Project		**Catalog #**		**Type**	
Prepared by		**Notes**		**Date**	

Fail-Safe

CLM | LD4 LED

Sealed / Cleanroom / Vivarium / Darkroom
Recessed Flange, Recessed Grid, Surface
1 x 2, 1 x 4, 2 x 2, and 2 x 4

Typical Applications:

Cleanroom • Pharmaceuticals • Vivariums • Hosedown • Food Prep • High Abuse • Healthcare • Vandal Resistant

Interactive Menu

- Order Information page 2
- Product Specifications page 3
- Product Warranty

Product Certification

cULus CERTIFIED · IP65 · IC RATED · ISO5 CLEANROOM

Product features

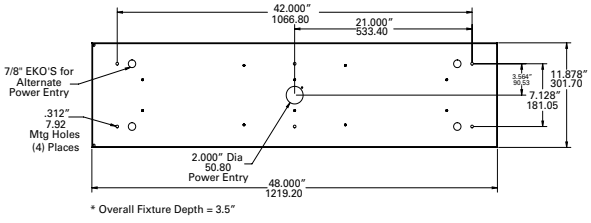
wet location · BAA

Top Product Features

- Recessed grid- or flange-mount, surface-mount; Flange fits into grid ceilings; Overlapping and inset doors
- Die-formed heavy gauge steel, aluminum or stainless steel housing and door
- IP65 rated, ISO5-9 certified; Wet Location listing under covered ceilings
- 2000K, 2700K, 3000K, 3500K, 4000K and 5000K CCT; 80 CRI minimum; Red LEDs available
- Options to meet Buy American Act requirements
- **10 day rapid ship available**

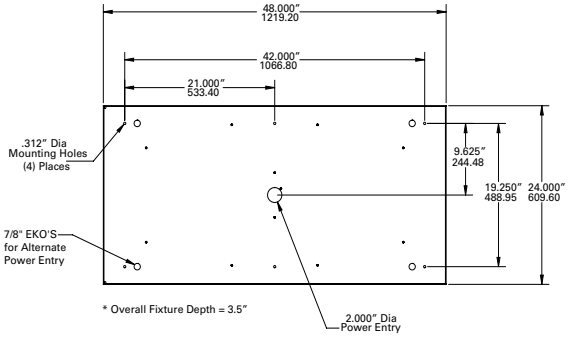
Dimensional and Mounting Details - Surface

1x4 Mounting Detail



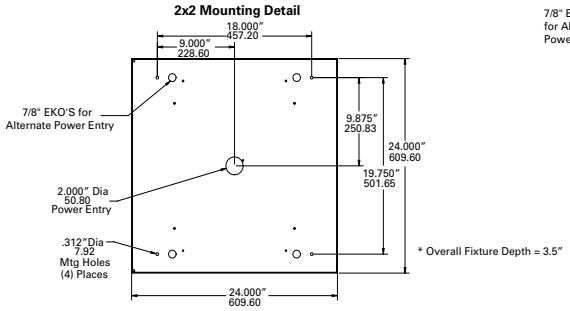
* Overall Fixture Depth = 3.5"

2x4 Mounting Detail



* Overall Fixture Depth = 3.5"

2x2 Mounting Detail



* Overall Fixture Depth = 3.5"

additional product diagrams

Order Information

SAMPLE ORDER NUMBER: **CLMF-12-4-ALH-INA-A12125-LD4-2STD-40-UNV-EDC2-MSB4-AMD** (White only)
SAMPLE ORDER NUMBER: **CLMG-24-2-INS-A19156-LD4-2HI40/2STDR63-UNV-EDC2** (White/Red)
10 DAY RAPID SHIP SAMPLE ORDER NUMBER: **CLMG-24-4-INS-A12125-LD4-4STD-35-UNV-EDC1-RS** **"Shaded options denote 10 day rapid ship"**

