



Calculite White LED 7" High Ceiling

Professional-grade downlighting
Downlight and Cylinder



PHILIPS
LIGHTOLIER

Calculite White LED High Ceiling

Always reaching higher.

The Product team at Philips Lightolier has a never ending commitment to providing the best combination of technology and product design specifically tailored for professional lighting needs. The Calculite White LED High Ceiling product family continues to set the bar in performance and architectural lighting sophistication. Utilizing a discrete single uniform area of brightness emitted from a single mixing chamber, which is a signature of Calculite White LED, the High Ceiling family delivers unparalleled performance.

The Philips designed 8000lm light engine is shielded (as always) by a precisely contoured parabolic finishing section that restricts view of the source of illumination from direct and reflected views. The recessed and cylinder luminaires deliver a nominal 6,000 lumens with an unprecedented 85 to 89 lumens per watt ratio. Both the recessed downlight and the cylinders provide choices of narrow, medium and wide spacing criteria.

High Ceiling cylinder and downlight



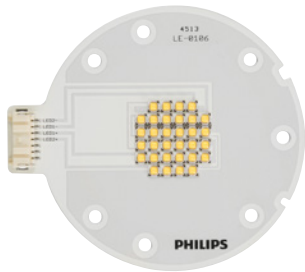
Setting the bar again.

Calculite White LED 7"

High Ceiling cylinder

Cylinders

Calculite White LED Cylinders feature a state-of-the-art LED array precisely controlled in the single mixing chamber and delivered in a single area of brightness via the optical film. The new technology and design configuration in Calculite White LED ensure a consistent color point between luminaires.



Calculite White LED High Ceiling cylinder and downlight fixtures both feature an array of 32 high brightness LED's.

Features

Input wattage:

69 W (+/- 5%)

Cylinder housing:

Suitable for mounting over 3" or 4" outlet box.

Mounting capabilities:

Ceiling, wall or track.

Reflector cone:

Aluminum. Provides 50° cutoff to source & source image. Self-flanged.

Optical mixing chamber:

Redirects back-reflected light through aperture resulting in 20% increase in efficiency.

Thermal management:

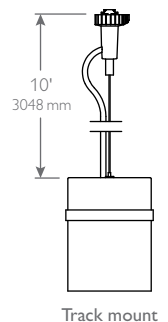
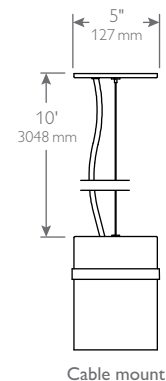
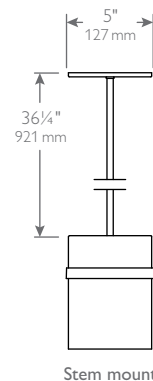
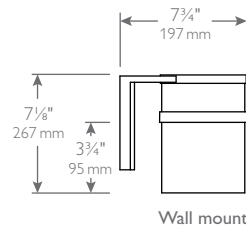
Heat sink and thermal design along with clean room assembly ensures specified performance. 35° C maximum ambient environment.

Rated life:

60,000 hours at 70% lumen maintenance. Calculated using LM80 data and TM21 procedures.

