



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: C4L15835WZ10UR

Series	Lumens	CRI	CCT	Beam	Dimming	Voltage	Voltage
C4L						<input type="checkbox"/>	<input type="checkbox"/>
C4L Calculite LED 4"	05 500lm	8 80 CRI	27 2700K	N Narrow (43°) M Medium (56°) W Wide (76°)	Z10 0-10V 1%	U Universal 120/277V	R Retrofit RH Retrofit for tall collar or square frame ¹
	10 1000lm		30 3000K				
	15 1500lm		35 3500K		E ELV	1 120V	
	20 2000lm		40 4000K				
25 2500lm							

Trim

example: C4RDLCCP

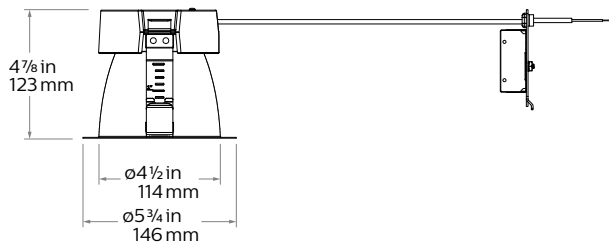
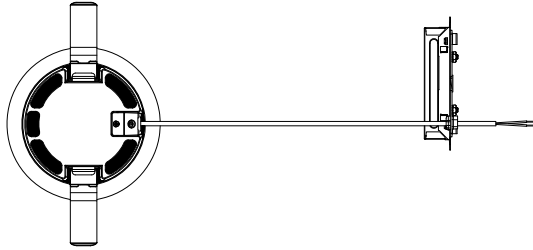
Series	Aperture	Style	Finish			Flange	
C4	<input type="checkbox"/>	<input type="checkbox"/>					
C4 Calculite LED 4"	R Round	DL Downlight	BK Black (matte)	CC Comfort clear	CD Comfort clear diffuse	- White (matte)	
			CL Specular clear	CZ Champagne bronze		P Polished	
		WH White (matte)			- White (matte)		
		WW Wall wash	BK Black (matte)	CC Comfort clear	CD Comfort clear diffuse	CZ Champagne bronze	- White (matte)
	CL Specular clear		CD Comfort clear diffuse	P Polished			
	WH White (matte)			- White (matte)			
	S Square	DLW Downlight (wide beam)	BK Black (matte)	CC Comfort clear	CD Comfort clear diffuse	CZ Champagne bronze	- White (matte)
			CL Specular clear	CD Comfort clear diffuse			P Polished
WH White (matte)			- White (matte)				
LW Wall wash		BK Black (matte)	CC Comfort clear	CD Comfort clear diffuse	CZ Champagne bronze	- White (matte)	
	CL Specular clear	CD Comfort clear diffuse	P Polished				
WH White (matte)			- White (matte)				

1. See page 2 for different round frame collar height details, use RH for tall collar frame or square frame.

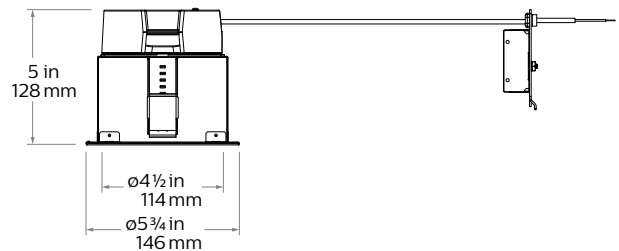
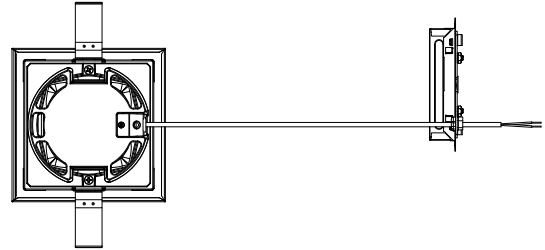
C4L Calculite LED 4" gen 3

Round/Square Retrofit

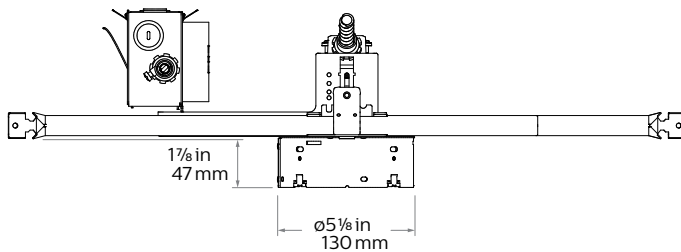
Retrofit (R) with round trim



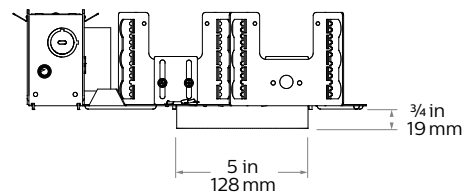
Retrofit (R) with square trim



Round tall collar frame (RH type light engine required)



Round standard steel frame (R type light engine required)



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.

