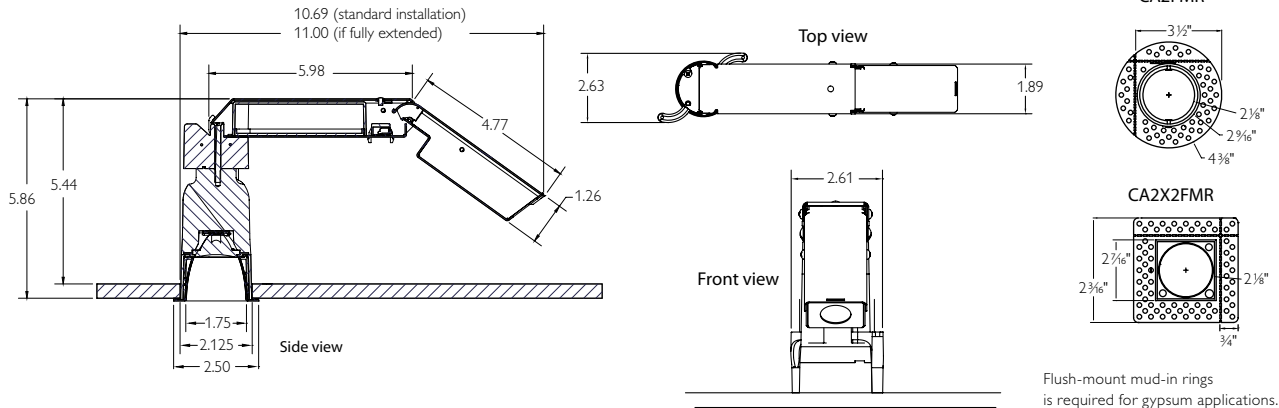


Calculite 1.75" Aperture, 400 Lumen LED

Catalog number:

Notes:

Type:



Ordering Guide: Frame-in Kits

| Frame-in Kit Series | Lumen Package (nominal) | Style | Color Temp | Beam Spread | Installation Style ² | Input Voltage |
|---------------------|-------------------------|---|--|--|---------------------------------|--|
| C2L | 04 (400 Lumens) | DL (Downlight flanged) DLFT (Downlight flush-mount) ¹ | 30K (3000K) 27K (2700K) | 12 (12 degrees) 17 (17 degrees) 25 (25 degrees) 38 (38 degrees) 47 (47 degrees) | R (install-from-below) | 1 (120V) UZ10V (universal with 0-10V dimming) |

¹requires "FT" series reflectors and mud ring (ordered separately)

Ordering Guide: Reflectors

| Reflector Series | Style | Finish | Flange |
|-----------------------|---|---|--|
| C2L (Round) | DL (Downlight-50° cutoff) DLLS (Downlight with linear spread lens-75° cutoff) LW (Lensed Wall Washer) ^{3,4} | BK (Black) CCD (Comfort Clear Diffuse) CCZ (Champagne Bronze) WH (Painted White) | P (aperture-matching) FT (Flush mount)* |
| C2X2L (Square) | DL (Downlight-50° cutoff) LW (Lensed Wall Washer) ³ | BK (Black) WH (Painted White) | P (Aperture-matching) FT (Flush-mount)* |
| | ³ 17° beam spread recommended ⁴ 18" max installation from vertical surface recommended | | *requires "FT" series frame-in kit |

Calculite 1.75" Aperture, 400 Lumen LED

Features

Aperture: 1.75" (44 mm) I.D., 2.50" (63mm) O.D.

