

# Cleanroom EL Amber Troffers

1x4, 2x2 and 2x4 Amber/White LED Luminaires

- **ETL Listed for Wet Locations**
- **IP55 Rated**
- **Suitable for ISO 5-9 Cleanspaces**
- **Suitable for FED Std 209E Class 100-100,000 Cleanspaces**
- **Channel inset door frame**
- **Robotically seam welded housing**
- **Narrow spectrum non filtered 590nm true Amber LEDs**
- **White/Amber separately controlled circuits**
- **Recessed housing suitable for Tbar Grid and Hardlid installations**
- **Made in the USA by a Family Owned US Corporation**



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## ORDERING GUIDE

Series Installation Type Material Size Amber LED White LED CCT (White LED) Voltage Options

**EL**

| Series     | Installation Type  | Material   | Size                                    | Amber LED       | White LED       | CCT (White LED) | Voltage         | Options   |
|------------|--|--|---|-----------------|-----------------|-----------------|-----------------|---|
| EL         | R: Recessed<br>(Suitable for Flange & Grid Installations)  | 3: White 430 SS Hsg. & Polished 304 SS Door<br>4: White AL Hsg. & Polished 304 SS Door<br>5: White AL Hsg. & White AL Door | 1x4: 1' x 4' Housing                    | 1/YLED590       | 1/LEDR          | 83 CRI:         | 120V            | <b>FC:</b> Fuse & Holder (One Supplied Per Circuit)<br><b>2/EDW:</b> Two Circuits of White Light<br><b>UNV:</b> Two Circuits of Yellow Light<br><b>EDL:</b> -40F Electronic Driver<br><b>EM10:</b> 10W Integral LED EM (Specify Input Voltage)<br><b>EM20:</b> 20W Remote LED EM (Specify Input Voltage)<br><b>WHT:</b> White Finished Door & HSG<br><b>LEX:</b> .125" Prismatic Polycarbonate<br><b>A19:</b> .156" Prismatic P19 Pattern Clear Acrylic<br><b>HIA:</b> .140" High Impact P12 Pattern Clear Acrylic<br><b>TG:</b> .156" Prismatic Tempered Glass<br><b>SW:</b> Wet Location Hub Supplied (not installed)<br><b>PxL:</b> Programmed to User Specified Lumen Value.<br><b>PxW:</b> Programmed to User Specified Wattage Value.<br><b>10KV:</b> 10KV Parallel Surge Protection (One Supplied Per Circuit)<br><b>GTD:</b> Generator Transfer Device<br><b>WHIP:</b> Must Specify Length and Wire Qty<br><b>.125 FROST:</b> 1/8" Frost Acrylic Lens<br><b>HF1:</b> 1% Dimming for 2x2 with LEDHF<br><b>OCCMW:</b> Internal microwave OCC Sensor |
|            |  |  | MAX 3 Arrays Total<br>(2 Max Per Color) | 2/YLED590       | 1/LEDH          | 830 = 3000K CCT | 277V            |   |
|            |  |  | 2x2: 2' x 2' Housing                    | 1/YLED590       | 1/LEDR          | 835 = 3500K CCT | 347V*           |   |
|            | MAX 4 Arrays Total<br>OR   | 2/YLED590  | 1/LEDH                                  | 840 = 4000K CCT |                 |                 |                 |   |
|            | 2x4: 2' x 4' Housing   | 1/YLED590  | 1/LEDH                                  | 850 = 5000K CCT |                 |                 |                 |   |
|            | MAX 4 Arrays Total   | 4/YLED590  | 2/LEDH                                  | 90+ CRI:        |                 |                 |                 |   |
| S: Surface | 2: White CRS Hsg. & Polished 304 SS Door<br>3: Polished 304 SS Hsg. & Polished 304 SS Door<br>4: White AL Hsg. & Polished 304 SS Door<br>5: White AL Hsg. & White AL Door<br>6: White CRS Hsg. & White AL Door | 1x4: 1' x 4' Housing   | 1/YLED590                               | 1/LEDR          | 935 = 3500K CCT |                 |                 |   |
|            |  |  | MAX 2 Arrays Total                      | 2/YLED590       | 1/LEDH          |                 | 940 = 4000K CCT |   |
|            |  |  | 2x2: 2' x 2' Housing                    | 1/YLED590       | 1/LEDR          |                 | 950 = 5000K CCT |   |
|            | MAX 4 Arrays Total<br>OR   | 2/YLED590  | 1/LEDH                                  |                 |                 |                 |                 |   |
|            | 2x4: 2' x 4' Housing   | 1/YLED590  | 1/LEDH                                  |                 |                 |                 |                 |   |
|            | MAX 4 Arrays Total   | 4/YLED590  | 2/LEDH                                  |                 |                 |                 |                 |   |

