

PHILIPS LIGHTOLIER

Downlighting

Calculite LED gen 3 6" round AirSeal

1000 – 3500lm



Project: _____
Location: _____
Cat.No: _____
Type: _____
Lamps: _____ Qty: _____
Notes: _____

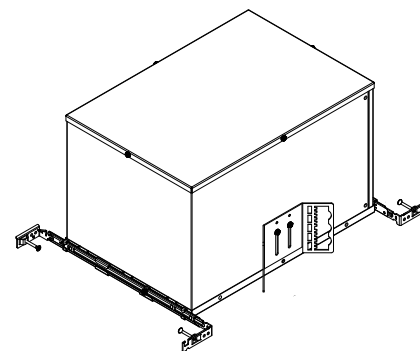
Calculite LED 6" generation 3 features industry leading visual comfort, excellent uniform illumination over time, and patented installation flexibility.

Complete product = Frame + Engine + Trim

Frame

example: C6RA

Series	Aperture	Installation
C6	R	A
C6 Calculite LED 6" aperture	R Round	A AirSeal IC (120/277V)



example: C6L15835NZ10U

Engine

Series	Lumens	CRI	CCT	Beam	Dimming	Voltage
C6L						
C6L Calculite LED 6" aperture	10 1000lm	8 80CRI	27 2700K ¹	N Narrow (40°)	Z10 0-10V 1%	U Universal (120/277/347V)
	15 1500lm	9 90CRI ¹	30 3000K ¹	M Medium (55°)	SOL EldoLED Solo 0.1%	
	20 2000lm		35 3500K	W Wide (72°) ³	D Dali	
	25 2500lm		40 4000K		L Lutron LDE1 EcoSystem fade-to-black	
					E ELV (120V dimming only)	1 Universal (120/277/347V)
	35 3500lm	8 80CRI	27 2700K ¹	M Medium (55°)	Z10 0-10V 1%	U Universal (120/277/347V)
		9 90CRI ¹	30 3000K ¹	W Wide (72°) ³		
			35 3500K			
			40 4000K			

Trim

example: C6RDLCCP

Series	Aperture	Style	Finish	Flange
C6	R			
C6 Calculite LED 6" aperture	R Round	DL Downlight	CL Specular clear	- White (matte)
		WW Open Wall Wash	CC Comfort clear	P Polished
		LW Lensed Wall Wash	CD Comfort clear diffuse	F Flangeless ²
		CW Corner Wall Wash ²	CZ Champagne bronze	
		DW Double Wall Wash ²	BK Black (matte)	
			WH White (matte)	- White (matte)
				F Flangeless ²

Accessories (ordered with a flangeless trim)

CA6RFT Mud-in kit for use with flangeless installations.

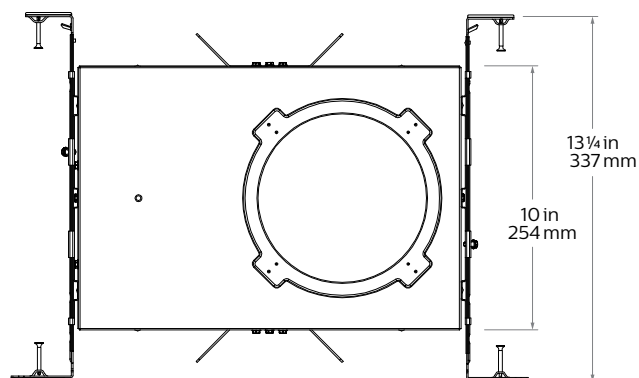
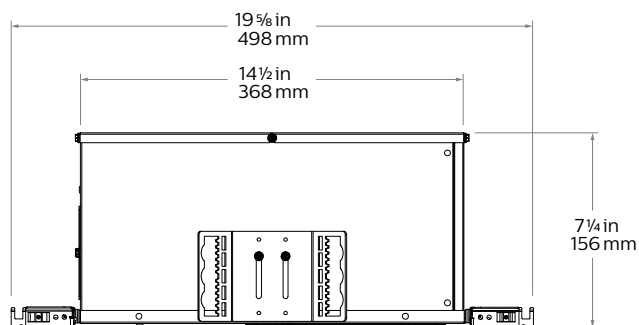
- The 90 (9) CRI option is only available with 2700K (27) and 3000K (30) CCT.
- Corner (CW) and Double (DW) Wall Wash are not available with flangeless (F) option.
- Wide (W) beam is ideal for wall washing applications.



