



Calculite LED generation 3 retrofit kits are designed to quickly convert installed Calculite compact fluorescent, incandescent and former generations of LED Downlights to the newest LED technology.

Project: _____

Location: _____

Cat.No: _____

Type: _____

Lamps: _____ Qty: _____

Notes: _____

Complete conversion kit = Engine + Trim

Engine

example: C6L15835WZ10UR

Series	Lumens	CRI	CCT	Beam	Dimming	Voltage	Installation
C6L							R
C6L Calculite LED 6" aperture	10 1000lm	8 80CRI	27 2700K	M Medium (55°) W Wide (72°)	Z10 0-10V 1%	U Universal 120/277V	R Retrofit
	15 1500lm		30 3000K		E ELV (120V dimming only)	1 Universal 120V/277V	
	20 2000lm		35 3500K				
	25 2500lm		40 4000K				
	35 3500lm						

Trim

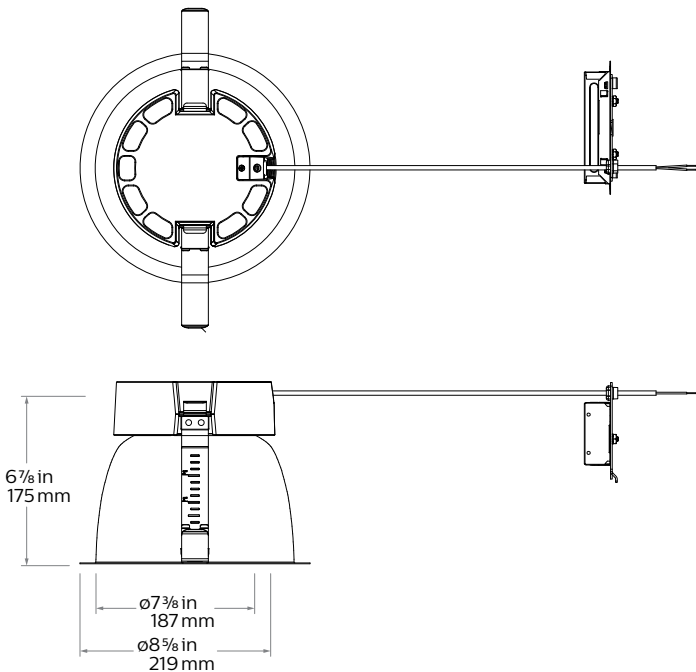
example: C7RDLNMCC

Series	Aperture	Style	Finish	Flange
C7				
C7 Calculite LED 7" aperture	R Round	DLNM Downlight (narrow/med. beam)	BK Black (matte)	CC Comfort clear
			CL Specular clear	CD Comfort clear diffuse
		DLW Downlight (wide beam)	CZ Champagne bronze	CC Comfort clear
			WH White (matte)	CD Comfort clear diffuse
			CZ Champagne bronze	CC Comfort clear
			WH White (matte)	CD Comfort clear diffuse
		WW Wall wash	BK Black (matte)	CC Comfort clear
			CL Specular clear	CD Comfort clear diffuse
			CZ Champagne bronze	CC Comfort clear
			WH White (matte)	CD Comfort clear diffuse

C7L Calculite LED 7" gen 3

Round Retrofit

Retrofit (R) with round trim



Reflector



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.



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

Flange



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



Polished (P): (matches aperture) Produces a continuous look throughout the reflector (aperture matching).



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

C7L Calculite LED 7" gen 3

Round Retrofit

Compatibility

Frames

With CFL:
S7142_series
S7226_series

With INC:
CS700

With LED:
C7L_N series

Engines

Use Retrofit configuration:
C7R_ Trim + C6L_ Engine
C7R_ Trim + C6L_ Engine

Use Retrofit configuration:
C7R_ Trim + C6L_ Engine

Use Retrofit configuration:
C7R_ Trim + C6L_ Engine

* Not available for retrofitting luminaires with integral emergency battery.

Drivers

- Advance 0-10V 1% dimming
- 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 SDLC 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.