Domestic Preferences	Product Family	Width	Length	Housing Material	Door Type	Lens	LEDs	No. of LEDs
[Blank]=Standard **BAA**= Buy American Act	**CLMF**=Cleanroom Moderate Recessed Flange [2] **CLMG**=Cleanroom Moderate Grid (1", 1-1/2" NEMA G) **CLMS**=Cleanroom Moderate Surface (Surface available in 1x4, 2x2 and 2x4) [7]	**24**=24" Wide **12**=12" Wide	**2**=2' Length **4**=4' Length	**[Blank]**=Cold Rolled Steel, Powder Coat Painted White **ALH**=Aluminum Housing, Painted Powder Coat White **SHP**=Stainless Steel (304), Powder Coat Painted White **SH316P**=Stainless Steel (316), Powder Coat Painted White **SHB**=Stainless Steel (304) Brushed **SH316B**=Stainless Steel (316) Brushed	**Inset Die Formed, One Piece** **INS**=Inset Door, Die-formed Steel, Painted White **INA**=Inset Door, Die-formed Aluminum, Painted White **INSSP**=Inset Door,Die-formed Stainless Steel, Painted White (Replace P with B for Brushed) **INSS316P**=inset Door, Die-formed (316) Stainless Steel Painted White (Replace P with B for Brushed) **Overlapping, One Piece** **OLS**=Overlapping Door, Die-formed Steel, Painted White **OLA**=Overlapping Door, Die-formed Aluminum, Painted White **OLSSP**=Overlapping Door, Die-formed Stainless Steel, Painted White (Replace P with B for Brushed) **OLSS316P**=Overlapping Door, Die-formed (316) Stainless Steel, Painted White (Replace P with B for Brushed)	**A12125**=Pattern 12 Acrylic, 0.125" Thick, Inverted **A19156**=Pattern 19, 0.156" Thick, Inverted **P12125**=Pattern 12 Polycarbonate, 0.125" Thick, Inverted Other Lenses / thicknesses available, consult factory or the Lens Ordering Guide on web-site	**LD4**=Linear LED, Version 4.0	**1**=(1) LED Module in X-section **2**=(2) LED Modules in X-section **3**=(3) LED Modules in X-section [8] (1x4, 2x2, 2x4 Only) **4**=(4) LED Modules in X-section (2x2, 2x4 Only) **5**=(5) LED Modules in X-section [6] (2x2, 2x4 Only)
Notes (9) Only product configurations with this designated prefix are built to be compliant with the Buy American Act of 1933 (BAA). Please refer to DOMESTIC PREFERENCES website for more information. Components shipped separately may be separately analyzed under domestic preference requirements.	**Notes** (2) Flange ship standard with (4) mounting brackets for quick and easy installation. (7) Emergency not available on CLMS (surface mount).							**Notes** (6) CLMF, CLMG with 5 LED modules in cross section, at HI Illumination level, requires voltage specific thermal protector. (8) 1x4, 2x2, and 2x4 sizes are available with 3 row LED module cross-section.3 rows of LED's is not available in the 1x2. The 1x4 3LO or 3STD with EM option is available. The 1x4 3HI with EM is not available.