Mounting

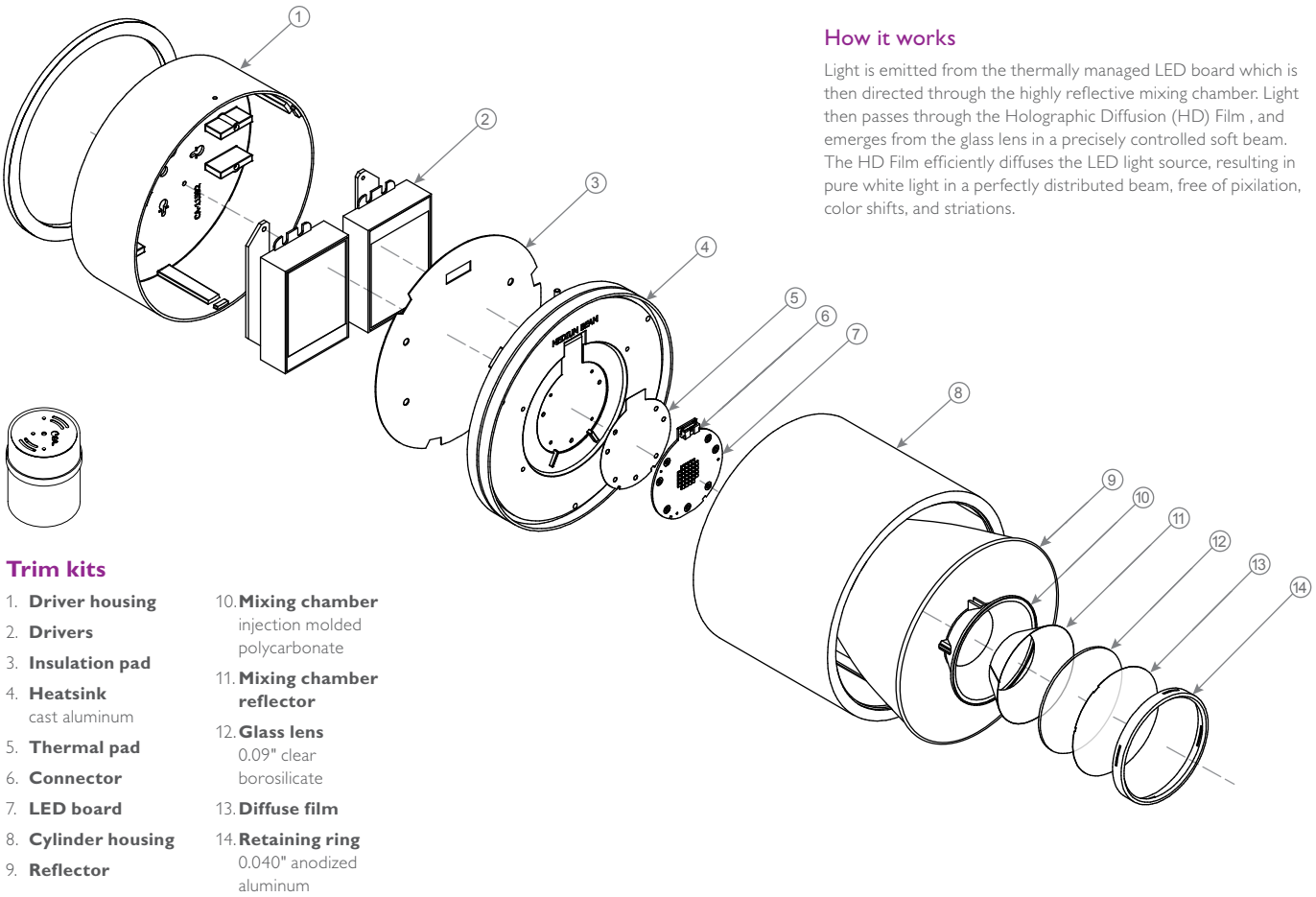
All fixture configurations include a ceiling mount.



Labels

cULus, I.B.E.W.
Suitable for wet locations (direct ceiling and wall mount only).
5 year limited warranty.

High Ceiling cylinder



How it works

Light is emitted from the thermally managed LED board which is then directed through the highly reflective mixing chamber. Light then passes through the Holographic Diffusion (HD) Film, and emerges from the glass lens in a precisely controlled soft beam. The HD Film efficiently diffuses the LED light source, resulting in pure white light in a perfectly distributed beam, free of pixilation, color shifts, and striations.

