



# 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



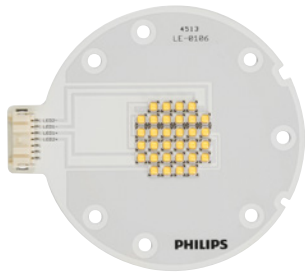
Setting the bar again.

# 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:**

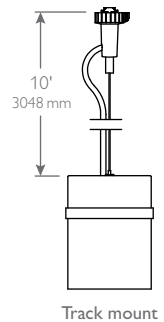
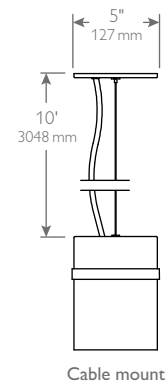
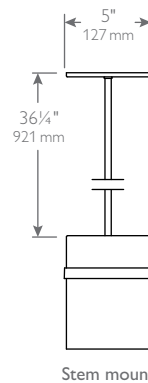
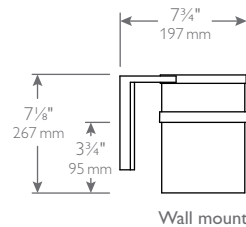
Heat sink and thermal design along with clean room assembly ensures specified performance. 35°C maximum ambient environment.

**Rated life:**

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

### Mounting

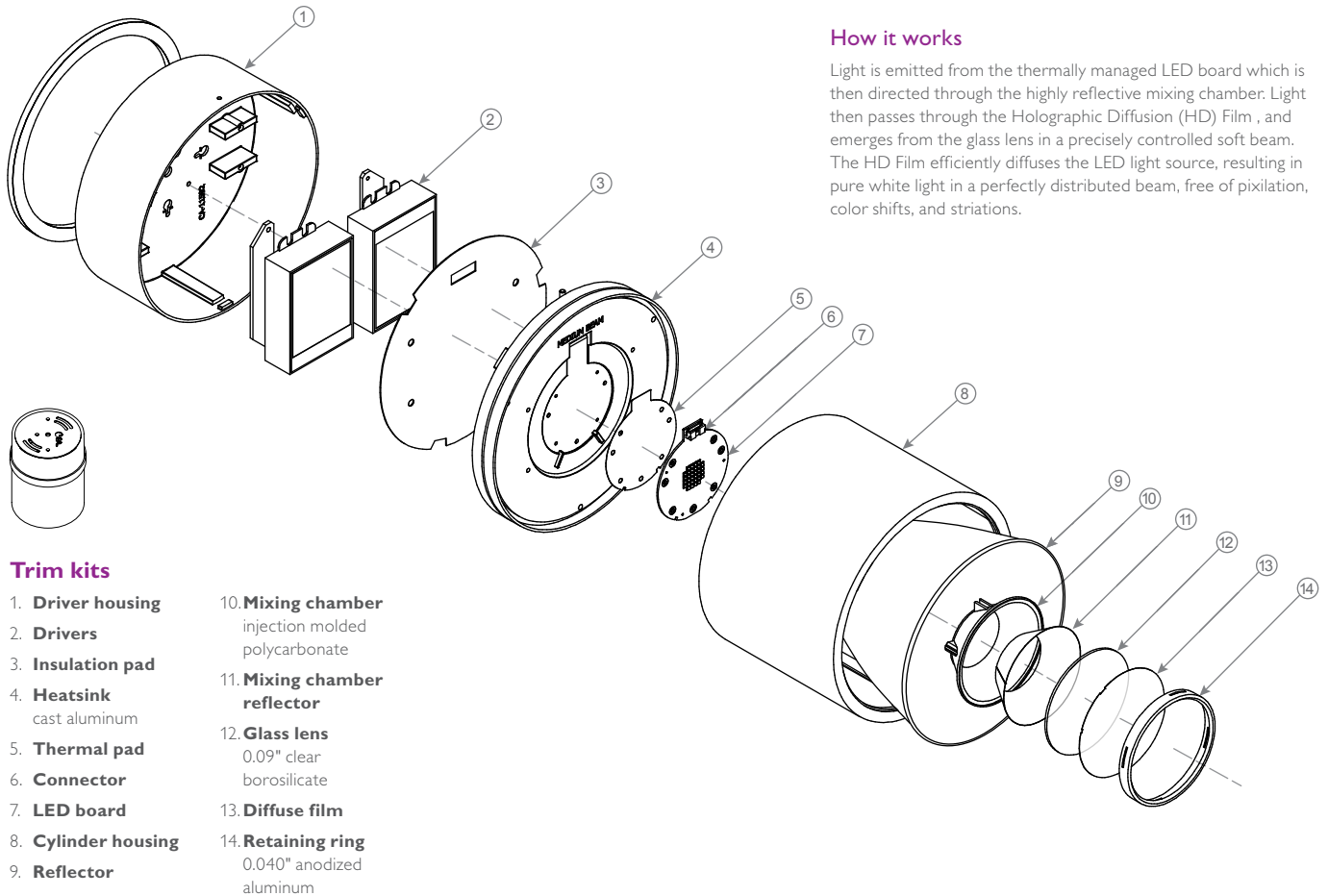
All fixture configurations include a ceiling mount.