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## SPECIFICATIONS

**HOUSING:** One piece, hole free, robotically seam welded housing has flattened knockouts for a superior seal. Recessed housings are available in .040" 3003 Aluminum or 20Ga 430 Stainless Steel. Surface housings are available in .040" 3003 Aluminum, 20Ga 430 Stainless Steel, or 20Ga 1008 Cold Rolled Steel.

**DOOR FRAME:** Inset door frame made from welded channels regresses into the housing to allow the neoprene gasket to seal to the housing. Door frame is hinged by aircraft cables and secures to housing with captive stainless steel pan head screws. Available in .040" 3003 Powder coated Alum. , 20Ga 304 Polished SS.

**GASKETS:** Closed cell 100% pure neoprene gasket with vulcanized corners making a one-piece oil and solvent resistant gasket system.

**LENS:** Impact resistant .135" thick virgin acrylic with P12 prismatic pattern inverted. See "Options" for other choices.

**LEDs:** Fixture available with Amber only or Amber & White LED's, each color will be supplied with its own driver for dual switching. Amber LED's provide a narrow 590nm spectrum for wavelength sensitive applications. White high efficiency LEDs are commercially available & in a wide variety of CRI and CCT. All boards have zhaga recognized hole patterns and come with a 5 year warranty.

**DRIVERS:** Standard Universal Voltage Class 2 drivers are 0-10v Dimmable to 1% for most LED configurations. They come with at least 2.5Kv surge protection, have less than 10% THD at max load, Ballast Factor Greater than .95 and are programmable to match specific lumen or wattage requirements. Drivers with higher input voltage ratings are available, consult factory for driver specifications. (each color LED comes standard with its own driver)

**REFLECTOR:** Die formed metal with high reflectance white polyester powder coat finish. Typical reflectivity 92%.

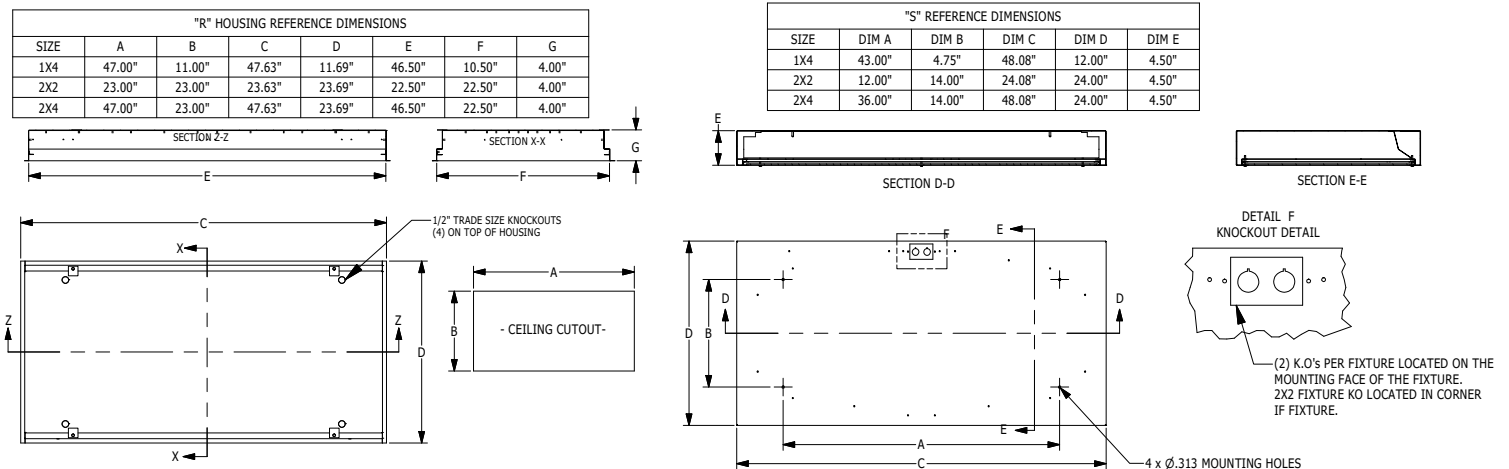
**INSTALL RECESSED:** One fixture suitable for Grid and Flanged installation. Accommodates 1" and 1.5" T-Bar Grid (Consult factory for 2" T-Bar Grid compatibility). Four adjustable toggle arms with holes for seismic support wire attachment. Supply entry via 1/2" trade size flattened knockouts. Non-IC installation

