

PHILIPS LIGHTOLIER

Downlighting

Calculite LED gen 3 6" round tunable white

1000 – 2500lm



Project: _____

Location: _____

Cat.No: _____

Type: _____

Lamps: _____ Qty: _____

Notes: _____

Calculite LED 6" generation 3 features industry leading visual comfort, excellent uniform illumination over time, and patented installation flexibility.

Complete product = Frame + Engine + Trim

Frame

example: C6RN

Series	Aperture	Installation	Voltage/Options
C6	R		
C6 Calculite LED 6" aperture	R Round	N New Construction R Remodeler	— Universal (120/277V) 3 347V EM Emergency ^{1,2} LC Chicago Plenum ¹
		A Airseal IC	— Universal (120/277V)

Engine

example: C6L10865MDUTW

Series	Lumens	CRI	CCT	Beam	Dimming	Voltage	Options
C6L							TW
C6L Calculite LED 6" aperture	10 1000lm 15 1500lm 20 2000lm 25 2500lm	8 80 CRI	65 6500–2700K	M Medium (56°) W Wide (78°) ³	D Dali	U Universal (120/277V/347V)	TW Tunable White

Trim

example: C6RDLCCP

Series	Aperture	Style	Finish	Flange
C6	R			
C6 Calculite LED 6" aperture	R Round	DL Downlight WW Open Wall Wash ³ LW Lensed Wall Wash ³ CW Corner Wall Wash ^{3,5} DW Double Wall Wash ^{3,5}	CL Specular clear CC Comfort clear CD Comfort clear diffuse CZ Champagne bronze BK Black (matte) WH White (matte)	— White (matte) P Polished F Flangeless ⁵ — White (matte) F Flangeless ⁵

Accessories (ordered with a flangeless trim)

CA6RFT	Mud-in ring for use with flangeless installations.
CAEM	Field installable EM pack.
C6RVPWH	IP65 rated vandal proof matte white accessory that mounts onto a flangeless trim.

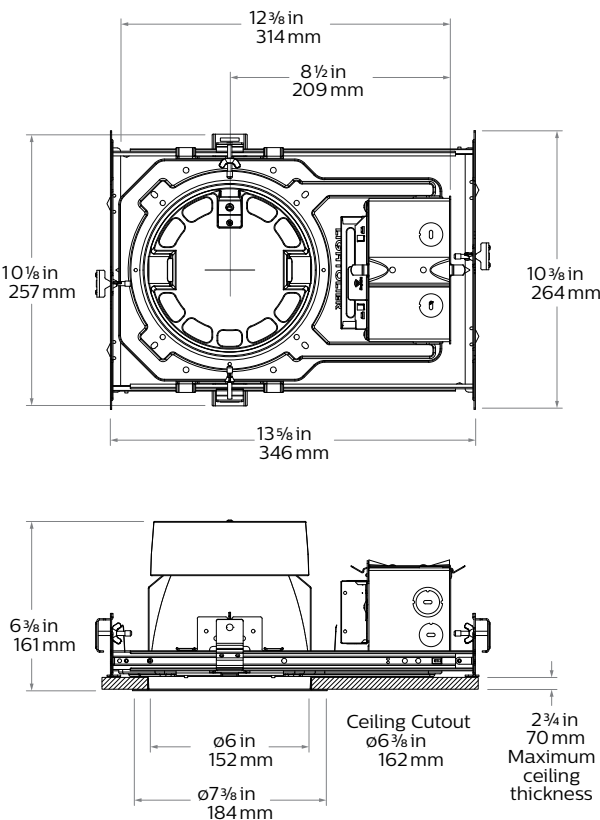
- Emergency (EM) and Chicago Plenum (LC) options are only available with New construction (N) installations.
- Emergency (EM) frame comes with emergency battery pack and ceiling mountable test switch. Reflector mounted test switch requires above ceiling access and is only available with the downlight option. For reflector mounted test switch, order emergency frame and add "EM" suffix to reflector (example: C6RDLCCEM).
- Wide (W) is ideal for wall washing applications.
- Corner (CW) and Double (DW) wall wash are not available with flangeless (F) option.