Input Wattage: 11W max. (C2L04)

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

Beam Spread options:

| Beam Spread | Spacing Criterion | Delivered Lumens | Efficacy | CBCP |
|-------------|-------------------|------------------|-----------|------|
| 12° | 0.2 | 328 lm | 29.8 lm/w | 5099 |
| 17° | 0.3 | 412 lm | 37.3 lm/w | 3282 |
| 25° | 0.4 | 382 lm | 36.0 lm/w | 1995 |
| 38° | 0.6 | 377 lm | 34.9 lm/w | 936 |
| 47° | 0.7 | 331 lm | 30.0 lm/w | 544 |

Reflector Cone: Aluminum. Provides 50° cutoff to source & source image. Twist & lock installation within frame-in kit ensures snug fit to ceiling.

Reflector Flange: Thickness: 0.09" (2.4 mm). Width (flanged) 0.37" (9.5 mm). Width "flush-mount" 0.19" (4.8 mm)

Required Depth: 5.91" (150 mm). 5.5" plenum depth required for Non-IC installation. see above for fixture dimensions

Ceiling Cutout: 2.125" (54mm)

Installation: Hinged design allows fixture to be installed from below ceiling. Two screws actuate pivoting installation arms.

Vertical installation only (as shown in above drawings).

Thick Ceiling Capability: 3/8" - 2".

Optical Accessories: One (1) accessory as defined in "Accessories-Optical" below. Accessories install securely to top of reflector housing. Proper positioning ensured via offset die cut.

Field Accessibility: LED array, beam spreads (optics) and driver are field interchangeable/replaceable

Fixture Weight: 1.8 Lbs.

Electrical

Power connection: Integral connection between driver and LED array

Junction Box: UL listed for 6 No 12 AWG, 90°C through branch circuit connectors. Allows inspection from below. Compatible with 2-1 conduit connector for daisy chaining.

Minimum Starting Temperature: -20°C

Maximum Operating Temperature: 60°C

Input Voltage: 120V

Input Frequency: 60Hz

Input Current: .09A

LED Drive Current: 670mA

Input Power: 11W

LED Power: 9.1W

THD: <20%

Power Factor: >0.9

FCC Rating: Part 15 / Class B driver

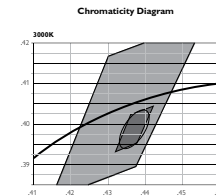
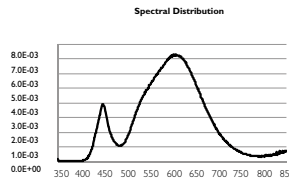
Technology

Array: 4-chip LED array featuring 2-step SDCM binning control

Photometric Performance: Tested in accordance to IESNA LM-79-2008

Color Consistency: 2 SDCM (max.)

Spectral Power Distribution:



Calculite LED 1.75" specification
LED ANSI specification
2-Step MacAdam ellipse

| Ra | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 |
|-------------|------|------|------|------|------|------|------|------|------|
| 81.0 | 80.2 | 87.1 | 91.0 | 78.9 | 78.3 | 81.0 | 85.6 | 66.2 | 21.3 |
| R10 | R11 | R12 | R13 | R14 | | | | | |
| 67.7 | 74.9 | 62.1 | 81.4 | 94.2 | | | | | |

Dimming Capability: ELV dims to nominal 10% lumen output.

See LED-DIM specification sheet for dimming system compatibility.

Emergency Capability (Inverter): Yes.

See LED-LMI specification sheet

Rated Life

LED Array: 50,000 hours at 70% lumen maintenance (L70, B50).

Based on IESNA LM-80-2008.

