

Project		Catalog #		Type	
Prepared by		Notes		Date	



Fail-Safe

ORL

Operating Room
Recessed Grid, Flange
1x4 / 2x2 / 2x4

Typical Applications:

Healthcare • Operating Rooms • Surgical Suites

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- Product Warranty

Product Certification



Product features



Top Product Features

- Asymmetric distribution illumination ideal around the perimeter of an operating room table
- Multiple lumen packages up to 32,000+ lumens; Multiple lenses available
- Die-formed steel housing and door; stainless steel and aluminum available
- IP66 rated, NSF listed, ISO5-9 certified, and MILSTD 461G compliant
- Green (520nm) and Red (630nm) LEDs available
- 2000K, 2700K, 3000K, 3500K, 4000K and 5000K CCT; 80 and 90 CRI
- Options to meet Buy American Act requirements

Input Watts/Delivered Lumens

2' x 2'			
No. of Modules	Input Watts	Delivered Lumens	LPW
1LO	11.7	1450	123.9
1STD	16.65	1942	116.6
1HI	22	2383	108.3
2LO	23.4	2901	124.0
2STD	33.3	3884	116.6
2HI	44	4765	108.3
3LO	35.1	4352	124.0
3STD	49.95	5827	116.7
3HI	66	7148	108.3
4LO	46.8	5802	124.0
4STD	66.6	7770	116.7
4HI	88	9530	108.3
5LO	58.5	7253	124.0
5STD	83.25	9712	116.7
5HI	110	11913	108.3
6LO	70.2	8703	124.0
6STD	99.9	11655	116.7
6HI	132	14296	108.3

2' x 4'			
No. of Modules	Input Watts	Delivered Lumens	LPW
1LO	23.4	3327	142.2
1STD	33.3	4456	133.8
1HI	44	5465	124.2
2LO	46.8	6654	142.2
2STD	66.6	8911	133.8
2HI	88	10930	124.2
3LO	70.2	9981	142.2
3STD	99.9	13366	133.8
3HI	132	16395	124.2
4LO	93.6	13308	142.2
4STD	133.2	17822	133.8
4HI	176	21860	124.2
5LO	117	16635	142.2
5STD	166.5	22277	133.8
5HI	220	27325	124.2
6LO	140.4	19962	142.2
6STD	199.8	26733	133.8
6HI	264	32790	124.2

1' x 4'			
No. of Modules	Input Watts	Delivered Lumens	LPW
1LO	23.4	3273	139.9
1STD	33.3	4383	131.6
1HI	44	5376	122.2
2LO	46.8	6546	139.9
2STD	66.6	8766	131.6
2HI	88	10752	122.2
3LO	70.2	9819	139.9
3STD	99.9	13149	131.6
3HI	132	16128	122.2

[View IES files](#)

[additional product diagrams](#)

Order Information

SAMPLE ORDER NUMBERS: ORLF-24-4-ALH-INA-ASYR-LD4-4HI-40-120-ED1D2
 ORLG-24-2-ALH-INA-ASYR-LD4-4HI40/2HIG52-277-ED1D2
 ORLG-24-4-ALH-INA-ASYR-LD4-4STD63-120-ED1D2