### 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: C7L50CW35KMCLLUVB

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

### Mounting kit

example: C4CPA

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

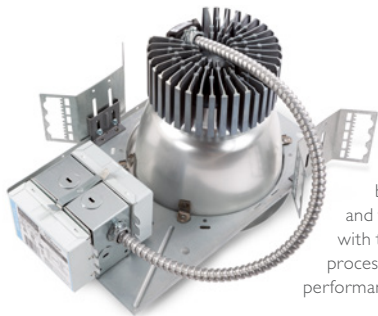
1. Holds aircraft cable. Chrome adjusting hardware for leveling.

# 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 bars<sup>1</sup>:**

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

**T-Bar anchor clips<sup>1</sup>:**

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".

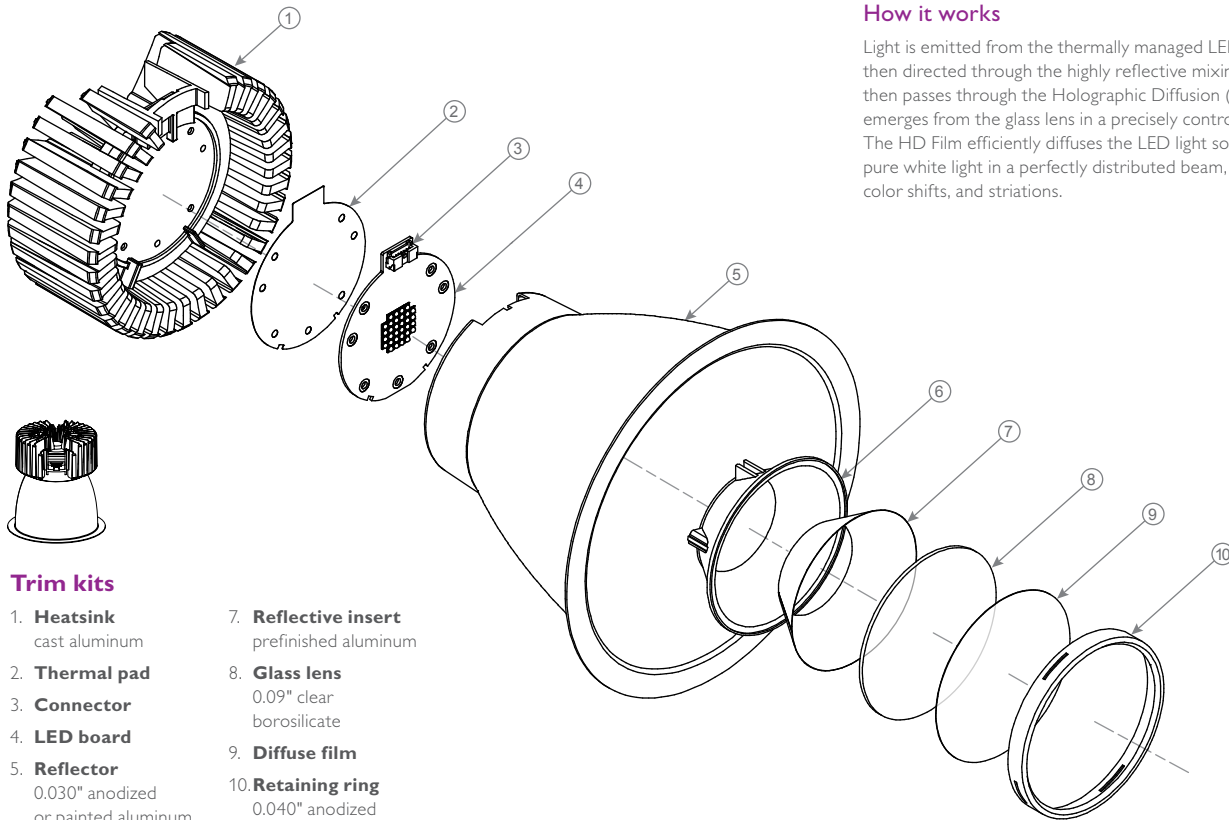
**Mounting brackets:**

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

### Labels

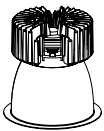
cULus, I.B.E.W.  
Suitable for wet locations.  
5 year limited warranty.