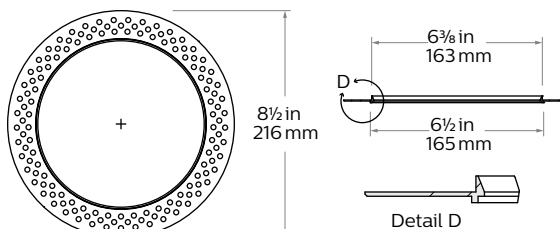
C6RA Calculite LED generation 3

6" round AirSeal IC for downlight and wall wash

AirSeal (A)



Flangeless mud-in ring (CA6RFT)



Consult factory for wood installation instructions.

Lifetime (TM-21) data

Lumens	Narrow beam	Medium/Wide beam
1000lm	L85 @ 55,000hrs.	L85 @ 60,000hrs.
1500lm		
2000lm		
2500lm		
3500lm	L85 @ 55,000hrs.	L80 @ 60,000hrs.

Narrow

Light engine	Input volts	Input freq	Input current	Drive current	Input power	THD power	Power factor
C6L10_NZ10U	120V	50/60Hz	0.08	230 mA	9W	<15%	>0.95
	277V		0.04			<20%	>0.95
C6L15_NZ10U	120V	50/60Hz	0.11	340 mA	15W	<10%	>0.95
	277V		0.05			<15%	>0.95
C6L20_NZ10U	120V	50/60Hz	0.16	460 mA	22W	<10%	>0.95
	277V		0.08			<15%	>0.95
C6L25_NZ10U	120V	50/60Hz	0.20	590 mA	25W	<10%	>0.95
	277V		0.10			<15%	>0.95
C6L35_NZ10U	120V	50/60Hz	0.30	900 mA	36W	<10%	>0.95
	277V		0.14			<15%	>0.95

Medium/Wide

Light engine	Input volts	Input freq	Input current	Drive current	Input power	THD power	Power factor
C6L10_MZ10U	120V	50/60Hz	0.08	210 mA	9W	<15%	>0.95
	277V		0.04			<20%	>0.95
C6L15_MZ10U	120V	50/60Hz	0.11	320 mA	15W	<10%	>0.95
	277V		0.05			<15%	>0.95
C6L20_MZ10U	120V	50/60Hz	0.15	430 mA	19W	<10%	>0.95
	277V		0.07			<15%	>0.95
C6L25_MZ10U	120V	50/60Hz	0.19	550 mA	23W	<10%	>0.95
	277V		0.09			<15%	>0.95
C6L35_MZ10U	120V	50/60Hz	0.25	570 mA	30W	<10%	>0.95
	277V		0.11			<15%	>0.95

C6RA Calculite LED generation 3

6" round AirSeal IC for downlight and wall wash

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 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.

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%
- ELV 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 **CA6RFT** for use with flangeless installations..

