		SL Shower Light	**WH** White (matte) **WHAMF** White (gloss antimicrobial)	**–** White (matte)	

Accessories

CA6RFT	Mud-in ring for use with flangeless installations (ordered with a flangeless trim)
CAEM6	Field installable EM pack
C6RVPWH	IP65 rated vandal proof matte white accessory that mounts onto a flangeless trim (not available for use with Lensed Wall Wash)
SWCS	Interact Ready System Bridge accessory w/integral occupancy & daylight sensor (compatible with all 0-10v options, see SWCS 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)

1. 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.
2. Medium (M) beam recommended for all Wall Wash (LW, WW, CW, DW) applications.
3. 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.

Declare. c UL us LISTED WET LOCATION RoHS COMPLIANT

C6RTW Calculite LED 6" gen 3

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.

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: C6RDLCCIEM6). Not avail. for LW style.
- For remote ceiling mounted test switch, order standard trim (ex: C6RDLCC). 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 watts by luminaire configuration efficacy, then by 1.1.

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.

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)

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.

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).

Options and Accessories

Flangeless mud-in ring: Use **CA6RFT** for use with flangless plaster installations.

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

C6RVPWH: 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 (C6RVPWHAMF).

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. C6RDLCCIEM6). Refer to Calculite-LyteProfile-EasyLyte Emergency Battery Pack specification sheet for more details

SWCS: 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
- Red List Declare label certified, ID SIG-0017 (View full Declare label)

Warranty

5 year limited warranty

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

C6RTW Calculite LED 6" gen 3

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.

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

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).

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

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

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.

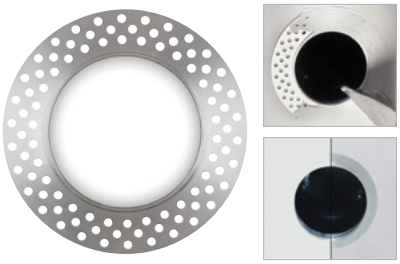
Shower light (SL): Wet location rated shower light with clear acrylic lens applicable in any installation requiring dead front trims, interior or exterior non-corrosive applications, or where a diffused lens at the ceiling is required (non-conductive).

Flanges

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

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.

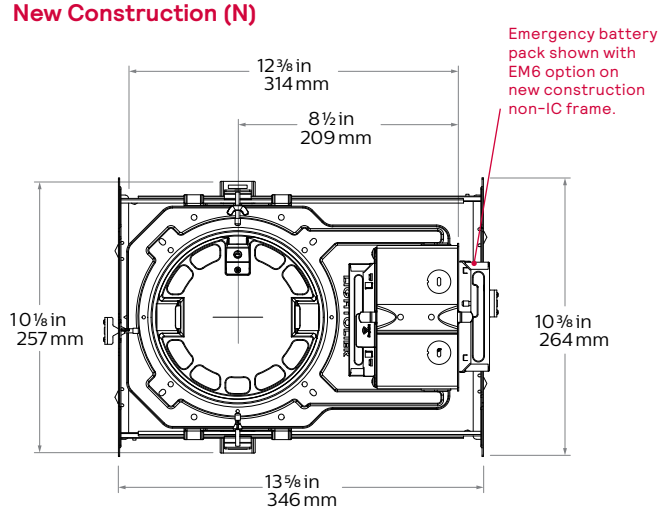


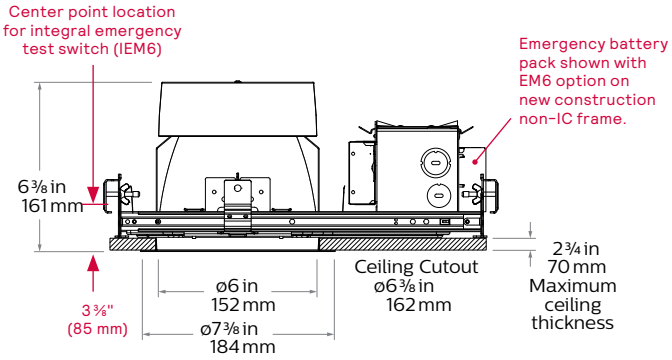
Mud-in ring (FMR): Low profile, non-metallic mud-in ring provides a raised rib to plaster up to and a 3⁄16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.