## 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.



### Trim kits

- 1. **Heatsink**  
cast aluminum
- 2. **Thermal pad**
- 3. **Connector**
- 4. **LED board**
- 5. **Reflector**  
0.030" anodized or painted aluminum
- 6. **Mixing chamber**  
injection molded polycarbonate
- 7. **Reflective insert**  
prefinished aluminum
- 8. **Glass lens**  
0.09" clear borosilicate
- 9. **Diffuse film**
- 10. **Retaining ring**  
0.040" anodized aluminum

### Frame-in Kit

example: C7L50CW35KMCCLUVB

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

### Trim kit

example: C7L50DL35KWCCDPVB

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

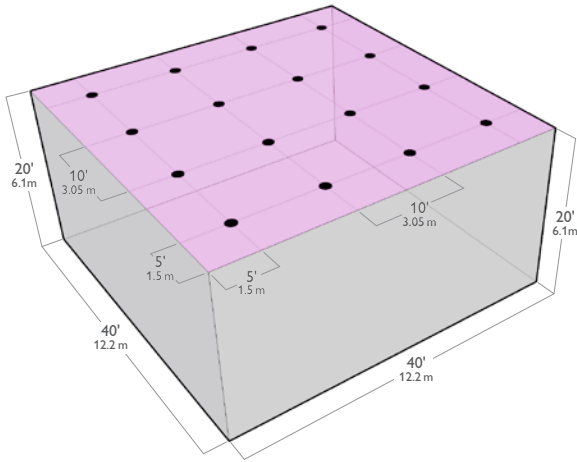
- 1. Consult LED-EM spec sheet for **EM** option details and restrictions.
- 2. Accessory **CA7FMR** required for gypsum applications (minimal 1/4" reflector flange).



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

# Calculite White LED 7"

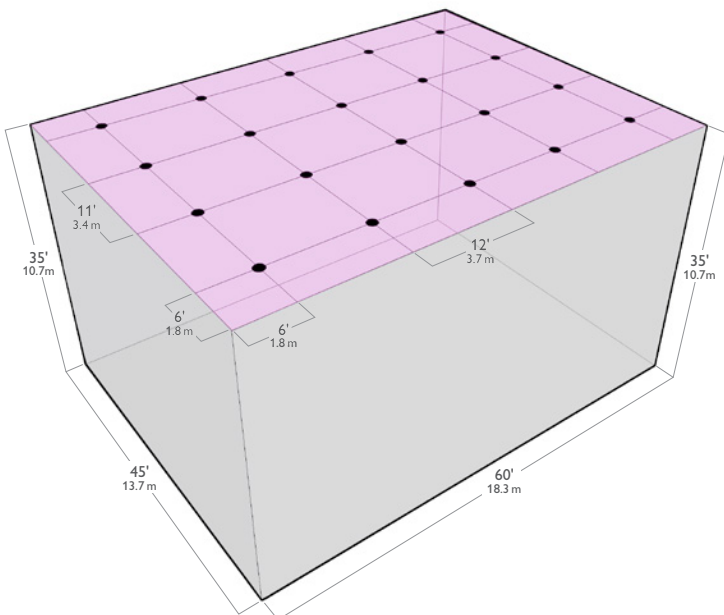
## High Ceiling layouts



## Calculite LED High Ceiling

### vs Metal Halide

Testing Results	Calculite Metal Halide 150W <sup>1</sup>	Calculite White LED High Ceiling <sup>2</sup>
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
<b>Layout Wattage</b>	<b>2640 w</b>	<b>1104 w</b>
<b>Lumens per Watt</b>	<b>42 lm/w</b>	<b>86 lm/w</b>



## Calculite LED High Ceiling

### vs Competitor LED

Testing Results	Typical High Lumen LED <sup>3</sup>	Calculite White LED High Ceiling <sup>2</sup>
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
<b>Layout Wattage</b>	<b>1900 w</b>	<b>1380 w</b>
<b>Lumens per Watt</b>	<b>65 lm/w</b>	<b>89 lm/w</b>

1. Comparison uses frame-in kit **C7E170VMCLW** with **C715MHOE1** 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"