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

ENERGY STAR® exceptions

1. Dali configurations
2. 90 CRI configurations
3. Champagne Bronze and Black finishes
4. 347V and Emergency configurations
5. Wall wash configurations
6. ELV & EldoLED Solo dimming

Labels and Listings

cULus listed for wet location

ENERGY STAR

IBEW Union made (light engines & reflectors)

RoHS compliant

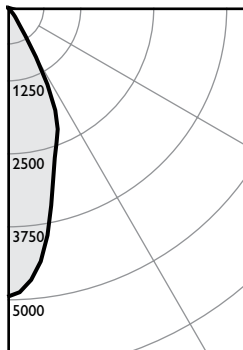
Warranty

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

Narrow beam, 2500lm Engine, 103.0 lm/W

Candela Curve



Frame: **C6RN**
Engine: **C6L25835NZ10U**
Trim: **C6RDLCL**

Output lumens: 2462 lms
Input watts: 23.9 W
CRI: 80 min
CCT¹: 3500K
Spacing Crit.: 0.6
Beam Angle: 40°

Zonal summary

Zone	Lumens	%Luminaire
0-30	2113	85.8%
0-40	2383	96.8%
0-60	2459	99.9%
0-90	2462	100.0%

Angle	Mean CP	Lumens
0	4938	423
5	4667	
10	3948	
15	3027	856
20	2456	
25	1936	834
30	977	
35	352	270
40	205	
45	87	72
50	13	
55	4	4
60	3	
65	2	2
70	1	
75	1	1
80	0	
85	1	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	198	3.0'
6'	137	3.6'
7'	101	4.2'
8'	77	4.8'
9'	61	5.4'

* 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'	114.3	1.06
6'	75.0	0.70
7'	53.6	0.50
8'	44.7	0.41
9'	35.7	0.33

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

Efficacy: 103.0 lm/w
Report²: F37145

Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 103%	6000lm = 202%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 95%	3500lm = 140%
CZ = 63%	80CRI 2700K = 93%	2500lm = 100%
WH = 87%	90CRI 3000K = 83%	2000lm = 80%
BK = 57%	90CRI 2700K = 78%	1500lm = 60%
		1000lm = 40%

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%											
Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106	100
	1	114	112	109	107	110	106	105	102	102	99	95
	2	109	105	101	98	103	97	100	95	97	93	90
	3	105	99	95	91	98	90	95	89	93	88	85
	4	100	94	89	85	93	85	90	84	88	83	80
	5	96	89	84	80	88	79	86	79	84	78	76
	6	92	84	79	75	83	75	82	74	81	74	72
	7	88	80	75	71	79	71	78	71	77	70	69
	8	85	76	71	67	76	67	75	67	74	67	65
	9	81	73	68	64	72	64	72	64	71	64	62
	10	78	70	65	61	69	61	68	61	68	61	59

1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSI C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.

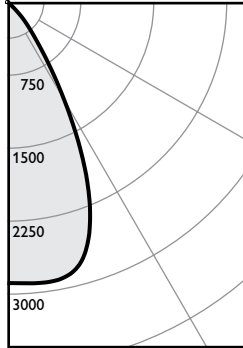
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.

C6RA Calculite LED generation 3

6" round AirSeal IC for downlight and wall wash

Medium beam, 2500lm Engine, 115.2 lm/W

Candela Curve



Frame: **C6RN**
Engine: **C6L25835MZ10U**
Trim: **C6RDLCL**

Output lumens: 2454 lms
Input watts: 21.3 W
CRI: 80 min
CCT¹: 3500K
Spacing Crit.: 0.8
Beam Angle: 55°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1896	77.2%
0-40	2319	94.5%
0-60	2450	99.8%
0-90	2454	100.0%

Angle	Mean CP	Lumens
0	2886	277
5	2900	
10	2903	
15	2809	
20	2472	
25	1880	842
30	1178	
35	644	
40	347	
45	153	
50	23	8
55	6	
60	4	
65	3	
70	2	
75	1	1
80	1	
85	1	
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	115	4.0'
6'	80	4.8'
7'	59	5.6'
8'	45	6.4'
9'	36	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'	112.7	0.94
6'	74.0	0.62
7'	52.8	0.44
8'	44.0	0.37
9'	35.2	0.30