**INSTALL SURFACE:** Four .312" dia. mounting holes and a removable gasketed wiring access plate with Supply entry via 1/2" trade size flattened knockouts.

**FINISH:** Gloss white high reflectance 1000 hr. salt spray polyester powder coat finish standard for all housings. Stainless steel doorframes are satin polished unless option WHT is chosen.

**LISTINGS:** IP55 rated for dust and water ingress. ETL listed per UL\_1598 for wet locations. Chicago Plenum Rated. Certified ISO-14644-1 for class 5 through class 9 cleanspaces. Certified Fed Std 209E for Class 100 through Class 100,000 cleanspaces. Optionally NSF2 Listed for Non-Food Zones. Drivers and LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

## PRODUCT DRAWINGS



# Cleanroom EL Amber Troffers

1x4, 2x2 and 2x4 Amber/White LED Luminaires

## ENERGY DATA - WHITE LED

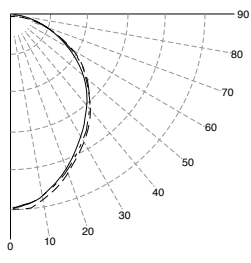
| CHANNEL-FGRS-AMBER LED TROFFER |               |          |        |       |          |         |       |          |                     |                      |
|--------------------------------|---------------|----------|--------|-------|----------|---------|-------|----------|---------------------|----------------------|
| ENCLOSURE SIZE                 | LED SELECTION | DIMMING  | 83 CRI |       |          | 90+ CRI |       |          | AMBIENT TEMP RATING |                      |
|                                |               |          | LUMENS | WATTS | EFFICACY | LUMENS  | WATTS | EFFICACY | MINIMUM             | MAXIMUM <sup>3</sup> |
| 1x4                            | 1LEDR         | 0-10V 1% | 4,673  | 37    | 125      | 2,880   | 34    | 85       | -20°C (-4°F)        | 40°C (104°F)         |
| 1X4                            | 1LEDH         | 0-10V 1% | 6,669  | 51    | 130      | 6,200   | 74    | 84       | -20°C (-4°F)        | 40°C (104°F)         |
| 1X4                            | 1LEDHF        | 0-10V 1% | 7,900  | 83    | 95       | 8,030   | 91    | 88       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 1LEDR         | 0-10V 1% | 2,300  | 19    | 121      | 1450    | 17    | 85       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 1LEDH         | 0-10V 1% | 3,270  | 27    | 121      | 2800    | 37    | 76       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 1LEDHF        | 0-10V 5% | 5,200  | 43    | 121      | 4,190   | 46    | 91       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 2LEDR         | 0-10V 1% | 4,684  | 37.4  | 125      | 2953    | 32    | 92       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 2LEDH         | 0-10V 1% | 6,551  | 51.2  | 128      | 5645    | 73    | 77       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 2LEDHF        | 0-10V 5% | 10,400 | 86    | 121      | 8,380   | 92    | 91       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 3LEDR         | 0-10V 1% | 6,985  | 55.2  | 127      | 4498    | 48    | 94       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 3LEDH         | 0-10V 1% | 9,951  | 76.9  | 129      | 8972    | 110   | 82       | -20°C (-4°F)        | 40°C (104°F)         |
| 2x2                            | 3LEDHF        | 0-10V 5% | 15,600 | 129   | 121      | 12,570  | 138   | 91       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 1LEDR         | 0-10V 1% | 4,700  | 38    | 124      | 3200    | 32    | 100      | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 1LEDH         | 0-10V 1% | 7,000  | 51    | 137      | 6,500   | 75    | 87       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 1LEDHF        | 0-10V 1% | 8,800  | 70    | 126      | 8,953   | 93    | 96       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 2LEDR         | 0-10V 1% | 9,625  | 74    | 130      | 6,567   | 62    | 106      | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 2LEDH         | 0-10V 1% | 14,271 | 103   | 138      | 13,028  | 148   | 88       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 2LEDHF        | 0-10V 1% | 17,600 | 140   | 126      | 17,905  | 187   | 96       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 3LEDR         | 0-10V 1% | 14,380 | 111   | 129      | 9,856   | 94    | 105      | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 3LEDH         | 0-10V 1% | 20,949 | 153   | 137      | 19,667  | 221   | 89       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 3LEDHF        | 0-10V 1% | 26,400 | 210   | 126      | 26,858  | 280   | 96       | -20°C (-4°F)        | 40°C (104°F)         |