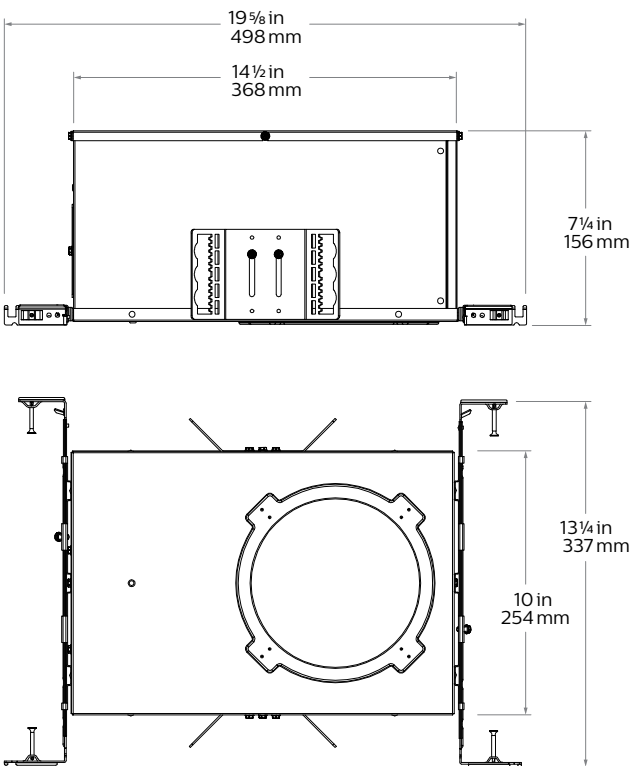
C6RTW Calculite LED generation 3

6" round tunable white

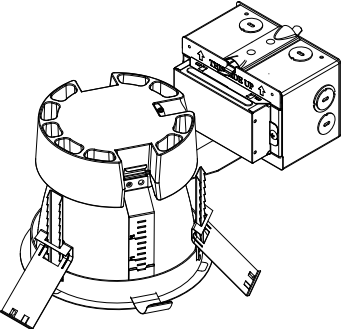
New Construction (N)



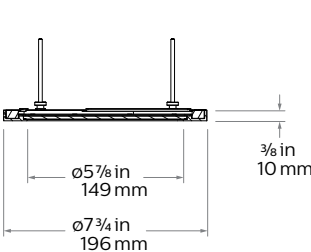
Chicago Plenum (LC)



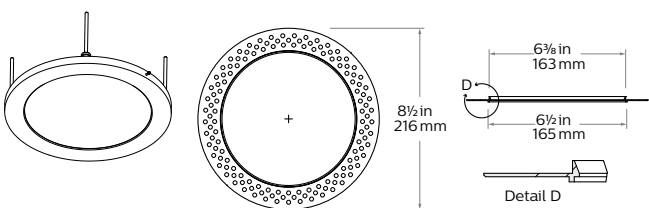
Remodeler (R)



Vandal Proof accessory



Flangeless mud-in ring (CA6RFT)



Consult factory for wood installation instructions.

Lifetime (TM-21) data

Lumens	Narrow beam	Medium/Wide beam*
500lm	L90 @ 60,000hrs.	L90 @ 60,000hrs.
1000lm		
1500lm		
2000lm	L90 @ 60,000hrs.	L85 @ 60,000hrs.
2500lm		
3000lm*		

* Lutron 3000lm with Medium/Wide beam is L80 @ 60,000hrs.

C6RTW Calculite LED generation 3

6" 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".

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 the possibility of undesired gap between ceiling opening and reflector flange.

Separate wiring compartment for wiring frame to building allows inspection prior to light engine installation.

Simple plug-and-play connection between the frame and light engine from below the ceiling eliminates the 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.

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.

