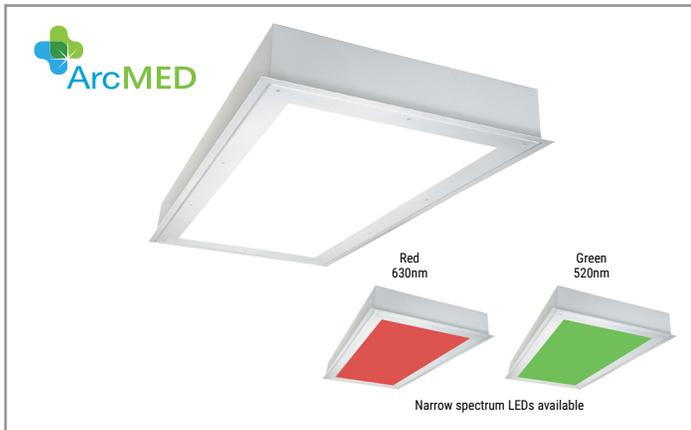


Project		Catalog #		Type	
Prepared by		Notes		Date	



Fail-Safe



ORL

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

Typical Applications:

Healthcare • Operating Rooms • Surgical Suites

Interactive Menu

- Order Information [page 2](#)
- Product Specifications [page 3](#)
- Product Warranty

Product Certification



Product features



Top Product Features

- Asymmetric/symmetryic 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, ISO3-9 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 Build America, Buy America and Buy American domestic preference requirements

Input Watts/Delivered Lumens

2' x 2'			
No. of Modules	Input Watts	Delivered Lumens	LPW
1LO	11.7	1327	113.4
1STD	16.65	1777	106.7
1HI	22	2181	99.1
2LO	23.4	2655	113.5
2STD	33.3	3554	106.7
2HI	44	4361	99.1
3LO	35.1	3983	113.5
3STD	49.95	5333	106.8
3HI	66	6541	99.1
4LO	46.8	5310	113.5
4STD	66.6	7111	106.8
4HI	88	8721	99.1
5LO	58.5	6638	113.5
5STD	83.25	8888	106.8
5HI	110	10902	99.1
6LO	70.2	7965	113.5
6STD	99.9	10666	106.8
6HI	132	13083	99.1

2' x 4'			
No. of Modules	Input Watts	Delivered Lumens	LPW
1LO	23.4	3045	130.1
1STD	33.3	4078	122.5
1HI	44	5001	113.7
2LO	46.8	6089	130.1
2STD	66.6	8155	122.4
2HI	88	10003	113.7
3LO	70.2	9134	130.1
3STD	99.9	12232	122.4
3HI	132	15004	113.7
4LO	93.6	12179	130.1
4STD	133.2	16310	122.4
4HI	176	20005	113.7
5LO	117	15224	130.1
5STD	166.5	20387	122.4
5HI	220	25006	113.7
6LO	140.4	18268	130.1
6STD	199.8	24465	122.4
6HI	264	30008	113.7

1' x 4'			
No. of Modules	Input Watts	Delivered Lumens	LPW
1LO	23.4	2995	128.0
1STD	33.3	4011	120.5
1HI	44	4920	111.8
2LO	46.8	5991	128.0
2STD	66.6	8022	120.5
2HI	88	9675	109.9
3LO	70.2	8986	128.0
3STD	99.9	12033	120.5
3HI	132	14760	111.8

[View IES files](#)

[additional product diagrams](#)

Order Information

SAMPLE ORDER NUMBERS: **ORLF-24-4-ALH-INA-ASY2-LD4-4HI-40-120-ED1D2**
ORLG-24-2-ALH-INA-OPL-LD4-4HI40/2HIG52-277-ED1D2
ORLG-24-4-ALH-INA-ASY2R-LD4-4STDR63-120-ED1D2

White only
White/Green
Red only

Domestic Preferences ⁽¹⁾	Product Family	Width	Length	Housing Material	Door Type	Lens	LEDs	No of LEDs ⁽⁶⁾
[Blank] =Standard BAA =Buy American Act BABA =Build America Buy America Act	ORLF =Recessed Flange ⁽²⁾ ORLG =Recessed Grid (1", 1-1/2", NEMA 6) ⁽³⁾	24 =24" Wide 12 =12" Wide	2=2' Length 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 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 Stainless Steel, Painted antimicrobial matte white INSSB =Inset Door, Die-formed Stainless Steel, Brushed (antimicrobial matte white not available on brushed)	OPL =Opal Acrylic Lens, 0.080" thick (add "C" to OPL, for clear acrylic underlay 0.125" thick) 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. 89BC) ASY2 =Asymmetric/symmetric Lens (add "C" to end of lens to include .125" clear acrylic underlay. Ex. ASY2C) ASY2R =Asymmetric/symmetric Lens, RFI grid (add "C" to end of lens to include .125" clear acrylic underlay. Ex. ASY2RC)	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 (2' Width Only) 5 =(5) LED Modules in X-section (2' Width Only) 6 =(6) LED Modules in X-section (2' Width Only)
Notes (1) Only product configurations with these prefixes are built to be compliant with the Buy American Act of 1933 (BAA) or the Build America Buy America Act (BABA). BABA is the minimum Government compliance requirement for the Build America Buy America standards which is part of the Infrastructure and Investment Jobs Act (IIJA). Individual Government Agencies may have more stringent compliance standards. Please refer to DOMESTIC PREFERENCES website or consult the CLS Domestic Preferences team 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 (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 next page). ** Please specify voltage in the catalog ordering logic.