Trim kits

- 1. **Driver housing**
- 2. **Drivers**
- 3. **Insulation pad**
- 4. **Heatsink**
cast aluminum
- 5. **Thermal pad**
- 6. **Connector**
- 7. **LED board**
- 8. **Cylinder housing**
- 9. **Reflector**
- 10. **Mixing chamber**
injection molded polycarbonate
- 11. **Mixing chamber reflector**
- 12. **Glass lens**
0.09" clear borosilicate
- 13. **Diffuse film**
- 14. **Retaining ring**
0.040" anodized aluminum

Fixture

example: C7L50CW35KMCCLUVB

Series	Lumens	Style	Finish	CCT	Dimming	Beam	Reflector	Voltage	Version
C7L	50	C						U	VB
C7L Calculite 7" LED round aperture	50 6000lm	C Cylinder	B Black W White A Alum.	27K 2700K 30K 3000K 35K 3500K 40K 4000K	Z10V 0-10V LD Lutron	N Narrow, 20° 0.3 s.c. M Medium, 55° 0.8 s.c. W Wide, 70° 1.1 s.c.	CL Clear CCL Comfort clear CCD Comfort clear diffuse	U Universal 120V/277V	VB Version B

Mounting kit

example: C4CPA

Series	Details	Finish	Dimming
C4 Mounting for Calculite 7" LED Cylinder	CP Stem mount CC Cable mount ¹	B Black W White A Alum.	X5 For dimming applications
C7 Mounting for Calculite 7" LED Cylinder	CW Wall mount		
TM Mounting for Calculite 7" Cylinders to track	01 Track mount		

1. Holds aircraft cable. Chrome adjusting hardware for leveling.

Calculite White LED 7"

High Ceiling downlight

Downlights

Calculite White LED Downlights feature a state-of-the-art LED array precisely controlled in the single mixing chamber and delivered in a single area of brightness via the optical film. The new technology and design configuration in Calculite White LED ensure a consistent color point between luminaires.



Calculite White LED High Ceiling cylinder and downlight fixtures both feature a heatsink and thermal design along with the clean room assembly process ensures specified performance levels are maintained.



Features

Ceiling cutout:

7" aperture; 8" (203mm). See drawings for details.

Power connection:

Attaches to light engine via push-in connector (on frame). Removable cover provides access.

Junction box:

Allows inspection from below.

Thermal protector:

Meets NEC & UL requirements. Do not install insulation above or within 3" of luminaire.

Rated life:

58,000 hours at 70% lumen maintenance.
Calculated using LM80 data and TM21 procedures.

Options and accessories

Dimming capability:

0-10V or Lutron dimming.
See LED-DIM specification sheet.

Emergency capability:

Inverter; See LED-LMI specification sheet.
Integral; See LED-EM spec sheet (add "EM" suffix).

Sloped ceilings:

Compatible with slope ceiling adaptors.
See specification sheet SCA.
Round apertures require SCAHID accessory.

Mounting bars¹:

1950-18" (set of 2) 1951-27" (set of 2)

T-Bar anchor clips¹:

1956 (set of 4), for use with above.

Frame-in kit

Mounting frame:

Galvanized stamped steel for dry or plaster ceilings.

Vertical adjustment:

Light engine adjusts in frame below ceilings up to 1 1/8".

Mounting brackets:

Galvanized Steel. Adjustable through aperture.
Use 3/4" or 1 1/2" lathing channel, 1/2" EMT or optional mounting bars.