Driver: 50,000 hours

Labels

UL, cUL, I.B.E.W, AirSeal

17°, 25° & 38° & 47° beams suitable for wet location

12° beam suitable for damp location

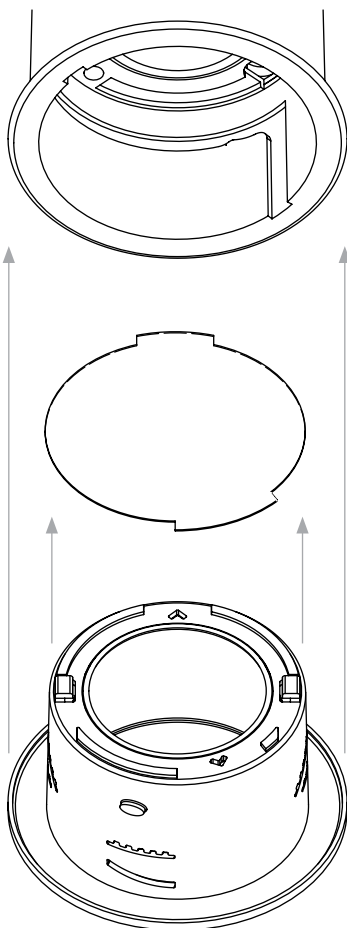
5 year warranty

Calculite 1.75" Aperture, 400 Lumen LED

Ordering Guide: Accessories

| Accessories-Optical | Lumen Package (nominal)* |
|---------------------|--|
| CA2DF2 | 2 degree clear diffusion film |
| CA2DF85 | 85 degree frosted diffusion film |
| CA2OPF | Opal 2700K warming / frosted diffusion film |
| | * Actual diffusion depends on selected beam spread |

To minimize accessory thickness and thus maximize optical performance, microstructure lenses are utilized in lieu of traditional glass lenses.



Reflector can be rotated 90° to ensure proper alignment. Friction-fit design maintains installation integrity.

For wall washer & linear spread options, lenses are factory-assembled into specified reflector.

Accessories are keyed to ensure proper installation.

Fixtures accept one accessory, which can be field-installed in any reflector assembly.

Durability

Calculite LED 1.75" fixtures operating temperatures are well below the recommended thermal limit of each optical accessory, eliminating lens degradation and ensuring maximum optical stability.

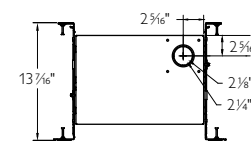
Ordering Guide: Installation Accessories

| Accessories-Installation | Lumen Package (nominal)* |
|--------------------------|--|
| C2LIC | IC frame (new construction) |
| C2LMP | New construction mounting pan |
| CA2FMR | Round aperture flush-mount mud-in ring |
| CA2X2FMR | Square aperture flush-mount mud-in ring |
| | * Recommended for specific applications. |

Optional Installation Accessories

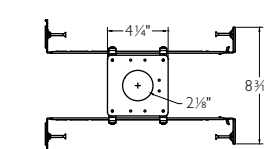
The standard C2L product offering is Non-IC, wet location listed* with no additional "frame-in kit" required. Listed below are additional frame options.

C2LIC



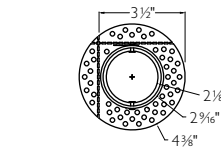
IC frame (new construction). Certified for use in Chicago Plenum applications. Includes bar hangers with preset screws which accommodate 12"-24" joist spacing. Bars also attach to T-bar ceilings. Width (min): 13 7/16", Length: 14 9/16", Depth: 9 5/16".

C2LMP



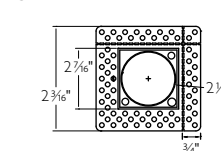
New construction mounting pan provides ability to prelocate wiring for easy below-ceiling access. Includes bar hangers with preset screws which accommodate 12"-24" joist spacing. Bars also attach to T-bar ceilings. Width: 5.5", Length (min): 13.12"

CA2FMR



Round aperture flush-mount mud-in ring. Recommended for gypsum applications. Perforated flange allows installation only 1.4" from vertical structure, including corners.

CA2X2FMR

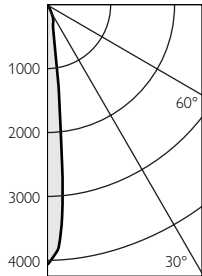


Square aperture flush-mount mud-in ring. Recommended for gypsum applications. Perforated flange allows installation only 1.4" from vertical structure, including corners. Square plate secures magnetically to mud-in ring. Tether included.

