



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						<input type="checkbox"/>	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)		
	20 2000lm		35 3500K				
	25 2500lm		40 4000K				
	35 3500lm						

Trim

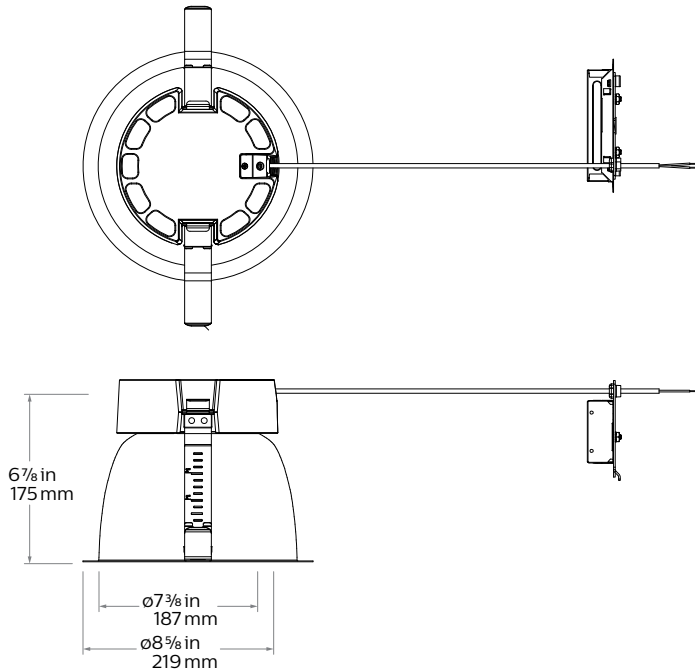
example: C7RDLNMCC

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

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 SDLCM 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/ODL120150930_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	L90 @ 60,000hrs.	L90 @ 60,000hrs.
1500lm		
2000lm		
2500lm		

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

Frame: **C7RN**
 Engine: **C6L25835NZ10U**
 Trim: **C7RDLNMCL**

Output lumens: 2414 lms
 Input watts: 23.9 W
 CRI: 80 min
 CCT¹: 3500K
 Spacing Crit.: 0.3
 Beam Angle: 20°

Zonal summary

Zone	Lumens	%Luminaire
0-30	2193	90.8%
0-40	2380	98.6%
0-60	2412	99.9%
0-90	2414	100.0%

Angle	Mean CP	Lumens
0	11585	
5	9590	788
10	5675	
15	2794	837
20	1736	
25	1267	
30	738	567
35	242	
40	92	188
45	33	
50	7	29
55	2	2
60	2	
65	1	1
70	1	
75	1	1
80	0	
85	1	1
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	463	1.5'
6'	322	1.8'
7'	236	2.1'
8'	181	2.4'
9'	143	2.7'

* 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'	114.1	1.06
6'	74.9	0.70
7'	53.5	0.50
8'	44.6	0.41
9'	35.6	0.33

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

Efficacy: 101.0 lm/w
 Report#: F37146

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	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	115	113	111	109	110	107	106	104	103	101	96
	2	111	107	104	101	105	100	102	98	99	96	92
	3	107	102	98	95	100	94	98	93	96	91	89
	4	103	97	93	90	96	89	94	88	92	87	85
	5	100	93	89	86	92	85	91	85	89	84	82
	6	96	90	85	82	89	82	88	81	86	81	79
	7	93	86	82	79	86	78	85	78	84	78	76
	8	90	83	79	76	83	76	82	75	81	75	74
	9	88	80	76	73	80	73	79	73	78	72	71
	10	85	78	74	71	77	71	77	70	76	70	69

Narrow beam (0.6 s.c.), 2500lm Engine, 95.5 lm/w or 100.1 lm/W at 22.8W (Power over Ethernet)

Candela Curve

Frame: **C7RN**
 Engine: **C6L25835NZ10U**
 Trim: **C7RDLWCL**

Output lumens: 2283 lms
 Input watts: 23.9 W
 CRI: 80 min
 CCT¹: 3500K
 Spacing Crit.: 0.6
 Beam Angle: 35°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1956	85.6%
0-40	2170	95.0%
0-60	2276	99.7%
0-90	2283	100.0%

Angle	Mean CP	Lumens
0	5763	
5	5234	469
10	4320	
15	3368	918
20	2272	
25	1203	569
30	543	
35	319	215
40	250	
45	128	99
50	21	
55	6	7
60	4	
65	3	3
70	3	
75	2	2
80	2	
85	2	2
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	231	3.0'
6'	160	3.6'
7'	118	4.2'
8'	90	4.8'
9'	71	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'	106.5	1.06
6'	69.9	0.70
7'	49.9	0.50
8'	41.6	0.41
9'	33.3	0.33

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

Efficacy: 95.5 lm/w
 Report#: F37147

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	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	110	108	110	106	106	103	102	100	95
	2	110	105	102	99	104	98	101	96	98	94	90
	3	105	100	95	92	98	91	96	90	93	88	86
	4	101	95	90	86	93	86	91	85	89	84	81
	5	97	90	85	81	89	81	87	80	86	80	78
	6	93	86	81	77	85	77	83	76	82	76	74
	7	90	82	77	73	81	73	80	73	79	72	71
	8	86	78	73	70	78	70	77	69	76	69	68
	9	83	75	70	67	75	67	74	66	73	66	65
	10	80	72	67	64	72	64	71	64	70	63	62

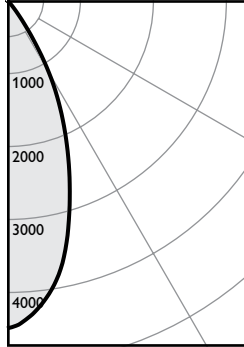
1. Correlated Color Temperature within specs as defined in ANSI_NEMA_ANSLG C78.377-2008: Specifications for the Chromaticity of Solid State Lighting Products.
 2. Tested using absolute photometry as specified in LM79: IESNA Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products.

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
 Report#: F37137

Adjustment factors

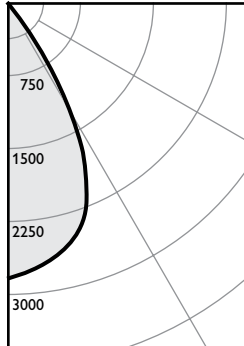
Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 102%	6000lm = 240%
CC = 95%	80CRI 3500K = 100%	4800lm = 192%
CD = 87%	80CRI 3000K = 97%	3500lm = 140%
CZ = 63%	80CRI 2700K = 87%	2500lm = 100%
WH = 87%	90CRI 3000K = 77%	2000lm = 80%
BK = 57%	90CRI 2700K = 73%	1500lm = 60%
		1000lm = 40%

Coefficients of utilization

Ceiling	80%		70%		50%		30%		0%			
Wall	70	50	30	10	50	10	50	10	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	99	95
2	109	105	101	98	103	97	100	95	97	93	90	85
3	105	99	94	91	98	90	95	89	93	87	85	80
4	100	93	89	85	92	84	90	83	88	82	80	76
5	96	88	83	79	88	79	86	78	84	78	76	72
6	92	84	79	75	83	75	82	74	80	74	72	68
7	88	80	74	71	79	71	78	70	77	70	68	64
8	84	76	71	67	75	67	74	67	73	66	65	61
9	81	72	67	64	72	63	71	63	70	63	62	58
10	78	69	64	61	69	60	68	60	67	60	59	55

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
 Report#: 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	0		
RCR	Zonal cavity method - Effective floor reflectance = 20%										
Room Cavity Ratio	0	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 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.