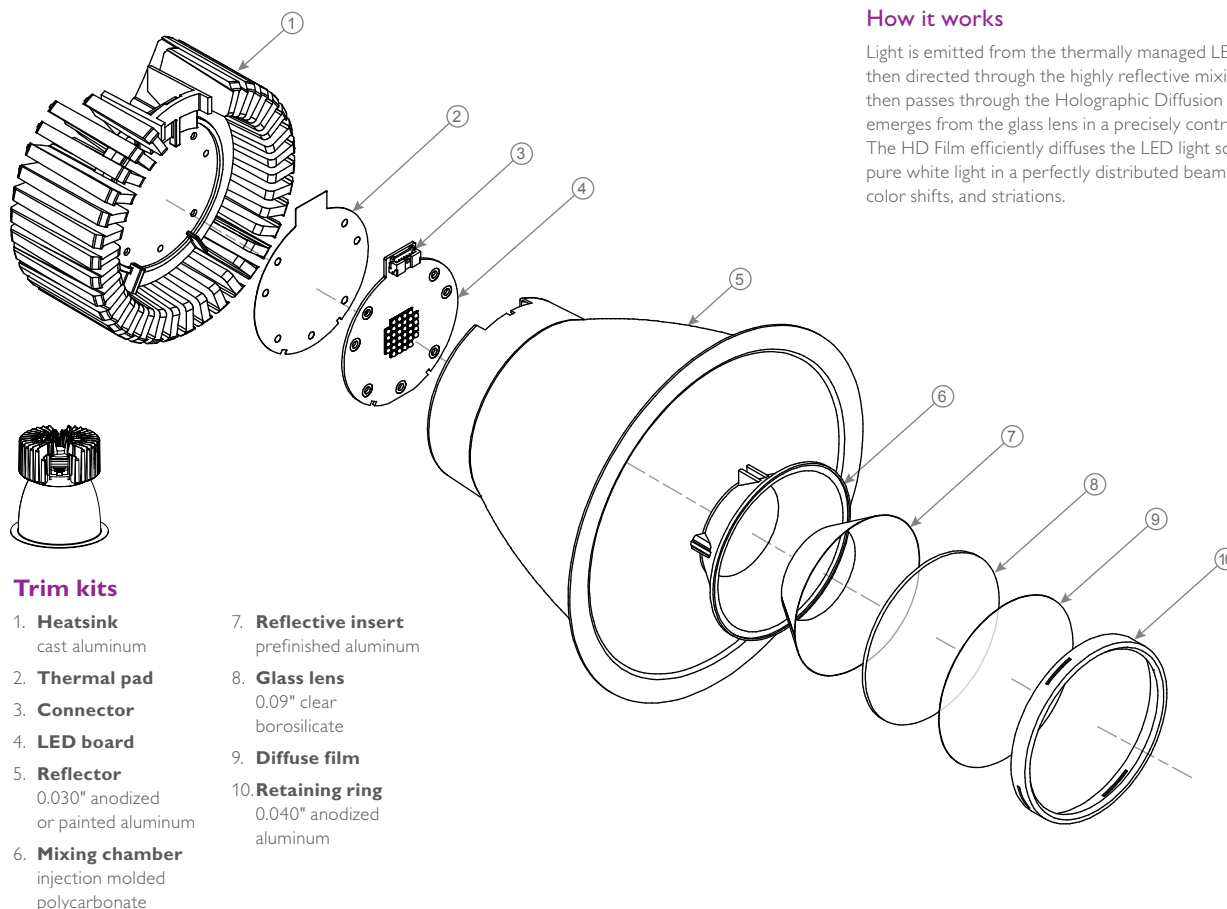
Labels

cULus, I.B.E.W.

Suitable for wet locations.

5 year limited warranty.

High Ceiling downlight



How it works

Light is emitted from the thermally managed LED board which is then directed through the highly reflective mixing chamber. Light then passes through the Holographic Diffusion (HD) Film, and emerges from the glass lens in a precisely controlled soft beam. The HD Film efficiently diffuses the LED light source, resulting in pure white light in a perfectly distributed beam, free of pixilation, color shifts, and striations.

Frame-in Kit

example: C7L50CW35KMCCLUVB

Series	Lumens	Installation	Voltage	Version	Dimming	Options
C7L	50	N		VB		EM
C7L Calculite 7" LED round aperture	50 6000lm	N New construction	1 120V 2 277V	VB Version B	Z10V 0-10V dimming LD Lutron dimming	EM Emergency ¹