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

Efficacy: 115.2 lm/w
Report#: F37135

Adjustment factors

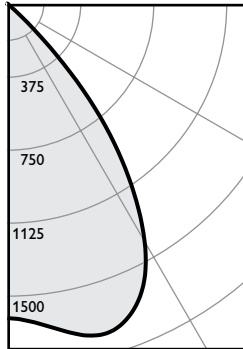
Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	6000lm = 240%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 97%	3500lm = 140%
CZ = 63%	80CRI 2700K = 87%	2500lm = 100%
WH = 87%	90CRI 3000K = 77%	2000lm = 80%
BK = 57%	90CRI 2700K = 73%	1500lm = 60%
		1000lm = 40%

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	107	109	105	105	102	101	99	94	101	99	94	94	94
	2	108	104	100	97	102	96	99	94	96	92	88	96	92	88	88	88
	3	103	97	92	89	96	88	93	87	91	85	82	91	85	82	82	82
	4	98	91	86	82	90	81	88	80	86	79	77	86	79	77	77	77
	5	94	86	80	76	85	76	83	75	81	74	72	81	74	72	72	72
	6	89	81	75	71	80	71	78	70	77	70	68	77	70	68	68	68
	7	85	76	70	66	76	66	74	66	73	66	64	73	66	64	64	64
	8	81	72	66	62	71	62	70	62	69	62	60	69	62	60	60	60
	9	77	68	63	59	68	59	67	58	66	58	57	66	58	57	57	57
	10	74	65	59	55	64	55	63	55	63	55	54	63	55	54	54	54

Wide beam, 2500lm Engine, 108.3 lm/W

Candela Curve



Frame: **C6RN**
Engine: **C6L25835WZ10U**
Trim: **C6RDLCL**

Output lumens: 2307 lms
Input watts: 21.3 W
CRI: 80 min
CCT¹: 3500K
Spacing Crit.: 1.1
Beam Angle: 72°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1394	60.4%
0-40	2059	89.2%
0-60	2302	99.8%
0-90	2307	100.0%

Angle	Mean CP	Lumens
0	1612	159
5	1641	
10	1705	
15	1760	
20	1740	
25	1629	740
30	1408	
35	1083	
40	700	
45	270	
50	39	12
55	9	
60	5	
65	3	
70	2	
75	1	1
80	1	
85	1	
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	64	5.5'
6'	45	6.6'
7'	33	7.7'
8'	25	8.8'
9'	20	9.9'

* 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'	104.1	0.94
6'	68.3	0.62
7'	48.8	0.44
8'	40.7	0.37
9'	32.5	0.30

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

Efficacy: 108.3 lm/w
Report#: F37140

Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	6000lm = 240%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 97%	3500lm = 140%
CZ = 63%	80CRI 2700K = 87%	2500lm = 100%
WH = 87%	90CRI 3000K = 77%	2000lm = 80%
BK = 57%	90CRI 2700K = 73%	1500lm = 60%
		1000lm = 40%

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	100	100	97	93	100	97	93	93	93
	2	107	102	98	94	100	93	97	91	94	89	85	94	89	85	85	85
	3	101	94	89	85	93	84	90	83	88	81	79	88	81	79	79	79
	4	95	87	81	77	86	76	84	76	82	75	72	82	75	72	72	72
	5	90	81	75	70	80	70	78	69	77	69	66	77	69	66	66	66
	6	85	75	69	64	75	64	73	64	72	63	61	72	63	61	61	61
	7	80	70	64	59	70	59	68	59	67	58	57	67	58	57	57	57
	8	76	66	59	55	65	55	64	54	63	54	52	63	54	52	52	52
	9	72	61	55	51	61	51	60	50	59	50	49	59	50	49	49	49
	10	68	57	51	47	57	47	56	47	55	47	45	55	47	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.