White only
 White/Green
 Red only

Domestic Preferences	Product Family	Width	Length	Housing Material	Door Type	Lens	LEDs	No of LEDs
Domestic Preferences ⁽¹⁾	Product Family	Width	Length	Housing Material	Door Type	Lens	LEDs	No of LEDs ⁽⁶⁾
[Blank] =Standard BAA =Buy American Act	ORLF =Recessed Flange ⁽²⁾ ORLG =Recessed Grid ^{(1), 1-1/2", NEMA G} ⁽³⁾	24=24" Wide 12=12" Wide ⁽⁴⁾	2=2' Length ⁽⁴⁾ 4=4' Length	[Blank] =Cold Rolled Steel, painted antimicrobial matte white ALH =Aluminum Housing, Painted antimicrobial matte white SHB =Stainless Steel, Brushed (antimicrobial matte white, not available on brushed) SHP =Stainless Steel, painted antimicrobial matte white	Inset Die Formed, One Piece INS =Inset Door, Die-formed Steel, Painted antimicrobial matte white INA =Inset Door, Die-formed ⁽⁵⁾ Aluminum, Painted antimicrobial matte white INSSP =Inset Door, Die-formed Steel, Painted antimicrobial matte white INSSB =Inset Door, Die-formed Stainless Steel, Brushed (antimicrobial matte white not available on brushed)	A125 =Pattern 12 Acrylic, 0.125" thick, Inverted (Add "C" to end of lens to include .125" clear acrylic underlay. Ex. A125C) 89BC =0.125" thick KSH19 RFI Symmetrical Lens (Add "C" to end of lens to include .125" clear acrylic underlay. Ex. 89BCC) ASY =Asymmetric Lens ASYR =Asymmetric Lens with RFI grid	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 4=(4) LED Modules in X-section 5=(5) LED Modules in X-section 6=(6) LED Modules in X-section (2' Width Only)
Notes (1) 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 ships standard with (4) brackets for quick and easy installation. (3) Hard metric grid fixtures available (600mm x 600mm, 300mm x 1200mm, 600mm x 1200mm) with PDR. Consult product technical support to verify ceiling compatibility (Main-T height and width, Cross-T height and width, other related specifications).	Notes (4) ORL not available in 1x2.		Notes (5) CPH option is not available with the INA (Inset Aluminum Door). CPH is available with INS, INSSP, & INSSB door options.		Notes (6) Thermal protectors installed on side of fixture, located approximately 2-1/4" inches from bottom of fixture. (See thermal protector table and detail below). ** Please specify voltage in the catalog ordering logic.		

Illumination Level	Color Temperature	Voltage	Driver	No. of Circuits	Options	Accessories
Illumination Level ⁽⁷⁾	Color Temperature	Voltage	Driver	No. of Circuits	Options	Accessories (Ordered Separately) ⁽¹⁵⁾
STD =Standard LO =Low HI =High	20 =White LED, 2000K 27 =White LED, 2700K 30 =White LED, 3000K 35 =White LED, 3500K 40 =White LED, 4000K 50 =White LED, 5000K G52 =Green LED, 520nm, (defaults to the 2 outward rows) R63 =Red, 630nm (defaults to the 2 outward rows)	Specify Voltage 120 =120V 277 =277V	EDC =Electronic Driver, Non-Dimming EDD =Electronic Driver, 0-10V Dimming, 10% ED1D =Electronic Driver, 0-10V Dimming, 1%	1=1 Circuit 2=2 Circuits 3=3 Circuits ⁽⁸⁾ 4=4 Circuits	EL7W =7W EM Pack ^{(9), (10), (12), (14)} EL10W =10W EM Pack ^{(9), (10), (14)} EL14W =14W EM Pack ^{(9), (10), (12), (14)} EL20W =20W EM Pack ^{(9), (10), (14)} EMRA =Emergency installed for room-side access ^{(9), (10)} MSB4 =Mounting Safety Brackets (4) with hardware CPH =Continuous Piano Hinge. Not available with the INA, Inset ⁽⁵⁾ Aluminum Door type MIL1 =MILSTD 461G compliant, one filter for single circuit ^{(10), (11), (12), (13)} MIL2 =MILSTD 461G compliant, two filters for dual circuits ^{(10), (11), (12), (13)} MIL3 =MILSTD 461G compliant, three filters for 3 circuits ^{(10), (11), (12), (13)} 90 =90CRI	MSB4-PK =Mounting Security Brackets. Use to secure fixture to grid or to attach tie-wires. DFCL-2448W-U *=2' x 4' gasketed drywall framing kit. Ships with gasket to be applied in field. Cut out dimension 24.25" x 48.25" DFCL-1248W-U *=1' x 4' gasketed drywall framing kit. Ships with gasket to be applied in field. Cut out dimension 12.25" x 48.25" DFCL-2424W-U *=2' x 2' gasketed drywall framing kit. Ships with gasket to be applied in field. Cut out dimension 24.25" x 24.25"
Notes (7) Thermal protectors installed on side of fixture, located approximately 2-1/4" inches from bottom of fixture. (See thermal protector table and detail next page). ** Please specify voltage in the catalog ordering logic.				Notes (8) Outermost two modules on one circuit, next outermost modules on 2nd circuit, remaining module(s) on 3rd circuit.	Notes (9) Emergency battery pack is mounted on back of fixture, adding 3" to fixture height. Emergency not accessible from room-side of fixture. For room-side access, specify the EMRA option. (10) Thermal protectors installed on side of fixture, located approximately 2-1/4" inches from bottom of fixture. (See thermal protector table and detail below). ** Please specify voltage in the catalog ordering logic. (11) ASYR or 89BC lens options must be used for MILSTD 461G compliance. (12) EL7W and EL14W not available with MILSTD 461G. (13) MILSTD 461G is the latest MILSTD version. MILSTD 461G supercedes all other versions (A-F). (14) EL7W, EL14W transfer time from normal to EM power is >1 second. EL10W, EL20W transfer time from normal to EM power is <1 second.	*Change W to AMW for antimicrobial matte white finish (15) Accessories sold separately will be separately analyzed under domestic preference requirements. Consult factory for further information.