Trim kit

example: C7L50DL35KWCCDPVB

Series	Lumens	Style	CCT	Beam	Reflector	Flange	Version ¹
C7L	50	DL					VB
C7L Calculite 7" LED round aperture	50 6000lm	DL Downlight	27K 2700K 30K 3000K 35K 3500K 40K 4000K	N Narrow, 20° 0.3 s.c. M Medium, 55° 0.8 s.c. W Wide, 70° 1.1 s.c.	CL Clear CCL Comfort clear CCD Comfort clear diffuse CCZ Champagne bronze WH White (painted)	W White (painted) P Polished (matches aperture) FT Flangeless (flush-mount) ²	VB Version B

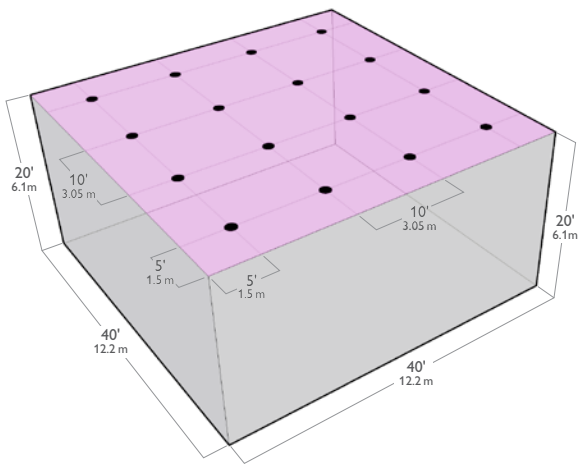
- Consult LED-EM spec sheet for **EM** option details and restrictions.
- Accessory **CA7FMR** required for gypsum applications (minimal 1/4" reflector flange).



CA7FMRLED
Flangeless trim with plaster ring accessory.
(Recommended for gypsum installations)

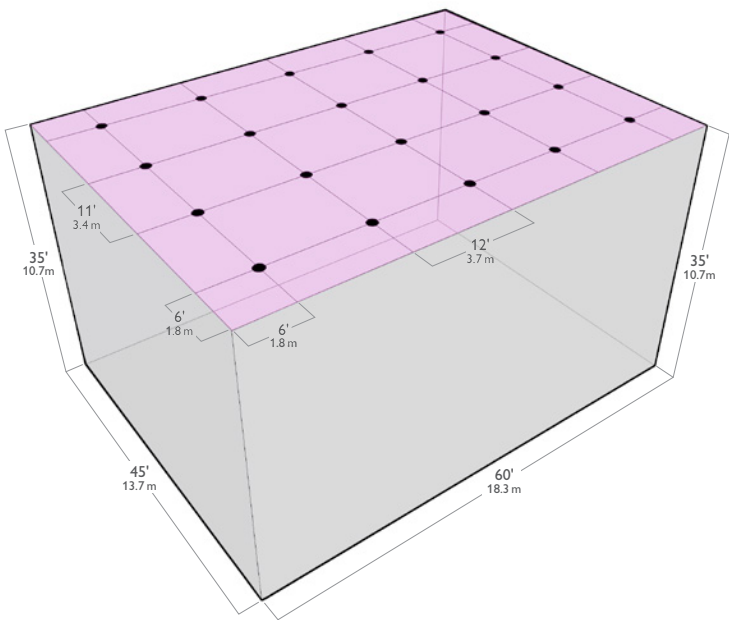
Calculite White LED 7"

High Ceiling layouts



Calculite LED High Ceiling vs Metal Halide

Testing Results	Calculite Metal Halide 150W ¹	Calculite White LED High Ceiling ²
Luminaire Number	16 fixtures	16 fixtures
Spacing (LxW)	10 x 10	10 x 10
Spacing Criteria	0.9 x 0.9	0.8 x 0.8
Initial Illuminance	58 fc (avg.)	52 fc (avg.)
Fixture Lumens	6869 lm	5963 lm
Watts per Sq.Ft.	1.65 w/sq.ft.	0.692 w/sq.ft.
Fixture Wattage	165 w	69 w
Layout Wattage	2640 w	1104 w
Lumens per Watt	42 lm/w	86 lm/w