Illumination Level	Color Temperature	Voltage	Driver	No. of Circuits	Options	Accessories (Order Separately) [10]
LO=Low **STD**=Standard **HI**=High	**20**=2000K (White LEDs only) **27**=2700K (White LEDs only) **30**=3000K (White LEDs only) **35**=3500K (White LEDs only) **40**=4000K (White LEDs only) **50**=5000K (White LEDs only) **R63**=Red, 630nm (Red LEDs only)	**120**=120V **277**=277V **UNV**=120V-277V	**EDC_**=Electronic Driver, Non-Dimming **EDD_**=Electronic Driver, 0-10V Dimming 10% **ED1D_**=Electronic 0-10V Driver, Dimming 1%	**1**=1 Circuit **2**=2 Circuits **3**=3 Circuits **4**=4 Circuits [1] **5**=5 Circuits [1]	**MSB4-PK**=Mounting Safety Brackets (4) with Hardware [5] **EL7W**=7W EM Pack [4], [6], [7], [8] **EL10W**=10W EM Pack [4], [6], [7], [8] **EL14W**=14W EM Pack [4], [6], [7], [8] **AMA**=Antimicrobial, All Parts **AMD**=Antimicrobial, Door Only **GSK**=Gasketing applied to housing flange to rest on grid (CLMG), applied to housing flange to seal against ceiling(CLMF) **90**=90 CRI **RS**=10 day ship [11]	**MSB4-PK**=Mounting Safety Brackets (4) with Hardware [5]
				Notes (1) 4 and 5 Circuits only available with 2x4 fixtures.	**Notes** (4) Emergency requires backbox on fixture top, which adds approximately 3" to fixture height. (5) MSB4 for use with grid fixtures only. (6) CLMF, CLMG with 5 LED modules in cross section, at HI Illumination level, requires voltage specific thermal protector. (7) Emergency not available on CLMS (surface mount). (8) 1x4, 2x2, and 2x4 sizes are available with 3 row LED module cross-section. 3 rows of LED's is not available in the 1x2. The 1x4 3LO or 3STD with EM option is available. The 1x4 3HI with EM is not available. (11) 10 day ship, from date of receipt of clean PO to ship date. 25 unit maximum per PO. RS option is only available in 2x2 & 2x4 sizes, and only available with options that are shaded.	**Notes** (5) MSB4 for use with grid fixtures only. (10) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

Please see below for ordering logic for the application of Red & White Leds in combination

SAMPLE NUMBER: CLMG-24-4-INS-A12125-LD4-4LOR63-UNV-EDC1 (RED ONLY)
SAMPLE NUMBER: CLMF-24-4-INS-A12125-LD4-4STD-40-UNV-EDC1 (WHITE ONLY)
SAMPLE NUMBER: CLMG-24-4-INS-A12125-LD4-2LO30/2LOR63-UNV-EDC2 (WHITE/RED)

* Red & White LEDs (5 modules max in cross-section)					
Rows of White	Illumination Level White	Color Temp White	Rows of Red	Illumination Level Red	Color Temp Red
1	STD	20	1	STD	R63
2	LO	27	2	LO	
3	HI	30	3	HI	
4		35	4		
5		40	5		
		50			

1x4/2x2/2x4 LED Placement (Red/White)			
# Total Rows of LEDs	# Rows of White LEDs	# Rows of Red LEDs	Placement of Red & White LEDs
3	2	1	White, Red, White
3	1	2	Red, White, Red
4	3	1	White, White, Red, White
4	2	2	White, Red, Red, White
4	1	3	Red, Red, White, Red
5	1	4	Red, Red, White, Red, Red
5	2	3	Red, White, Red, White, Red
5	3	2	White, Red, White, Red, White
5	4	1	White,White,Red,White,White

Approximate Lumen Multiplier for Red LED's	
Color	Multiplier from White 4000K
White, 4000K	1.00
Red, 630nm	0.29

Product Specifications

Application
- Designed for use in cleanroom where a sealed enclosure product is needed

Housing
- 3 ½" deep
- Die-formed heavy gauge steel, Welded construction
- Optional stainless steel or aluminum
- Electrostatically applied, White powder coat finish; Antimicrobial option

Fasteners
- Captive, countersunk, stainless steel Phillips-head screws secure door to housing
- Screws are painted to match door finish

Gasketing
- Lens to Door Frame: Closed cell gasket seals lens to door frame
- Door Frame to Housing or Ceiling: One-piece continuous closed-cell gasket
- Housing to Grid: Closed-cell gasket optional

Door
- Overlapping door: One-piece, die-formed steel, stainless steel or aluminum door
- Inset door: Die-formed steel, or aluminum
- Two stainless steel aircraft cables to attach door to housing is provided