ENERGY STAR® exceptions

- Champagne Bronze and Black finishes

Labels and Listings

- cULus listed for wet locations
- ENERGY STAR® certified
- IBEW Union made (light engines & reflectors)

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

Medium/Wide

Light engine	Input volts	Input freq	Input current	Drive current	Input power	LED power	THD power	Power factor
C6L10_MZ10U	120V	50/60Hz	0.08	210 mA	9W	8W	<15%	>0.95
	277V		0.04				<20%	>0.95
C6L15_MZ10U	120V	50/60Hz	0.11	320 mA	15W	11W	<10%	>0.95
	277V		0.05				<15%	>0.95
C6L20_MZ10U	120V	50/60Hz	0.15	430 mA	19W	15W	<10%	>0.95
	277V		0.07				<15%	>0.95
C6L25_MZ10U	120V	50/60Hz	0.19	550 mA	23W	19W	<10%	>0.95
	277V		0.09				<15%	>0.95

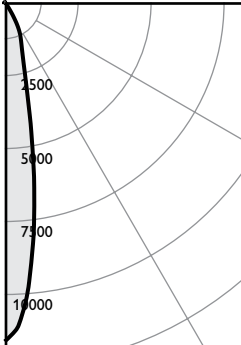
Lifetime (TM-21) data

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

C7L Calculite LED 7" gen 3

Round Retrofit

Narrow beam (0.3 s.c.), 2500lm Engine, 101.0 lm/w or 105.9 lm/W at 22.8W (Power over Ethernet)

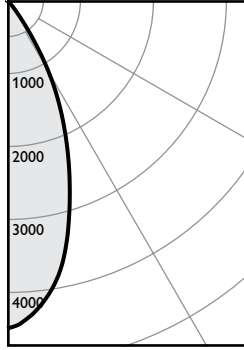
Candela Curve 	Zonal summary			Single unit data			Adjustment factors														
	Zone	Lumens	%Luminaire	Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*	Finish	CCT	Lumens												
	0-30	2193	90.8%	5'	463	1.5'	CL = 100%	80CRI 4000K = 103%	6000lm = 202%												
	0-40	2380	98.6%	6'	322	1.8'	CC = 95%	80CRI 3500K = 100%	4800lm = 192%												
	0-60	2412	99.9%	7'	236	2.1'	CD = 87%	80CRI 3000K = 95%	3500lm = 140%												
	0-90	2414	100.0%	8'	181	2.4'	CZ = 63%	80CRI 2700K = 93%	2500lm = 100%												
				9'	143	2.7'	WH = 87%	90CRI 3000K = 83%	2000lm = 80%												
							BK = 57%	90CRI 2700K = 78%	1500lm = 60%												
									1000lm = 40%												
Frame: C7RN Engine: C6L25835NZ10U Trim: C7RDLNMCL Output lumens: 2414 lms Input watts: 23.9 W CRI: 80 min CCT: 3500K Spacing Crit.: 0.3 Beam Angle: 20°	Angle	Mean CP	Lumens	* Beam diameter is where foot-candles drop to 50% of maximum.					Coefficients of utilization												
	0	11585							Ceiling	80%		70%		50%		30%		0%			
	5	9590	788						Wall	70	50	30	10	50	10	50	10	50	10	0	
	10	5675							RCR	Zonal cavity method - Effective floor reflectance = 20%											
	15	2794	837						Room Cavity Ratio	0	119	119	119	119	116	116	111	111	106	106	100
	20	1736	567							1	115	113	111	109	110	107	106	104	103	101	96
	25	1267								2	111	107	104	101	105	100	102	98	99	96	92
	30	738	188							3	107	102	98	95	100	94	98	93	96	91	89
	35	242								4	103	97	93	90	96	89	94	88	92	87	85
	40	92								5	100	93	89	86	92	85	91	85	89	84	82
	45	33	29							6	96	90	85	82	89	82	88	81	86	81	79
	50	7								7	93	86	82	79	86	78	85	78	84	78	76
	55	2	2							8	90	83	79	76	83	76	82	75	81	75	74
	60	2								9	88	80	76	73	80	73	79	73	78	72	71
	65	1	1						10	85	78	74	71	77	71	77	70	76	70	69	
	70	1																			
	75	1	1																		
	80	0																			
	85	1	1																		
	90	0																			
					38' x 38' x 10' Room, Workplane 2.5' above floor, 80/50/20% Reflectances																
					Efficacy: 101.0 lm/w Report#: F37146																

C7L Calculite LED 7" gen 3

Round Retrofit

Medium beam (0.7 s.c.), 2500lm Engine, 117.6 lm/w or 117.1 lm/W at 21.4W (Power over Ethernet)

Candela Curve



Frame: **C7RN**
Engine: **C6L25835MZ10U**
Trim: **C7RDLNMCL**

Output lumens: 2506 lms
Input watts: 21.3 W
CRI: 80 min
CCT¹: 3500K
Spacing Crit.: 0.7
Beam Angle: 44°