Calculite LED High Ceiling vs Competitor LED

Testing Results	Typical High Lumen LED ³	Calculite White LED High Ceiling ²
Luminaire Number	20 fixtures	20 fixtures
Spacing (LxW)	11 x 12	11 x 12
Spacing Criteria	0.34 x 0.36	0.34 x 0.34
Initial Illuminance	41 fc (avg.)	41 fc (avg.)
Fixture Lumens	6245 lm	6174 lm
Watts per Sq.Ft.	0.707 w/sq.ft.	0.514 w/sq.ft.
Fixture Wattage	95 w	69 w
Layout Wattage	1900 w	1380 w
Lumens per Watt	65 lm/w	89 lm/w

1. Comparison uses frame-in kit **C7E17OVMCLW** with **C715MH0E1** trim kit.
2. Comparison uses frame-in kit **C7L50N1VBZ10V** with **C7L50DL35KMCLWVB** trim kit.
3. Based on the typical High Lumen LED downlight currently available on the market.

High Ceiling layouts



Real world applications, made better.

Calculite White LED 7"

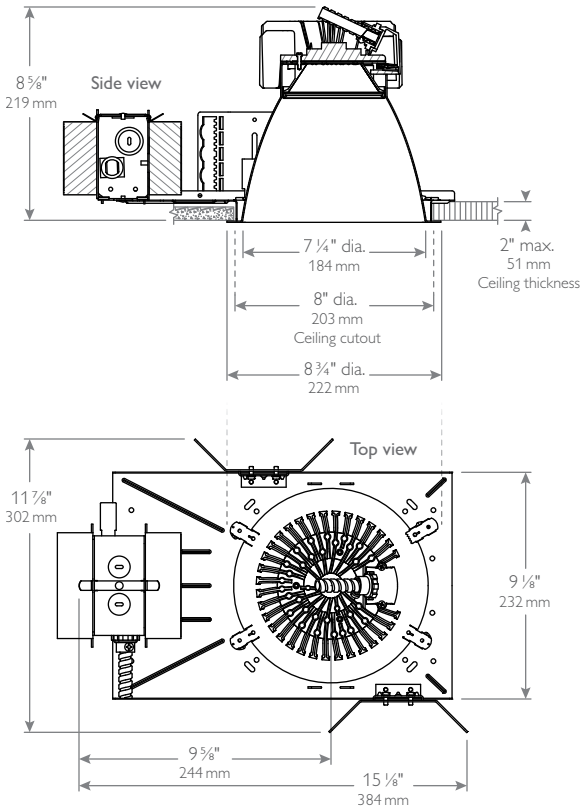
High Ceiling downlight



Medium beam
Trim kit height is 8 1/4" (210mm)



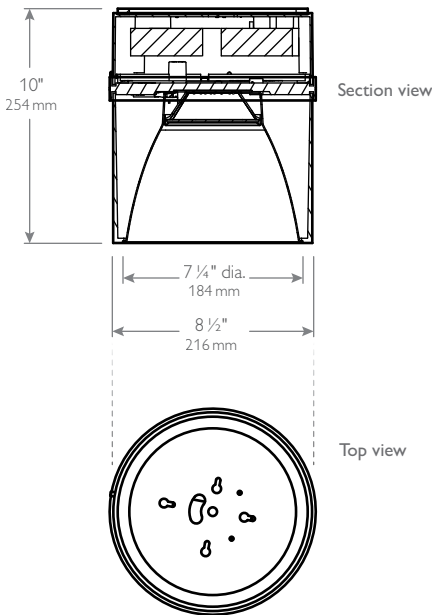
Wide beam
Trim kit height is 8" (203mm)



High Ceiling cylinder



Fixture height is 10" (254mm)



High Ceiling finishes and flanges

Finish options



CL Clear

Most specular and therefore most efficient finish, delivers maximum photometric performance but can produce a mirror image effect of the interior space.



CCL Comfort Clear

Slightly diffuse clear finish, which eliminates iridescence and reduces the mirror image effect inherent with specular finishes.