Calculite 1.75" Aperture, 400 Lumen LED

Reflector Finish Multipliers: CCD (1.0) WH (0.95) CCZ (0.88 (est.)) BK (tbd) CCD finish is tested. All other finishes calculated.

Candela Plot



Fixture: C2L04DL30K12R1
Reflector: C2LDLCCDP
Accessory: none
Beam Angle: 12°
Spacing Ratio: 0.2
CBCP: 5099
Lumens: 328
Watts: 11
Efficacy (lm/w): 29.8
CCT: 2990
Cutoff: 50°

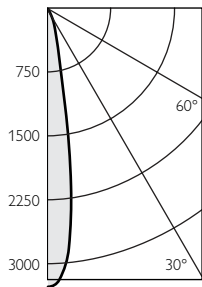
Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 204 | 1.0' |
| 6' | 142 | 1.2' |
| 7' | 104 | 1.4' |
| 8' | 80 | 1.6' |
| 9' | 63 | 1.8' |

Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 5099 | |
| 5 | 2829 | 118 |
| 15 | 290 | 83 |
| 25 | 61 | 45 |
| 35 | 14 | 9 |
| 45 | 7 | 6 |
| 55 | 3 | 3 |
| 65 | 1 | 1 |

Candela Plot



Fixture: C2L04DL30K17R1
Reflector: C2LDLCCDP
Accessory: none
Beam Angle: 17°
Spacing Ratio: 0.3
CBCP: 3282
Lumens: 412
Watts: 11
Efficacy (lm/w): 37.3
CCT: 2979
Cutoff: 50°

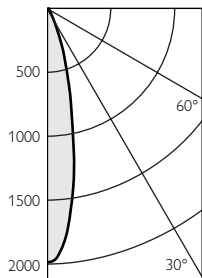
Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 131 | 1.5' |
| 6' | 91 | 1.8' |
| 7' | 67 | 2.1' |
| 8' | 51 | 2.4' |
| 9' | 41 | 2.7' |

Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 3282 | |
| 5 | 2835 | 212 |
| 15 | 432 | 133 |
| 25 | 126 | 56 |
| 35 | 13 | 9 |
| 45 | 3 | 2 |
| 55 | 0 | 0 |
| 65 | 0 | 0 |

Candela Plot



Fixture: C2L04DL30K25R1
Reflector: C2LDLCCDP
Accessory: none
Beam Angle: 25°
Spacing Ratio: 0.4
CBCP: 1995
Lumens: 382
Watts: 10.6
Efficacy (lm/w): 36.0
CCT: 2979
Cutoff: 50°

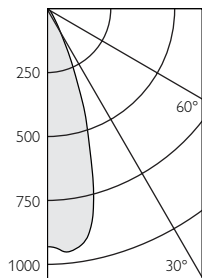
Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 80 | 2.0' |
| 6' | 55 | 2.4' |
| 7' | 41 | 2.8' |
| 8' | 31 | 3.2' |
| 9' | 25 | 3.6' |

Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 1995 | |
| 5 | 1742 | 147 |
| 15 | 623 | 174 |
| 25 | 86 | 51 |
| 35 | 12 | 8 |
| 45 | 3 | 2 |
| 55 | 0 | 0 |
| 65 | 0 | 0 |

Candela Plot



Fixture: C2L04DL30K38R1
Reflector: C2LDLCCDP
Accessory: none
Beam Angle: 38°
Spacing Ratio: 0.6
CBCP: 936
Lumens: 377
Watts: 10.8
Efficacy (lm/w): 34.9
CCT: 2977
Cutoff: 50°

Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 37 | 3.0' |
| 6' | 26 | 3.6' |
| 7' | 19 | 4.2' |
| 8' | 15 | 4.8' |
| 9' | 12 | 5.4' |

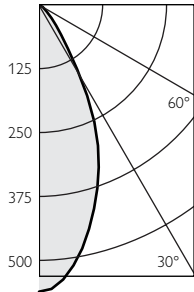
Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 936 | |
| 5 | 959 | 90 |
| 15 | 668 | 180 |
| 25 | 167 | 84 |
| 35 | 28 | 19 |
| 45 | 4 | 4 |
| 55 | 0 | 0 |
| 65 | 0 | 0 |

Calculite 1.75" Aperture, 400 Lumen LED

Reflector Finish Multipliers: CCD (1.0) WH (0.95) CCZ (0.88 (est.)) BK (tbd) CCD finish is tested. All other finishes calculated.