Zonal summary

Zone	Lumens	%Luminaire
0-30	2111	84.3%
0-40	2457	98.1%
0-60	2504	99.9%
0-90	2506	100.0%

Angle	Mean CP	Lumens
0	4494	
5	4292	397
10	3893	
15	3239	893
20	2493	
25	1807	821
30	1153	
35	513	346
40	168	
45	42	44
50	7	
55	2	3
60	2	
65	1	1
70	1	
75	0	0
80	0	
85	1	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	180	3.5'
6'	125	4.2'
7'	92	4.9'
8'	70	5.6'
9'	55	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'	116.3	0.94
6'	76.3	0.62
7'	54.5	0.44
8'	45.4	0.37
9'	36.3	0.30

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

Efficacy: **117.6 lm/w**
Report²: F37137

Adjustment factors

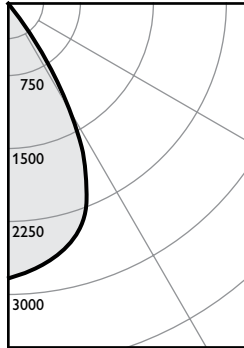
Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	6000lm = 240%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 97%	3500lm = 140%
CZ = 63%	80CRI 2700K = 87%	2500lm = 100%
WH = 87%	90CRI 3000K = 77%	2000lm = 80%
BK = 57%	90CRI 2700K = 73%	1500lm = 60%
		1000lm = 40%

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
Wall	70	50	30	10	50	10	50	10	50	10	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	109	106	105	102	102	99	95
	2	109	105	101	98	103	97	100	95	97	93	90
	3	105	99	94	91	98	90	95	89	93	87	85
	4	100	93	89	85	92	84	90	83	88	82	80
	5	96	88	83	79	88	79	86	78	84	78	76
	6	92	84	79	75	83	75	82	74	80	74	72
	7	88	80	74	71	79	71	78	70	77	70	68
	8	84	76	71	67	75	67	74	67	73	66	65
	9	81	72	67	64	72	63	71	63	70	63	62
10	78	69	64	61	69	60	68	60	67	60	59	

Medium beam (0.9 s.c.), 2500lm Engine, 110.0 lm/w or 109.4 lm/W at 21.4W (Power over Ethernet)

Candela Curve



Frame: **C7RN**
Engine: **C6L25835WZ10U**
Trim: **C7RDLNMCL**

Output lumens: 2342 lms
Input watts: 21.3 W
CRI: 80 min
CCT¹: 3500K
Spacing Crit.: 0.9
Beam Angle: 59°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1830	78.1%
0-40	2259	96.4%
0-60	2340	99.9%
0-90	2342	100.0%

Angle	Mean CP	Lumens
0	2826	
5	2766	261
10	2678	
15	2545	711
20	2318	
25	1924	858
30	1309	
35	647	428
40	270	
45	81	78
50	11	
55	3	4
60	2	
65	1	1
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'	113	4.5'
6'	79	5.4'
7'	58	6.3'
8'	44	7.2'
9'	35	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'	107.7	0.94
6'	70.7	0.62
7'	50.5	0.44
8'	42.1	0.37
9'	33.6	0.30

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

Efficacy: **115.2 lm/w**
Report²: F37143

Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 107%	6000lm = 240%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 99%	3500lm = 140%
CZ = 63%	80CRI 2700K = 93%	2500lm = 100%
WH = 87%	90CRI 3000K = 87%	2000lm = 80%
BK = 57%	90CRI 2700K = 81%	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	111	109	107	109	105	105	102	101	99	94
	2	109	104	100	97	102	96	99	94	96	92	88
	3	103	97	93	89	96	88	93	87	91	85	83
	4	98	91	86	82	90	82	88	81	86	80	77
	5	94	86	80	76	85	76	83	75	82	75	73
	6	89	81	75	71	80	71	79	70	77	70	68
	7	85	76	71	67	76	66	74	66	73	66	64
	8	81	72	66	63	72	62	71	62	70	62	60
	9	78	68	63	59	68	59	67	59	66	58	57
10	74	65	59	56	64	55	64	55	63	55	54	

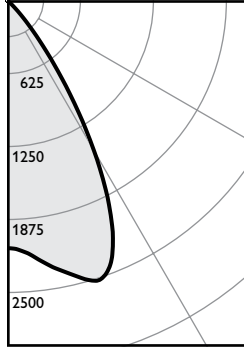
1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG 78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.