CCD Comfort Clear Diffuse

Semi-specular finish that softens the light at the source of the reflector and creates a subtle, even luminance from the reflector cone.



CCZ Bronze

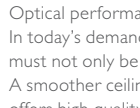
Semi-specular finish that softens the light at the source of the reflector while providing a warmer reflector appearance (light output is slightly warmer).



WH White

Brightest aperture when illuminated and provides the smoothest transition to most ceilings when off (white is only available with a white flange).

Flange options



P Polished

Produces a continuous look throughout the reflector (aperture matching).



W White (matte)

Provides the smoothest transition to ceilings when off.

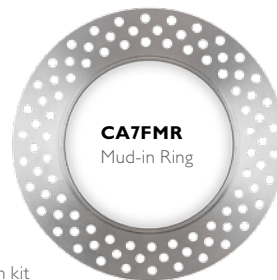


FT Flangeless

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

Flangeless accessory ring

Low profile, machined aluminum mud-in ring provides a raised rib to plaster up to and a 3/16" flange thickness. The ring is attached to the ceiling material as opposed to the frame-in kit to avoid conduction of heat and vibration which can cause yellowing or cracking of the plaster.



After the frame-in kit is installed, the mud-in ring is inserted into the ceiling opening and the flange is plastered over, feathered, sanded and finished.



The end result is a clean inconspicuous appearance with a flush, virtually seamless transition from aperture to ceiling.

High Ceiling photometry

7" • 20° Narrow beam

Downlight Frame-in Kit:
C7L50N1VBZ10V

Cylinder:
C7L50CW35KNCLUVB

Downlight Trim kit:
C7L50DL35KNCLWVB

CCT ¹ : 3500K	
CRI: 80 min	
Lumen output: 6174 lms	7500
Input watts ² : 69.4 W	
Efficacy: 89.0 lm/w	15000
Spacing crit.: 0.3	
Beam spread: 20° Narrow	
Report no ³ : 327GFR	22500
Multiple unit data⁴	30000

Spacing on center	Initial center beam foot-candles	Watts per sq. ft.
5'	294	3.08
6'	193	2.02
7'	138	1.44
8'	115	1.20
9'	92	0.96

7" • 55° Medium beam

Downlight Frame-in Kit:
C7L50N1VBZ10V

Cylinder:
C7L50CW35KMCLUVB

Downlight Trim kit:
C7L50DL35KMCLWVB

CCT ¹ : 3500K	
CRI: 80 min	
Lumen output: 5963 lms	2000
Input watts ² : 69.2 W	
Efficacy: 86.2 lm/w	4000
Spacing crit.: 0.8	
Beam spread: 55° Medium	
Report no ³ : 329GFR	6000
Multiple unit data⁴	8000

Spacing on center	Initial center beam foot-candles	Watts per sq. ft.
5'	276	3.07
6'	181	2.01
7'	129	1.44
8'	108	1.20
9'	86	0.96

7" • 70° Wide beam

Downlight Frame-in Kit:
C7L50N1VBZ10V

Cylinder Fixture:
C7L50CW35KWCLUVB

Downlight Trim kit:
C7L50DL35KWCLWVB

CCT ¹ : 3500K	
CRI: 80 min	
Lumen output: 5889 lms	1250
Input watts ² : 69.2 W	
Efficacy: 85.1 lm/w	2500
Spacing crit.: 1.1	
Beam spread: 70° Wide	
Report no ³ : 328GFR	3750
Multiple unit data⁴	5000

Spacing on center	Initial center beam foot-candles	Watts per sq. ft.
5'	268	3.07
6'	176	2.01
7'	125	1.44
8'	105	1.20
9'	84	0.96

NOTE: All Downlight photometry also applies to Cylinders.

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. Wattage controlled to within 5%.

3. Tested using absolute photometry as specified in LM79: IESNA approved method for the electrical and photometric measurements of solid state lighting products.
4. RCR 2: 38"x38"x10' room, workplane 2 1/2' above floor, 80/50/20% reflectances.



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