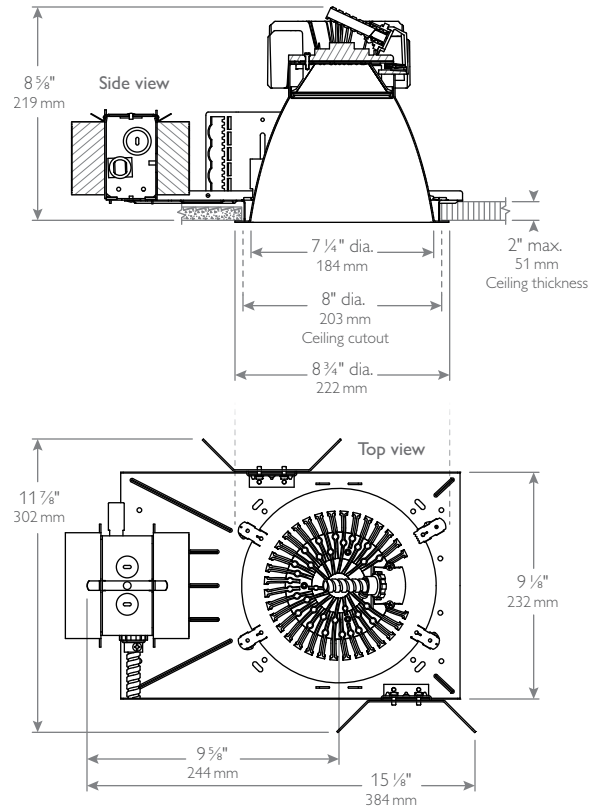
## High Ceiling downlight



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



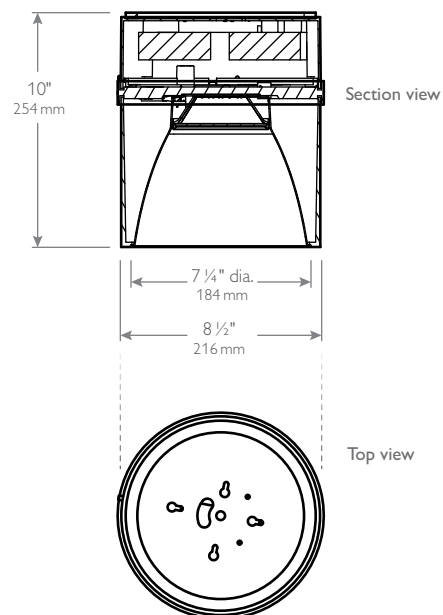
Wide beam  
Trim kit height is 8" (203 mm)



## High Ceiling cylinder



Fixture height is 10" (254 mm)



## 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

Optical performance is only part of the Calculate story. In today's demanding visual environments, downlights must not only be functional, but aesthetically pleasing. A smoother ceiling transition is desired and Calculate offers high quality flange options for the most discerning of tastes.



#### P Polished

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



#### W White (matte)

Provides the smoothest transition to ceilings when off.

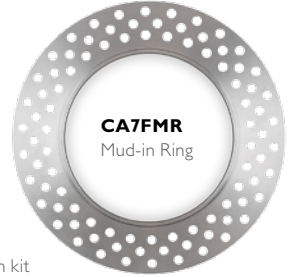


#### FT Flangeless

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

### Flangless 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 !:	3500K	
CR!	80 min	
Lumen output:	6174 lms	7500
Input watts <sup>2</sup> :	69.4 W	
Efficacy:	89.0 lm/w	
Spacing crit.:	0.3	15000
Beam spread:	20° Narrow	
Report no <sup>3</sup> :	327GFR	22500
<b>Multiple unit data<sup>4</sup></b>		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 !:	3500K	
CR!	80 min	
Lumen output:	5963 lms	2000
Input watts <sup>2</sup> :	69.2 W	
Efficacy:	86.2 lm/w	
Spacing crit.:	0.8	4000
Beam spread:	55° Medium	
Report no <sup>3</sup> :	329GFR	6000
<b>Multiple unit data<sup>4</sup></b>		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 !:	3500K	
CR!	80 min	
Lumen output:	5889 lms	1250
Input watts <sup>2</sup> :	69.2 W	
Efficacy:	85.1 lm/w	
Spacing crit.:	1.1	2500
Beam spread:	70° Wide	
Report no <sup>3</sup> :	328GFR	3750
<b>Multiple unit data<sup>4</sup></b>		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.



© 2014 Koninklijke Philips N.V. All rights reserved.  
Specifications are subject to change without notice.  
[www.philips.com/luminaires](http://www.philips.com/luminaires)

PLi-1405BR 05/14

Philips Lighting  
North America Corporation  
200 Franklin Square Drive  
Somerset, NJ 08873  
Phone: 855-486-2216

Philips Lighting Company  
281 Hillmount Road  
Markham ON, Canada L6C 2S3  
Phone: 800-668-9008