Approximate Lumen Multipliers Red and Green LEDs	
Color	Multiplier from White 4000K
White, 4000K	1.00
Red, 630nm	0.29
Green, 520nm	0.68

Ordering logic for multi-color LED application in combination. *Red or Green LEDs always on separate circuit. Specify as follows, per the sample numbers below:

White/Green: ORLG-24-4-INS-A12125-LD4-4STD40/2HIG52-277-EDC2
 (4 White LED modules and 2 Green LED modules)
 White/Green: ORLG-24-4-INS-A12125-LD4-3STD35/2LOG52-277-EDC2
 (3 White LED modules and 2 Green LED modules)
 Red only: ORLG-24-4-INS-A12125-LD4-4STD63-277-EDC1
 (4 Red LED modules)
 Green only: ORLG-24-4-INS-A12125-LD4-4HIG52-277-EDC1
 (4 Green LED modules)

* Illumination level (LO,STD,HI) and color temperature chosen randomly in examples.

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
A125	1.000
89BC	0.875
ASY	1.070
ASYR	1.012

* Delivered Lumens shown were tested with 4000K LEDs and ASY (asymmetric) lens.

Thermal Protectors Required ^{(4) (5)}		
Size	NO EBP, NO MIL	EBP or MIL
2x2	6HI	3 STD to 6 HI *
2x4	6HI	3 STD to 6 HI *
1x4	3HI	2 STD to 3 HI **

* Includes 3STD, 4LO, 4STD, 4HI, 5LO, 5STD, 5HI, 6LO, 6STD, 6HI

** Includes 2HI, 3LO, 3STD, 3HI

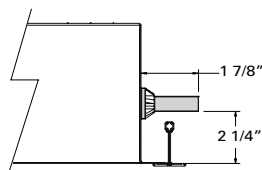
Please specify voltage 120V or 277V in ordering logic.

(4) The installed thermal protector is on the side and is located approximately 2-1/4" inches from bottom of fixture.

(5) No insulation can be put on fixture with thermal protector.

Thermal Protector Detail

Factory wired on the side of fixture. Customer must remove split bushing and insert TP in housing in the field.