C4L Calculite LED 4" gen 3

Round/Square Retrofit

Compatibility

Frames

With CFL:
S4118_series

With INC:
AS400_series

With LED:
C4L_N series
C4X4L_N series
P4RD_N_series

Engines

Use Retrofit configuration:
C4R_ Trim + C4L_ Engine

Use Retrofit configuration:
C4R_ Trim + C4L_ Engine

Use Retrofit configuration:
C4R_ Trim + C4L_ Engine
C4S_ Trim + C4L_ Engine
C4R_ Trim + C4L_ 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 SDGM 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

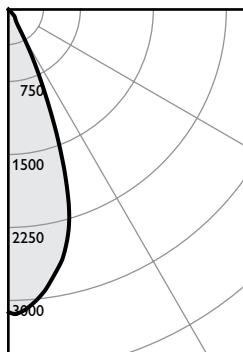
Light engine	Input volts	Input freq	Input current	Drive current	Input power	LED power	THD power	Power factor
C6L10_MZ10U	120V	50/60Hz	0.08	210 mA	9W	8W	<15%	>0.95
	277V		0.04				<20%	>0.95
C6L15_MZ10U	120V	50/60Hz	0.11	320 mA	15W	11W	<10%	>0.95
	277V		0.05				<15%	>0.95
C6L20_MZ10U	120V	50/60Hz	0.15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

Narrow beam, 1500lm Engine, 103.8 lm/W at 14.7W or 112.2 lm/W at 13.6W (Power over Ethernet)

Candela Curve



Frame: **C4RN**
Engine: **C4L15835NZ10U**
Trim: **C4RDLC**

Output lumens: 1526 lms
Input watts: 14.7 W
CRI: 80 min
CCT: 3500K
Spacing Crit.: 0.6
Beam Angle: 43°

Zonal summary

Zone	Lumens	%Luminaire
0-30	1354	88.7%
0-40	1469	96.3%
0-60	1526	100.0%
0-90	1526	100.0%

Angle	Mean CP	Lumens
0	3112	
5	3044	282
10	2785	
15	2410	652
20	1672	
25	837	420
30	324	
35	163	115
40	128	
45	77	57
50	0	
55	0	0
60	0	
65	0	0
70	0	
75	0	0
80	0	
85	0	0
90	0	

Single unit data

Height to lighted plane	Initial center beam foot-candles	Beam diameter (ft)*
5'	124	3.0'
6'	86	3.6'
7'	64	4.2'
8'	49	4.8'
9'	38	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'	71.3	0.65
6'	46.8	0.43
7'	33.4	0.31
8'	27.8	0.25
9'	22.3	0.20

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

Efficacy: 103.8lm/w
Report#: T20161390

Adjustment factors

Finish	CCT	Lumens
CL = 100%	80CRI 4000K = 107%	3000lm = 200%
CC = 95%	80CRI 3500K = 100%	2500lm = 167%
CD = 87%	80CRI 3000K = 99%	2000lm = 133%
CZ = 63%	80CRI 2700K = 93%	1500lm = 100%
WH = 87%	90CRI 3000K = 87%	1000lm = 67%
BK = 57%	90CRI 2700K = 81%	500lm = 33%

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	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	101	101	106	106	103	103	102	100	95	
1	114	112	110	108	110	106	106	106	103	102	98	98	96	96	96	96	96	94	89	86	
2	110	106	102	99	104	98	98	98	96	94	92	92	92	92	92	92	92	90	84	82	
3	105	100	96	92	99	92	92	92	92	92	92	92	92	92	92	92	92	90	84	82	
4	101	95	90	87	94	86	86	86	86	86	86	86	86	86	86	86	86	84	80	78	
5	97	90	85	82	89	81	81	81	81	81	81	81	81	81	81	81	81	80	78	74	
6	93	86	81	77	85	77	77	77	77	77	77	77	77	77	77	77	77	76	74	74	
7	90	82	77	74	81	73	73	73	73	73	73	73	73	73	73	73	73	73	73	71	
8	86	79	74	70	78	70	70	70	70	70	70	70	70	70	70	70	70	70	69	68	
9	83	75	70	67	75	67	67	67	67	67	67	67	67	67	67	67	67	67	66	65	
10	80	72	67	64	72	64	64	64	64	64	64	64	64	64	64	64	64	64	64	62	