Lens
- Pattern 12 acrylic lens; 0.125" thickness; Inverted
- Pattern 19 acrylic lens; 0.156" thickness; Inverted
- Pattern 12 polycarbonate; 0.125" thickness; Inverted
- Other lenses and thicknesses available, refer to Ordering Information

Mounting
- Recessed grid for 1" or 1 ½" NEMA G T-bar system
- Recessed flange for use with hard ceiling pan ceilings
- 4 optional mounting safety brackets
- Surface-mount using 4 holes (0.312")

LEDs
- Available in 2000K, 2700K, 3000K, 3500K, 4000K and 5000K; 80 CRI minimum
- Choice of Standard, Low or High illumination levels
- TM-21 calculations of 84% lumen maintenance at 60,000 hours
- Red (630nm) LEDs available

Electrical
- Electronic driver 120-277V, dimming driver standard. 0-10V dimming down to 1% or 10%
- Non-dimming available

Compliance
- ISO5-9 certified
- cULus listed for wet locations under covered ceilings
- IP65 rated
- Insulated Ceiling (IC) rated (fixture configuration up to 4 rows of LED modules)

Warranty
- Five-year warranty on LEDs and electrical, consult website for details. www.cooperlighting.com/legal

Input Watts/Delivered Lumens

View IES files

1' x 2'			
No. of Modules, Level	Input Watts	Delivered Lumens*	LPW
1LO	11.7	1330	113.7
1STD	16.65	1781	107.0
1HI	21.6	2185	101.1
2LO	23.4	2660	113.7
2STD	33.3	3562	107.0
2HI	43.2	4369	101.1

2' x 2'			
No. of Modules, Level	Input Watts	Delivered Lumens*	LPW
2LO	23.4	3103	132.6
2STD	33.3	4155	124.8
2HI	43.2	5097	118.0
3LO	35.1	4654	132.6
3STD	49.95	6233	124.8
3HI	64.8	7645	118.0
4LO	46.8	6206	132.6
4STD	66.6	8311	124.8
4HI	86.4	10194	118.0
5LO	58.5	7757	132.6
5STD	83.25	10388	124.8
5HI	108	12742	118.0

* Approximate delivered lumens, 4000K.
* Verify with actual photometric test reports.
* A12125 lens.

1' x 4'			
No. of Modules, Level	Input Watts	Delivered Lumens*	LPW
1LO	23.4	2756	117.8
1STD	33.3	3691	110.8
1HI	43.2	4528	104.8
2LO	46.8	5513	117.8
2STD	66.6	7382	110.8
2HI	86.4	9055	104.8
3LO	70.2	8269	117.8
3STD	99.9	11074	110.8
3HI	129.6	13583	104.8

2' x 4'			
No. of Modules, Level	Input Watts	Delivered Lumens*	LPW
2LO	46.8	6206	132.6
2STD	66.6	8311	124.8
2HI	86.4	10194	118.0
3LO	70.2	9309	132.6
3STD	99.9	12467	124.8
3HI	129.6	15291	118.0
4LO	93.6	12412	132.6
4STD	133.2	16622	124.8
4HI	172.8	20388	118.0
5LO	117	15515	132.6
5STD	166.5	20778	124.8
5HI	216	25485	118.0

Lumen Calculator

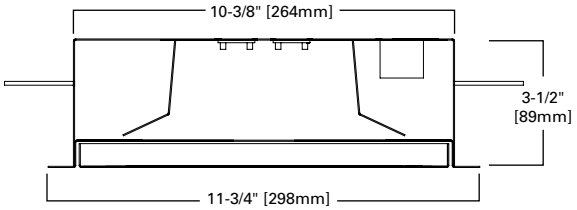
Approximate CCT Multiplier	80 CRI	90 CRI
2000K	0.67	0.56
2700K	0.89	0.75
3000K	0.94	0.82
3500K	0.99	0.83
4000K	1.00	0.84
5000K	1.02	0.88