Drivers

- EldoLED ECoDrive Dali 1% Dimming

Options and Accessories

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

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

Labels and Listings

cULus listed for wet locations

IBEW Union made (light engines & reflectors)

RoHS compliant

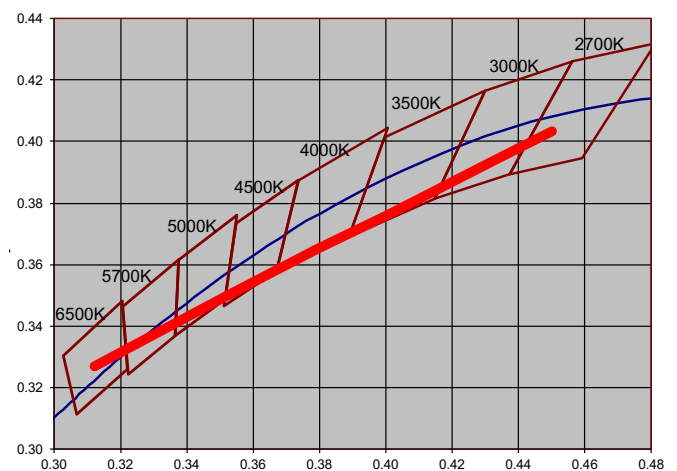
Warranty

5 year warranty on complete system.

Complete warranty available at: http://images.philips.com/is/content/PhilipsConsumer/PDFDownloads/United%20States/ODLI20150930_003-UPD-en_US-Philips-warranty-indoor-PLS-us.pdf

Color information

6" 2000lm	2700K	3000K	3500K	4000K	5000K	6500K
Flux (lms)	1927	1856	1863	1937	1848	1790
Power (W)	19.21	18.12	17.62	17.93	17.14	16.84
Efficacy (lm/W)	100.3	102.4	105.7	108.0	107.8	106.3
CCT	2785	3008	3499	3936	4818	6549
CRI	86	87	88	89	88	84
R9	20	26	33	36	33	15
x	0.4501	0.4311	0.3999	0.3794	0.3495	0.3122
y	0.4033	0.393	0.376	0.3649	0.3484	0.3269
Duv	-0.0018	-0.0037	-0.0054	-0.0054	-0.0034	0.0024

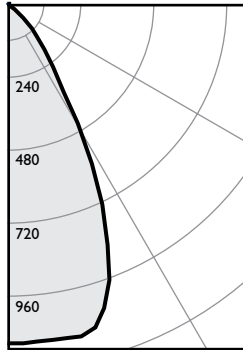


C6RTW Calculite LED generation 3

6" round tunable white

Medium beam, 2000lm Engine, 100.3 lm/W

Candela Curve



Frame: **C6RN**
Engine: **C6L20865MDUTW**
Trim: **C6RDLCL**

Output lumens: 1927 lms
Input watts: 19.2 W
CRI: 80 min
CCT¹: 2700K
Spacing Crit.: 0.8
Beam Angle: 56°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1472	76.4%
0-40	1808	93.8%
0-60	1923	99.8%
0-90	1927	100.0%

Angle	Mean CP	Lumens
0	2229	
5	2223	212
10	2227	
15	2194	605
20	1930	
25	1459	655
30	916	
35	511	337
40	298	
45	137	108
50	17	
55	7	7
60	4	
65	3	3
70	2	
75	1	1
80	1	
85	0	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	89	4.0'
6'	62	4.8'
7'	45	5.6'
8'	35	6.4'
9'	28	7.2'

* 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'	88.4	0.85
6'	58.0	0.56
7'	41.4	0.40
8'	34.5	0.33
9'	27.6	0.27