C6RTW Calculite LED 6" gen 3

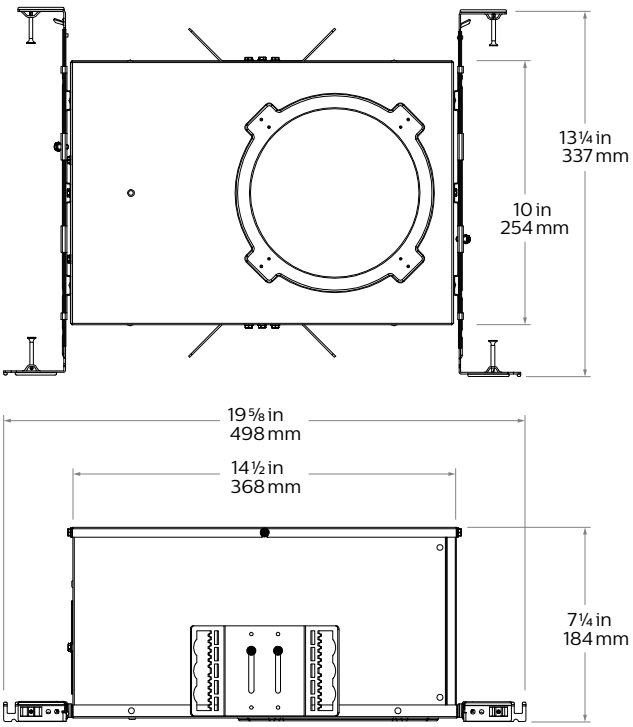
Round Tunable White

New Construction (N)

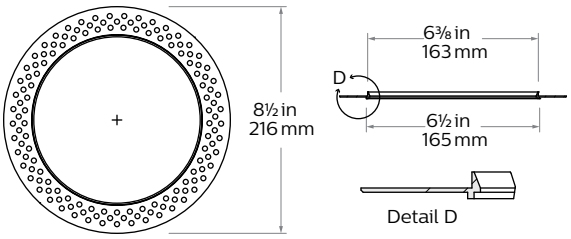




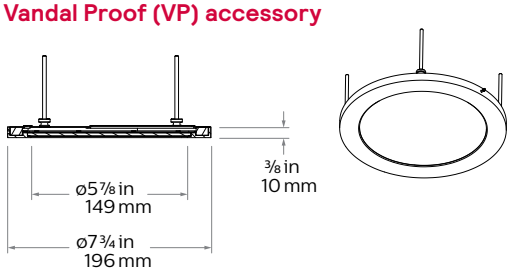
AirSeal (A) & Chicago Plenum (LC)



Flangeless mud-in ring (CA6RFT) accessory



Vandal Proof (VP) accessory



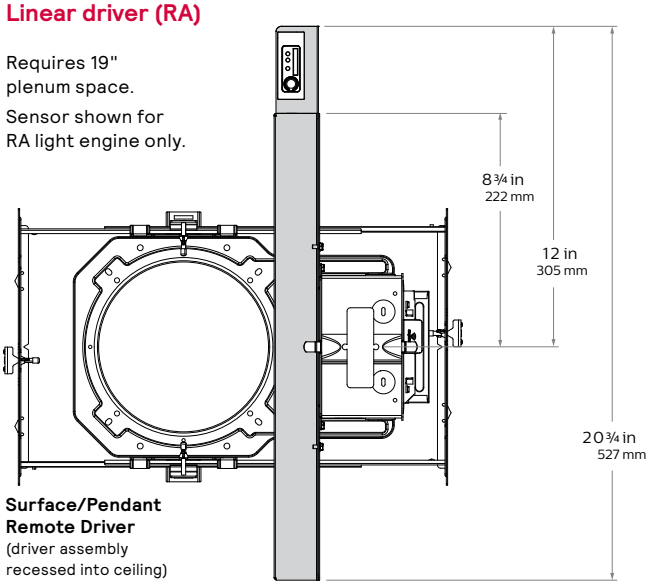
C6RTW Calculite LED 6" gen 3

Round Tunable White

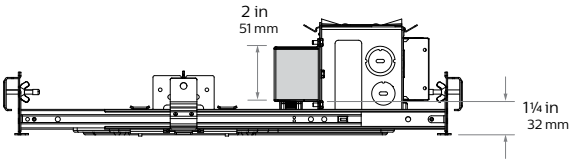
Linear driver (RA)

Requires 19" plenum space.

Sensor shown for RA light engine only.