C7L Calculite LED 7" gen 3

Round Retrofit

Wide beam (1.0 s.c.), 2500lm Engine, 117.1 lm/w or 116.6 lm/W at 21.4W (Power over Ethernet)

Candela Curve



Frame: **C7RN**
Engine: **C6L25835MZ10U**
Trim: **C7RDLWCL**

Output lumens: 2495 lms
Input watts: 21.3 W
CRI: 80 min
CCT: 3500K
Spacing Crit.: 1.0
Beam Angle: 59°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1855	74.4%
0-40	2383	95.5%
0-60	2491	99.8%
0-90	2495	100.0%

Angle	Mean CP	Lumens
0	2123	
5	2180	213
10	2325	
15	2461	696
20	2486	
25	2128	947
30	1490	
35	823	527
40	354	
45	112	104
50	15	
55	4	5
60	3	
65	2	2
70	2	
75	1	1
80	1	
85	1	1
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	85	5.0'
6'	59	6.0'
7'	43	7.0'
8'	33	8.0'
9'	26	9.0'

* 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'	114.1	0.94
6'	74.8	0.62
7'	53.5	0.44
8'	44.6	0.37
9'	35.6	0.30

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

Efficacy: 117.1 lm/w
Report#: F37136

Adjustment factors

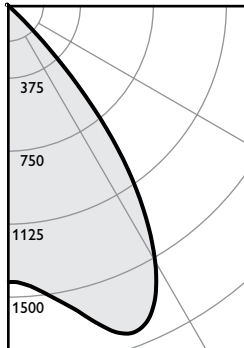
Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	6000lm = 240%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 97%	3500lm = 140%
CZ = 63%	80CRI 2700K = 87%	2500lm = 100%
WH = 87%	90CRI 3000K = 77%	2000lm = 80%
BK = 57%	90CRI 2700K = 73%	1500lm = 60%
		1000lm = 40%

Coefficients of utilization

Ceiling	80%				70%		50%		30%		0%	
Wall	70	50	30	10	50	10	50	10	50	10	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	111	108	106	109	105	105	101	101	98	94
	2	108	103	99	96	102	95	98	93	95	91	87
	3	103	96	92	88	95	87	92	86	90	84	81
	4	98	90	85	81	89	80	87	79	85	78	76
	5	93	84	79	74	83	74	82	73	80	73	71
	6	88	79	73	69	78	69	77	68	76	68	66
	7	84	74	68	64	74	64	72	64	71	63	62
	8	80	70	64	60	69	60	68	60	67	59	58
	9	76	66	60	56	66	56	65	56	64	56	54
10	72	62	57	53	62	53	61	53	60	52	51	

Wide beam (1.2 s.c.), 2500lm Engine, 109.7 lm/w or 109.2 lm/W at 21.4W (Power over Ethernet)

Candela Curve



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

Output lumens: 2336 lms
Input watts: 21.3 W
CRI: 80 min
CCT: 3500K
Spacing Crit.: 1.2
Beam Angle: 69°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1411	60.4%
0-40	2117	90.6%
0-60	2332	99.8%
0-90	2336	100.0%

Angle	Mean CP	Lumens
0	1426	
5	1454	142
10	1544	
15	1676	479
20	1798	
25	1751	791
30	1522	
35	1160	706
40	690	
45	224	207
50	25	
55	6	8
60	4	
65	3	3
70	2	
75	1	1
80	1	
85	1	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	57	6.0'
6'	40	7.2'
7'	29	8.4'
8'	22	9.6'
9'	18	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'	105.4	0.94
6'	69.1	0.62
7'	49.4	0.44
8'	41.2	0.37
9'	32.9	0.30

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

Efficacy: 109.7 lm/w
Report#: F37144

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	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	113	110	108	105	108	104	104	100	100	97	93
	2	107	102	98	94	100	93	97	91	94	89	85
	3	101	94	89	85	93	84	90	83	88	81	78
	4	95	87	81	77	86	76	84	75	82	75	72
	5	90	81	75	70	80	70	78	69	76	68	66
	6	85	75	69	64	74	64	73	63	71	63	61
	7	80	70	63	59	69	59	68	58	67	58	56
	8	76	65	59	54	65	54	64	54	62	54	52
	9	71	61	55	50	60	50	59	50	59	50	48
10	68	57	51	47	57	47	56	46	55	46	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.