C6RA Calculite LED generation 3

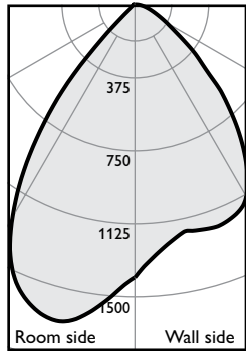
6" round AirSeal IC for downlight and wall wash

Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	6000lm = 202%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 97%	3500lm = 140%
CZ = 63%	80CRI 2700K = 87%	2500lm = 100%
WH = 87%	90CRI 3000K = 77%	2000lm = 80%
BK = 57%	90CRI 2700K = 73%	1500lm = 60%
		1000lm = 40%

Wall Wash, 2500lm Engine, 103.5 lm/w

Candela Curve



Frame: **C6RN**
Engine: **C6L25835WZ10U**
Trim: **C6RWWCL**

CCT¹: 3500K
Output lumens: 2204 lms
Input watts: 21.3 W
CRI: 80 min

Efficacy: 103.5 lm/w
Report²: F37141

Multiple unit data

Footcandles on wall

	2' from wall		
	3' on ctr.		
Distance from ceiling in feet	1	2	3
1	33	24	33
2	61	44	61
3	58	60	58
4	46	49	46
5	37	37	37
6	28	29	28
7	23	23	23
8	19	19	19
9	16	16	16
10	14	14	14
12	12	12	12
14	10	10	10

Multiple unit data

Footcandles on wall

	3' from wall		
	3' on ctr.		
Distance from ceiling in feet	1	2	3
1	15	15	15
2	26	26	26
3	37	37	37
4	40	42	40
5	38	38	38
6	33	33	33
7	28	28	28
8	24	24	24
9	20	20	20
10	18	18	18
12	14	15	14
14	13	12	13

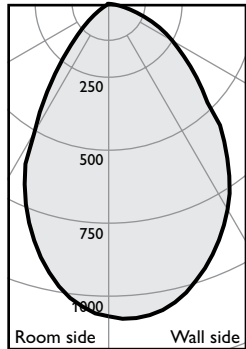
Multiple unit data

Footcandles on wall (shown above)

	3' from wall		
	4' on ctr.		
Distance from ceiling in feet	1	2	3
1	13	11	13
2	22	18	22
3	31	26	31
4	31	32	31
5	28	30	28
6	25	26	25
7	21	22	21
8	18	18	18
9	16	16	16
10	14	14	14
12	11	11	11
14	10	10	10

Lensed Wall Wash, 2500lm Engine, 72.2 lm/w

Candela Curve



Frame: **C6RN**
Engine: **C6L25835WZ10U**
Trim: **C6RLWCL**

CCT¹: 3500K
Output lumens: 1538 lms
Input watts: 21.3 W
CRI: 80 min

Efficacy: 72.2 lm/w
Report²: F37142

Multiple unit data

Footcandles on wall

	2' from wall		
	3' on ctr.		
Distance from ceiling in feet	1	2	3
1	44	31	44
2	55	47	55
3	47	45	47
4	35	36	35
5	27	27	27
6	21	21	21
7	17	17	17
8	13	14	13
9	11	11	11
10	10	10	10
12	8	8	8
14	7	7	7

Multiple unit data

Footcandles on wall

	3' from wall		
	3' on ctr.		
Distance from ceiling in feet	1	2	3
1	17	17	17
2	31	31	31
3	35	35	35
4	33	34	33
5	29	29	29
6	24	24	24
7	20	20	20
8	17	17	17
9	15	15	15
10	13	13	13
12	10	10	10
14	9	9	9

Multiple unit data

Footcandles on wall (shown above)

	3' from wall		
	4' on ctr.		
Distance from ceiling in feet	1	2	3
1	14	11	14
2	25	22	25
3	27	25	27
4	26	25	26
5	22	22	22
6	18	19	18
7	16	16	16
8	13	13	13
9	11	11	11
10	10	10	10
12	8	8	8
14	7	7	7

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.