Lens	Multiplier
A12125	1
A19156	0.994
P12125	0.906

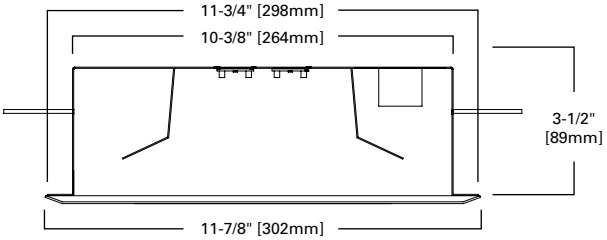
Dimensional and Mounting Details - Recessed

Recessed Flange

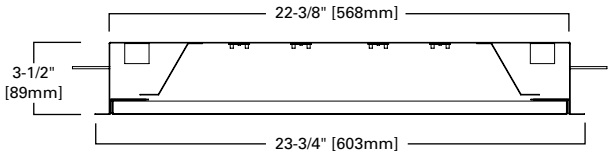
1′ Wide, Inset Door



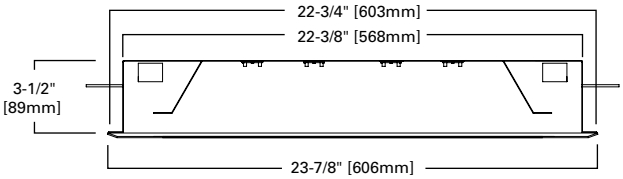
1′ Wide, Overlapping Door



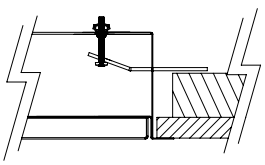
2′ Wide, Inset Door



2′ Wide, Overlapping Door



Mounting Bracket - Standard

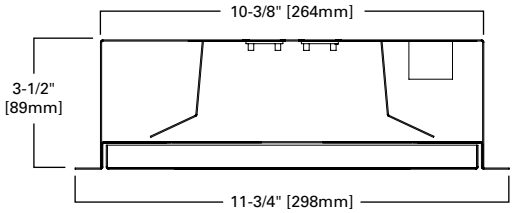


Cut-Out Dimensions

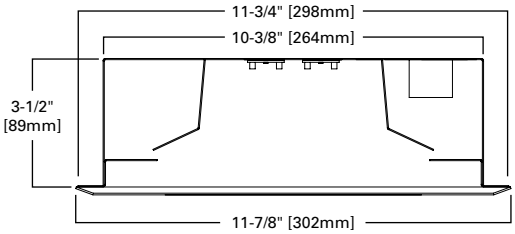
1x4	10-5/8″ x 46-5/8″
1x2	10-5/8″ x 22-5/8″
2x4	22-5/8″ x 46-5/8″
2x2	22-5/8″ x 22-5/8″

Recessed Grid

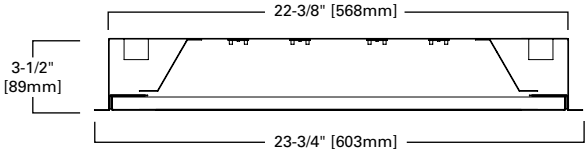
1′ Wide, Inset Door



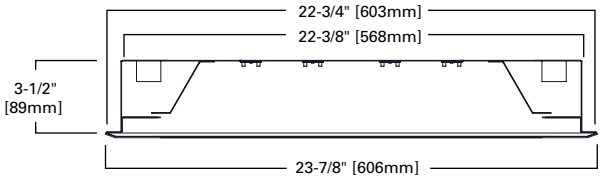
1′ Wide, Overlapping Door



2′ Wide, Inset Door



2′ Wide, Overlapping Door



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Specifications and dimensions
subject to change without notice.