Candela Plot



| | |
|-------------------------|-----------------------|
| Fixture: | C2L04DL30K47R1 |
| Reflector: | C2LDLCCDP |
| Accessory: | none |
| Beam Angle: | 47° |
| Spacing Ratio: | 0.7 |
| CBCP: | 544 |
| Lumens: | 331 |
| Watts: | 11 |
| Efficacy (lm/w): | 30.0 |
| CCT: | 2970 |
| Cutoff: | 50° |

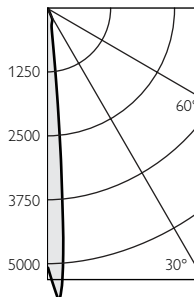
Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 22 | 3.5' |
| 6' | 15 | 4.2' |
| 7' | 11 | 4.9' |
| 8' | 9 | 5.6' |
| 9' | 7 | 6.3' |

Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 544 | |
| 5 | 523 | 40 |
| 15 | 401 | 109 |
| 25 | 247 | 128 |
| 35 | 73 | 60 |
| 45 | 10 | 11 |
| 55 | 2 | 3 |
| 65 | 1 | 1 |

Candela Plot



| | |
|-------------------------|-----------------------------------|
| Fixture: | C2L04DL30K12R1 |
| Reflector: | C2LDLCCDP |
| Accessory: | CA2DF2 (2° diffusion film) |
| Beam Angle: | 12° |
| Spacing Ratio: | 0.2 |
| CBCP: | 4058 |
| Lumens: | 325 |
| Watts: | 10.7 |
| Efficacy (lm/w): | 30.4 |
| CCT: | 2990 |
| Cutoff: | 50° |

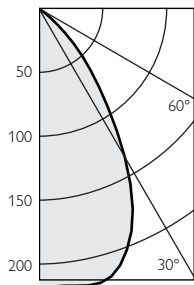
Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 162 | 1.0' |
| 6' | 113 | 1.2' |
| 7' | 83 | 1.4' |
| 8' | 63 | 1.6' |
| 9' | 50 | 1.8' |

Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 4058 | |
| 5 | 2521 | 167 |
| 15 | 299 | 88 |
| 25 | 101 | 49 |
| 35 | 19 | 12 |
| 45 | 7 | 6 |
| 55 | 2 | 2 |
| 65 | 0 | 0 |

Candela Plot



| | |
|-------------------------|-------------------------------------|
| Fixture: | C2L04DL30K12R1 |
| Reflector: | C2LDLCCDP |
| Accessory: | CA2DF85 (85° diffusion film) |
| Beam Angle: | 66° |
| Spacing Ratio: | 1.0 |
| CBCP: | 217 |
| Lumens: | 256 |
| Watts: | 10.7 |
| Efficacy (lm/w): | 23.9 |
| CCT: | 2990 |
| Cutoff: | 50° |

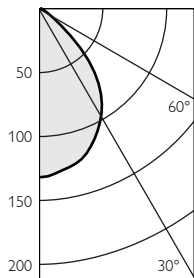
Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 9 | 5.0' |
| 6' | 6 | 6.0' |
| 7' | 4 | 7.0' |
| 8' | 3 | 8.0' |
| 9' | 3 | 9.0' |

Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 217 | |
| 5 | 217 | 21 |
| 15 | 216 | 60 |
| 25 | 172 | 77 |
| 35 | 93 | 58 |
| 45 | 38 | 29 |
| 55 | 7 | 7 |
| 65 | 2 | 2 |