Product Specifications

Application

- Designed for use in healthcare operating rooms/surgical suites

Housing

- Die-formed heavy gauge steel, seam-welded construction
- Optional stainless steel or aluminum
- Electrostatically applied, antimicrobial Matte White powder coat finish

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

Door

- One-piece inset, fully gasketed, die-formed steel, stainless steel or aluminum
- Two stainless steel aircraft cables to attach door to housing is provided

Lens

- One-piece asymmetric acrylic lens
- RFI 3/8" square metalized grid, grounded to housing
- Other lenses available, refer to Ordering Information

Mounting

- Recessed grid for 1" or 1 1/2" NEMA G T-bar system
- Recessed flange for use with hard ceiling pan ceilings
- 4 optional mounting safety brackets

LEDs

- Available in 2000K, 2700K, 3000K, 3500K, 4000K and 5000K; 80 or 90 CRI
- Choice of Standard, Low or High illumination levels
- Projected life is 50,000 hours at 70% lumen maintenance
- Red (630nm) and green (520nm) LEDs available

Electrical

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

Compliance

- cULus listed for wet locations under covered ceilings
- ISO5-9 certified
- IP66 rated
- MILSTD 461G compliant for conducted and radiated emissions
- NSF2 listed. NSF rated, splash, non-food zone -Typical rating for lighting equipment not subjected to direct food contact. (e.g. ceiling mount luminaires). Examples of equipment in direct food contact would be cutting boards, work-tables, mixers, can-openers, other).

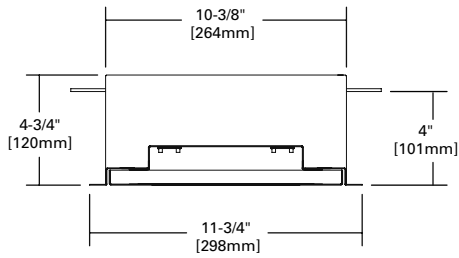
Warranty

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

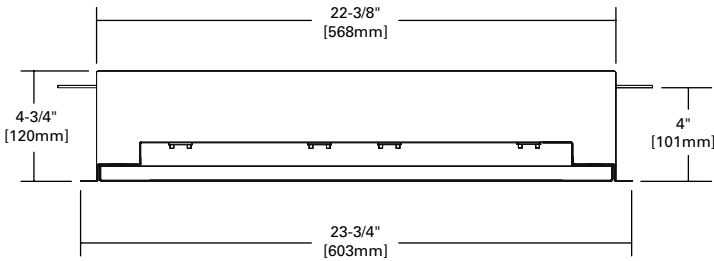
Dimensional and Mounting Details

Flange

1' Wide, Inset Door

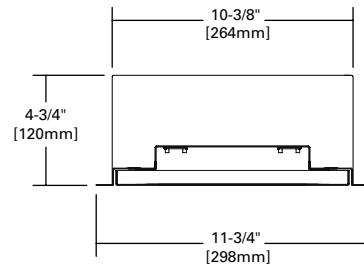


2' Wide, Inset Door

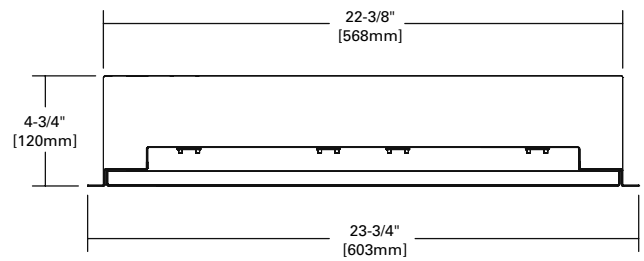


Grid

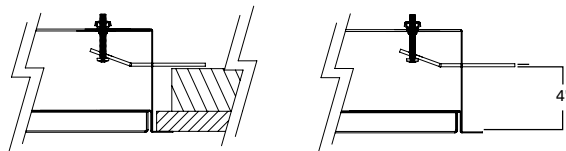
1' Wide, Inset Door



2' Wide, Inset Door



Mounting Bracket - Standard (ORL-F)



Cut-Out Dimensions

	Cut-Out Dimensions
1x4	10-5/8" x 46-5/8"
2x4	22-5/8" x 46-5/8"
2x2	22-5/8" x 22-5/8"