

| | | | | | |
|-------------|--|-----------|--|------|--|
| Project | | Catalog # | | Type | |
| Prepared by | | Notes | | Date | |



Fail-Safe

ORL | LD4 LED

Operating Room Inset Door
Recessed Grid, Recessed Flange LED
1' x 4', 2' x 2' and 2' x 4'; Wet Location

Typical Applications:

Healthcare • Operating Rooms • Surgical Suites

Interactive Menu

- Order Information [page 2](#)
- Product Specifications [page 3](#)
- Input Watts/Delivered Lumens [page 4](#)
- Product Warranty

Product Certification



Product features



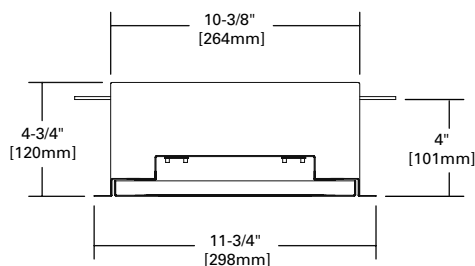
Top Product Features

- Asymmetric operating room lighting; Recessed grid or flange
- Multiple lumen packages up to 28,000 lumens; Various lens options
- Die-formed heavy gauge steel housing and door; Fully gasketed for Wet Location listing
- IP66 rated, NSF listed and MILSTD 461G compliant; Green and red LEDs available
- 2000K, 2700K, 3000K, 3500K, 4000K and 5000K CCT; 80 and 90 CRI

Dimensional and Mounting Details

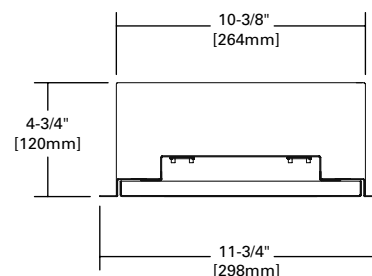
Flange

1' Wide, Inset Door



Grid

1' Wide, Inset Door



[additional product diagrams](#)

Order Information

SAMPLE ORDER NUMBER: **ORLF-24-4-ALH-INA-ASYR-LD4-4HI-40-120-ED1D2 (White only)**
ORLG-24-2-ALH-INA-ASYR-LD4-4HI40/2HIG52-277-ED1D2 (White/Green)
ORLG-24-4-ALH-INA-ASYR-LD4-4STD63-120-ED1D2 (Red only)

| Product Family | Width | Length | Housing Material | Door Type | Lens | LEDs | No of LEDs |
|---|---|---|---|--|--|-------------------------------------|---|
| Product Family | Width | Length | Housing Material | Door Type | Lens | LEDs | No of LEDs ⁽⁴⁾ |
| ORLF =Recessed Flange ⁽¹⁾ ORLG =Recessed Grid (1", 1-1/2", NEMA G) ⁽²⁾ | 24 =24" Wide 12 =12" Wide ⁽⁸⁾ | 2 =2' Length ⁽⁸⁾ 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 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) | ASY =Asymmetric Lens (Add "C" to end of lens to include .125" clear acrylic underlay. Ex. ASYC) ASYR =Asymmetric Lens with RFI grid (Add "C" to end of lens to include .125" clear acrylic underlay. Ex. ASYRC) 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) | 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) Flange ships standard with (4) brackets for quick and easy installation. (2) 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 (8) ORL not available in 1x2. | Notes (8) ORL not available in 1x2. | | | | | Notes (4) 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 ⁽⁶⁾ | Color Temperature | Voltage | Driver | No. of Circuits | Options | Accessories (Ordered Separately) |
| 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 ⁽⁶⁾ 4 =4 Circuits | EL7W =7W EM Pack ^{(3), (4), (9)} EL10W =10W EM Pack ^{(3), (4)} EL14W =14W EM Pack ^{(3), (4), (9)} EL20W =20W EM Pack ^{(3), (4)} EMRA =Emergency installed for room-side access ^{(3), (4)} MSB4 =Mounting Safety Brackets (4) with hardware CPH =Continuous piano hinge MIL1 =MILSTD 461G compliant, one filter for single circuit ^{(4), (5), (9), (10)} MIL2 =MILSTD 461G compliant, two filters for dual circuits ^{(4), (5), (9), (10)} MIL3 =MILSTD 461G compliant, three filters for 3 circuits ^{(4), (5), (9), (10)} 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 (4) 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 (6) Outermost two modules on one circuit, next outermost modules on 2nd circuit, remaining module(s) on 3rd circuit. | Notes (3) 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. (4) 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. (5) ASR or 89BC lens options must be used for MILSTD 461G compliance. (9) EL7W and EL14W not available with MILSTD 461G. (10) MILSTD 461G is the latest MILSTD version. MILSTD 461G supercedes all other versions (A-F). | *Change W to AMW for antimicrobial matte white finish |

Please see on left for ordering logic for multi-color LED application in combination: 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.

Red or Green LEDs always on separate circuit.

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

Thermal Protectors Required ⁽⁴⁾

| 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 ** |

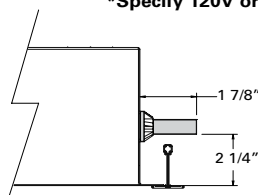
* Includes 3STD, 4LO, 4STD, 4HI, 5LO, 5STD, 5HI, 6LO, 6STD, 6HI

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

(4) Thermal protectors installed on side of fixture, located approximately 2-1/4" inches from bottom of fixture. Please specify voltage in the catalog ordering logic.

Thermal Protector Detail

*Factory installed on side of fixture
*Specify 120V or 277V



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

- Class 100 (ISO 5-8)
- cULus listed for wet locations under covered ceilings.
- IP66 rated
- MILSTD 461G compliant for conducted and radiated emissions
- NSF2 listed (non-food, splash zone)

Warranty

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

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 |

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 |

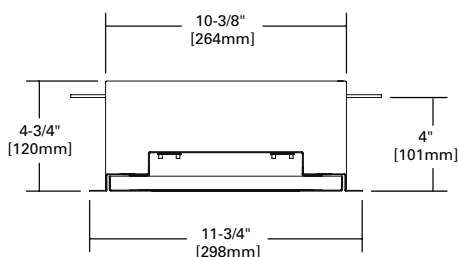
| Lens | Multiplier |
|------|------------|
| AS | 0.901 |
| ASR | 0.852 |
| A125 | 1.000 |
| 89BC | 0.875 |
| ASY | 1.070 |
| ASYR | 1.012 |

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

Dimensional and Mounting Details

Flange

1' Wide, Inset Door

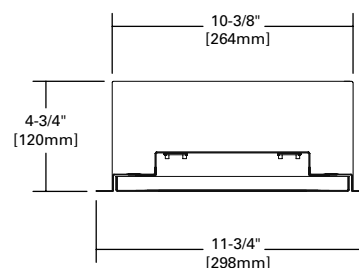


2' Wide, Inset Door



Grid

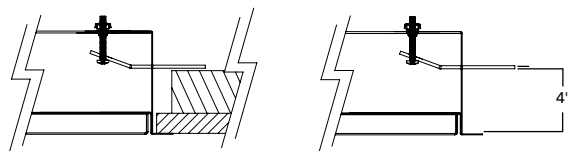
1' Wide, Inset Door



2' Wide, Inset Door



Mounting Bracket - Standard (ORL-F)



Cut-Out Dimensions

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