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

Efficacy: 100.3 lm/w
Report²: 1212GFR

Adjustment factors

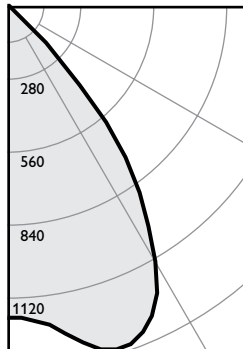
Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 103%	2500lm = ???%
CC = 95%	80CRI 3500K = 100%	2000lm = 100%
CD = 87%	80CRI 3000K = 95%	1500lm = 75%
CZ = 63%	80CRI 2700K = 93%	1000lm = 50%
WH = 87%	90CRI 3000K = 83%	
BK = 57%	90CRI 2700K = 78%	

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	100	100
1	114	111	109	106	109	105	105	105	102	101	99	94	101	99	94	94	94
2	108	104	100	97	102	95	99	93	96	91	88	88	96	91	88	88	88
3	103	97	92	88	96	88	93	86	91	85	82	82	91	85	82	82	82
4	98	91	86	82	90	81	88	80	86	79	77	77	86	79	77	77	77
5	93	85	80	76	84	75	83	75	81	74	72	72	81	74	72	72	72
6	89	80	75	71	80	70	78	70	77	69	67	67	77	69	67	67	67
7	85	76	70	66	75	66	74	65	73	65	63	63	73	65	63	63	63
8	81	72	66	62	71	62	70	62	69	61	60	60	69	61	60	60	60
9	77	68	62	58	67	58	66	58	66	58	56	56	66	58	56	56	56
10	74	64	59	55	64	55	63	55	62	55	53	53	62	55	53	53	53

Wide beam, 2000lm Engine, 95.2 lm/W

Candela Curve



Frame: **C6RN**
Engine: **C6L20865WDUTW**
Trim: **C6RDLCL**

Output lumens: 1828 lms
Input watts: 19.2 W
CRI: 80 min
CCT¹: 2700K
Spacing Crit.: 1.2
Beam Angle: 78°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1091	59.7%
0-40	1628	89.1%
0-60	1823	99.7%
0-90	1828	100.0%

Angle	Mean CP	Lumens
0	1192	
5	1207	117
10	1268	
15	1358	382
20	1373	
25	1306	592
30	1130	
35	869	537
40	584	
45	205	185
50	23	
55	10	10
60	6	
65	3	4
70	2	
75	1	1
80	1	
85	0	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	48	6.0'
6'	33	7.2'
7'	24	8.4'
8'	19	9.6'
9'	15	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'	82.4	0.85
6'	54.1	0.56
7'	38.6	0.40
8'	32.2	0.33
9'	25.7	0.27

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

Efficacy: 95.2 lm/w
Report²: 1214GFR

Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	2500lm = ???%
CC = 95%	80CRI 3500K = 100%	2000lm = 100%
CD = 87%	80CRI 3000K = 97%	1500lm = 75%
CZ = 63%	80CRI 2700K = 87%	1000lm = 50%
WH = 87%	90CRI 3000K = 77%	
BK = 57%	90CRI 2700K = 73%	

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	100	100
1	113	110	108	105	108	104	104	104	100	100	97	93	100	97	93	93	93
2	107	102	98	94	100	93	97	91	94	89	85	85	94	89	85	85	85
3	101	94	89	85	93	84	90	82	88	81	78	78	88	81	78	78	78
4	95	87	81	77	86	76	84	75	82	74	72	72	82	74	72	72	72
5	90	81	75	70	80	70	78	69	76	68	66	66	76	68	66	66	66
6	85	75	69	64	74	64	73	63	71	63	61	61	71	63	61	61	61
7	80	70	63	59	69	59	68	58	67	58	56	56	67	58	56	56	56
8	75	65	59	54	65	54	63	54	62	54	52	52	62	54	52	52	52
9	71	61	54	50	60	50	59	50	58	50	48	48	58	50	48	48	48
10	68	57	51	47	57	46	56	46	55	46	45	45	55	46	45	45	45

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.

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Philips Lighting, North America Corporation
200 Franklin Square Drive, Somerset, NJ 08873
Tel. 855-486-2216

Philips Lighting Canada Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008