Illumination ⁽⁷⁾ Level	Color Temperature ⁽¹²⁾	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 outboard rows) R63 =Red, 630nm (defaults to the 2 outboard 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	EL10W =10W EM Pack ^{(9), (10), (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 (12) Standard 80CRI. For 90CRI, specify "90" in options.			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. (13) MILSTD 461G is the latest MILSTD version. MILSTD 461G supercedes all other versions (A-F). (14) 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 Multiplier for LEDs	
Color	Multiplier from White 4000K
White, 4000K	1.00
Red, 630nm	0.32
Green, 520nm	0.78

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-LD4-4STDR63-277-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-LD4-4STDR63-277-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.

Product Specifications

Application

- Designed for use in 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/symmetric 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 mounting safety brackets (MSB4-PK), available as an accessory - order on separate line item

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, 1% or 10%

Compliance

- cULus listed for wet locations under covered ceilings
- Tested for ISO 5 compliance. ISO3 and ISO4 environments typically employ uni-directional vertical air-flow and a ventilated raised floor to remove airborne particles. Not uncommon for the entire ceiling to be either HEPA or ULPA filters. Filtered air is continually directed downward, passing through the ventilated raised floor, and recirculated – to remove more of the airborne particles than are created. Often, laminar-flow surface mount luminaires are used to illuminate the space. With proper air flow and air exchanges, This product is acceptable for use in ISO3+ environments.
- IP66 rated from below the luminaire/ceiling when specified in the ordering logic
- 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).

BABA Domestic Preference Compliance

- This Cooper product is manufactured in the US and meets the BABA cost of components rule. To verify a configured product with specific accessories and options meets BABA Domestic Preference Requirements; submit this catalog number to Cooper Lighting Quotation team for validation by our Engineering and Manufacturing teams. Our BABA designation is based on the minimum compliance requirement for BABA. Individual Government Agencies may have more stringent compliance standards. Please refer to the [DOMESTIC PREFERENCES](#) website or consult the CLS Domestic Preferences team for more information. Components shipped separately may be separately analyzed under domestic preference requirements.

Warranty

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

Lumen Calculator

Approximate CCT Multiplier	
2000K	0.67
2700K	0.95
3000K	0.98
3500K	1.00
4000K	1.00
5000K	1.01

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

Lens	Multiplier
A125	1.000
89BC	0.875
ASY	1.070
ASYR	1.012
ASY2	0.987
ASYR2	0.923
OPL	0.957

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

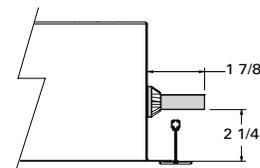
** Includes 2HI, 3LO, 3STD, 3HI

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

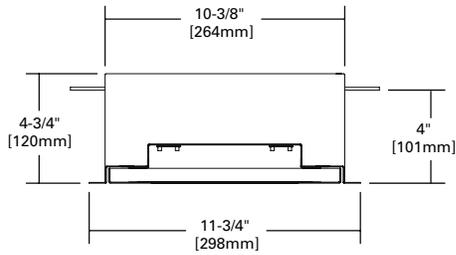
Factory wired on the side of fixture. Customer must remove split bushing and insert TP in housing in the field.



Dimensional and Mounting Details

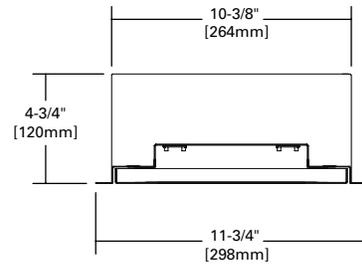
Flange

1' Wide, Inset Door

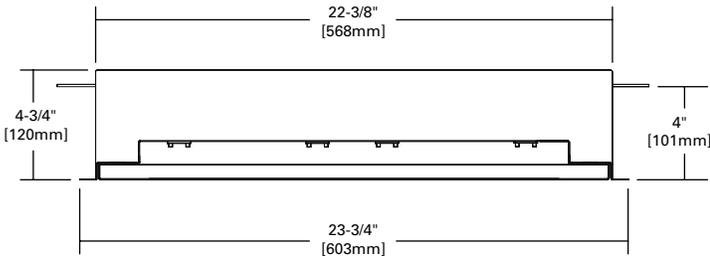


Grid

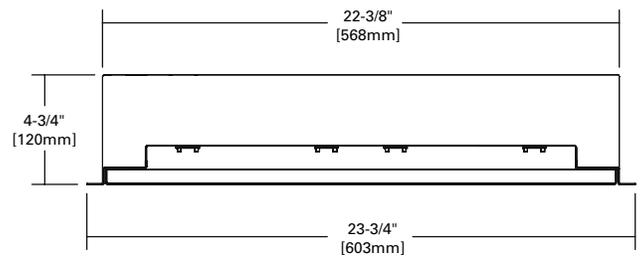
1' Wide, Inset Door



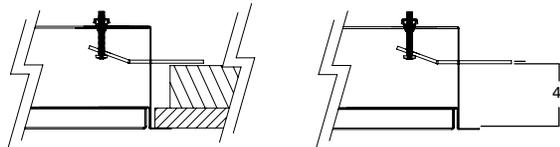
2' Wide, Inset Door



2' Wide, Inset Door



Mounting Bracket - Standard (ORL-F)



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"