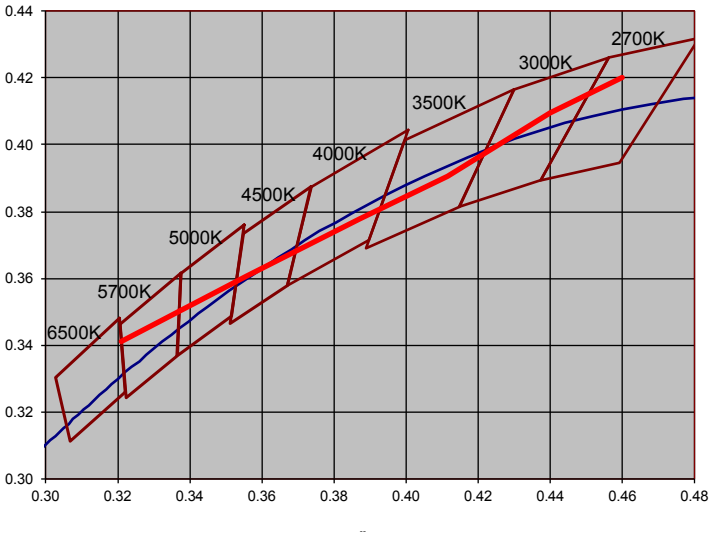


Surface/Pendant Remote Driver
(driver assembly recessed into ceiling) for all configurations.



Electrical

Light engine	Input Volts	Input Freq.	90CRI, 2700K Input Current	90CRI, 2700K Input Power	90CRI, 6500K Input Current	90CRI, 6500K Input Power
C6L10	120V	50/60Hz	0.108A	12.9W	0.091A	10.9W
	277V	50/60Hz	0.047A	13.2W	0.041A	11.3W
C6L15	120V	50/60Hz	0.160A	19.2W	0.137A	16.4W
	277V	50/60Hz	0.070A	19.3W	0.060A	16.5W
C6L20	120V	50/60Hz	0.228A	27.4W	0.191A	23.0W
	277V	50/60Hz	0.099A	27.4W	0.083A	23.0W
C6L25	120V	50/60Hz	0.312A	37.4W	0.250A	29.9W
	277V	50/60Hz	0.134A	37.2W	0.108A	29.9W
C6L30	120V	50/60Hz	0.392A	47.0W	0.313A	37.5W
	277V	50/60Hz	0.169A	46.7W	0.135A	37.3W



Dimming & Beam Charts

C6RTW	Dimming					Beam	
Lumens	Z10	D	DMX	LTW	RA	N	M
1000	L	X	L	X	L	X	X
1500	L	X	L	X	L	X	X
2000	L	X	L	X	L	X	X
2500	L	X	L	X	L	X	X
3000	L	X	L	X	L	X	X

Lifetime (TM-21) data

Lumens	Narrow beam	Medium/Wide beam
1000/1500lm	L85 @ 55,000hrs.	L90 @ 60,000hrs.
2000/2500lm	L85 @ 55,000hrs.	L80 @ 60,000hrs.

Lumens

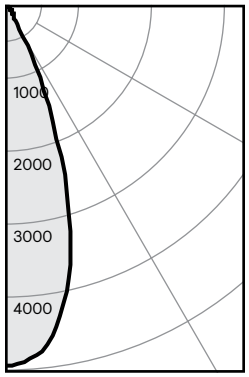
Light engine	Beam	90CRI, 2700K Input Current	90CRI, 2700K Input Power	90CRI, 2700K Input Current	90CRI, 2700K Input Power	90CRI, 2700K Input Current	90CRI, 2700K Input Power	90CRI, 2700K Input Current	90CRI, 2700K Input Power	90CRI, 2700K Input Current	90CRI, 2700K Input Power	90CRI, 6500K Input Current	90CRI, 6500K Input Power
1000 lm	Narrow (N)	1120	87	1115	89	1110	92	1106	94	1099	98	1095	100
	Medium (M)	1061	82	1056	84	1049	87	1043	89	1035	92	1029	94
1500 lm	Narrow (N)	1598	83	1599	86	1601	89	1602	91	1603	95	1604	98
	Medium (M)	1514	79	1513	81	1512	84	1511	86	1509	89	1508	92
2000 lm	Narrow (N)	2154	79	2155	81	2156	84	2158	87	2159	91	2160	94
	Medium (M)	2041	74	2039	77	2037	80	2035	82	2032	86	2030	88
2500 lm	Narrow (N)	2727	73	2723	76	2718	79	2714	83	2707	87	2703	90
	Medium (M)	2584	69	2577	72	2568	75	2559	78	2548	82	2540	85
3000 lm	Narrow (N)	3199	68	3203	71	3210	75	3215	78	3223	83	3228	86
	Medium (M)	3031	64	3031	67	3032	71	3032	74	3033	78	3034	81