Candela Plot



| | |
|-------------------------|--|
| Fixture: | C2L04DL30K12R1 |
| Reflector: | C2LDLCCDP |
| Accessory: | CA2OPF (Opal warming/diffusion lens) |
| Beam Angle: | 80° |
| Spacing Ratio: | 1.1 |
| CBCP: | 133 |
| Lumens: | 190 |
| Watts: | 10.7 |
| Efficacy (lm/w): | 17.8 |
| CCT: | 2840 |
| Cutoff: | 50° |

Single Unit Data

| Ceiling Height | Initial Footcandles | Beam Diameter |
|----------------|---------------------|---------------|
| 5' | 5 | 5.5' |
| 6' | 4 | 6.6' |
| 7' | 3 | 7.7' |
| 8' | 2 | 8.8' |
| 9' | 2 | 9.9' |

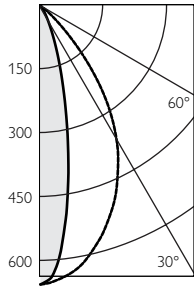
Candela Table

| Angle | Intensity | Lumens |
|-------|-----------|--------|
| 0 | 133 | |
| 5 | 130 | 13 |
| 15 | 123 | 34 |
| 25 | 106 | 49 |
| 35 | 83 | 51 |
| 45 | 44 | 33 |
| 55 | 8 | 9 |
| 65 | 2 | 2 |

Calculite 1.75" Aperture, 400 Lumen LED

Reflector Finish Multipliers: CCD (1.0) WH (0.95) CCZ (0.88 (est.)) BK (tbd) CCD finish is tested. All other finishes calculated.

Candela Plot

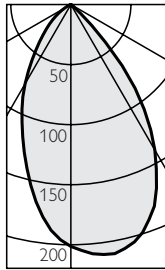


Fixture: C2L04DL30K17R1
Reflector: C2LDLLSCCDP
 (integral linear diffusion lens)
Accessory: none
Beam Angle: 63° x 20°
Spacing Ratio: n/a
CBCP: n/a
Lumens: 314
Watts: 10.7
Efficacy (lm/w): 29.3
CCT: 2979
Cutoff: 75°

Candela Table

| Angle | "Intensity (Along) | Intensity (Across) | Lumens |
|-------|--------------------|--------------------|--------|
| 0 | 660 | 660 | |
| 5 | 644 | 574 | 28 |
| 15 | 562 | 216 | 51 |
| 25 | 434 | 56 | 42 |
| 35 | 270 | 14 | 25 |
| 45 | 83 | 5 | 9 |
| 55 | 11 | 2 | 2 |
| 65 | 1 | 1 | 0 |

Candela Plot



Fixture: C2L04DL30K17R1
Reflector: C2LLWCCDP
 (integral wall wash lens)
Accessory: none
Beam Angle: 66°
Spacing Ratio: 1.0
CBCP: 217
Lumens: 256
Watts: 10.7
Efficacy (lm/w): 23.9
CCT: 2990
Cutoff: 50°

Candela Table

| Angle | "Intensity (Along) | Intensity (Across) | Lumens |
|-------|--------------------|--------------------|--------|
| 0 | 201 | 201 | |
| 5 | 189 | 208 | 9 |
| 15 | 141 | 205 | 21 |
| 25 | 96 | 169 | 24 |
| 35 | 56 | 106 | 19 |
| 45 | 29 | 24 | 11 |
| 55 | 12 | 2 | 5 |
| 65 | 3 | 1 | 1 |



Philips Lightolier
 e: lol.webmaster@philips.com
 t: (508) 679-8131
 w: www.lightolier.com

C2L04 August 27, 2012

Specifications are subject to change without notice.
 © Koninklijke Philips Electronics N.V., 2012. All rights reserved.