C6RTW Calculite LED 6" gen 3

Round Tunable White

Narrow beam (4000 K), 2500lm Engine, 84 lm/W at 31W

Candela Curve



6RN / C6L2596TN / C6RDLCL

Output lumens:	2584 lms
Input watts:	30.8 W
CRI:	90 min
CCT[1]:	4000K
Spacing Crit.:	0.6
Beam Angle:	36°

Zonal summary

Zone	Lumens	%Luminaire
0-30	2297	88.9%
0-40	2485	96.2%
0-60	2490	96.4%
0-90	2584	100.0%

Angle	Mean CP	Lumens
0	6514	
5	6170	
10	5220	558
15	4054	
20	2717	1103
25	1365	
30	493	636
35	281	
40	234	188
45	125	
50	13	4
55	3	
60	2	1
65	1	
70	1	0
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)*
8'	102	4.8'
9'	80	5.4'
10'	65	6.0'
12'	45	6.6'
14'	33	8.4'

* 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'	121.0	1.37
6'	79.0	0.90
7'	57.0	0.64
8'	47.0	0.53
9'	38.0	0.43

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

Efficacy: **83.9 lm/W**
Report[2]: STMR-2486

Adjustment factors

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

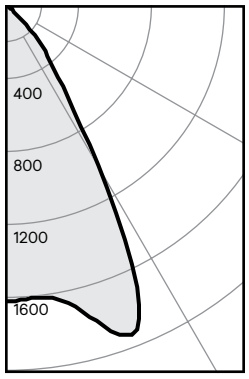
Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	114	112	110	108	110	106	106	103	102	100	95
2	110	106	102	100	104	99	101	96	98	94	91
3	106	100	96	93	99	92	96	91	94	89	87
4	102	95	91	87	94	87	92	86	90	85	83
5	98	91	86	83	90	82	88	82	87	81	79
6	94	87	82	78	86	78	85	78	83	77	76
7	91	83	78	75	83	75	81	74	80	74	72
8	87	80	75	71	79	71	78	71	77	71	69
9	84	77	72	69	76	68	75	68	74	68	67
10	82	74	69	66	73	66	73	66	72	65	64

Room Cavity Ratio

Medium beam (4000 K), 2500lm Engine, 79 lm/W at 31W

Candela Curve



6RN / C6L2596TM / C6RDLCL

Output lumens:	2412 lms
Input watts:	30.7 W
CRI:	90 min
CCT[1]:	4000K
Spacing Crit.:	1.08
Beam Angle:	52°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1770	73.4%
0-40	2234	92.6%
0-60	2410	99.9%
0-90	2412	100.0%

Angle	Mean CP	Lumens
0	2076	
5	2060	
10	2064	196
15	2225	
20	2496	644
25	2176	
30	1206	930
35	705	
40	488	464
45	212	
50	19	170
55	5	
60	3	6
65	2	
70	1	2
75	1	
80	0	1
85	0	
90	0	0

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	83	5.4'
6'	58	6.5'
7'	42	7.6'
8'	32	8.6'
9'	26	9.7'

* 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'	110.0	1.36
6'	72.0	0.89
7'	52.0	0.64
8'	43.0	0.53
9'	34.0	0.43

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

Efficacy: **78.6 lm/W**
Report[2]: STMR-2489

Adjustment factors

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

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%
Wall	70	50	30	10	50	10	50	10	50	10	0
RCR	Zonal cavity method - Effective floor reflectance = 20%										
0	119	119	119	119	116	116	111	111	106	106	100
1	114	111	108	106	109	104	105	101	101	98	94
2	108	103	99	96	101	95	98	92	95	91	87
3	102	96	91	87	95	86	92	85	90	84	81
4	97	90	84	80	88	79	86	78	84	78	75
5	92	84	78	74	83	73	81	73	79	72	70
6	87	79	72	68	78	68	76	67	75	67	65
7	83	74	68	63	73	63	72	63	71	63	61
8	79	69	63	59	69	59	68	59	67	58	57
9	75	65	59	55	65	55	64	55	63	55	53
10	71	62	56	52	61	52	60	52	59	51	50

Room Cavity Ratio

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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GENLYTE SOLUTIONS
a signify business

Signify North America Corp.
400 Crossing Blvd, Suite 600
Bridgewater, NJ 08807
Telephone: 800-555-0050

Signify Canada Ltd.
281 Hillmount Road,
Markham, ON, Canada L6C 2S3
Telephone: 800-668-9008

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