<sup>1</sup> DELIVERED LUMEN DATA IS EXTRAPOLATED FROM MEASURED DATA @25C WITH NO EXTRA OPTIONS. VARIANCES WILL OCCUR WHEN OTHER SELECTIONS ARE MADE  
<sup>2</sup> WATTAGE IS MEASURED WITH LED 840 SELECTION @ 120VAC AND Tambient = 25C. WATTAGES WILL VARY AND INCREASE WHEN ALTERNATE OPTIONS ARE SELECTED  
<sup>3</sup> MAX AMBIENT TEMP RATING, NON-IC INSTALLATON. TEMP RATING IS WITH NO OTHER OPTIONS SELECTED. WHITE LEDS ONLY SUITABLE FOR 40C AMBIENT

## PHOTOMETRICS

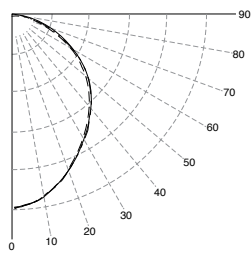
### EL-R-5-1X4-1/LEDH-840-UNV

Report No: 20895  
 Total Lumens: 6,669  
 Wattage: 51.12  
 Efficacy: 130.5 (Lumens Per Watt)  
 Fixture Size: 1'x4'  
 Key:  
 --- 0  
 - - - 45  
 ——— 90



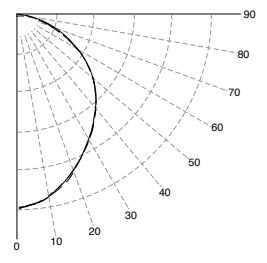
### EL-R-5-2X2-3/LEDH-840-UNV

Report No: 20900  
 Total Lumens: 9,951  
 Wattage: 76.83  
 Efficacy: 129.5 (Lumens Per Watt)  
 Fixture Size: 2'x2'  
 Key:  
 --- 0  
 - - - 45  
 ——— 90



### EL-R-5-2X4-3/LEDH-840-UNV

Report No: 20905  
 Total Lumens: 20,949  
 Wattage: 153.11  
 Efficacy: 136.8 (Lumens Per Watt)  
 Fixture Size: 2'x4'  
 Key:  
 --- 0  
 - - - 45  
 ——— 90



# Cleanroom EL Amber Troffers

1x4, 2x2 and 2x4 Amber/White LED Luminaires

## ENERGY DATA - COLOR LED

| CHANNEL-FGRS-AMBER LED TROFFER |               |          |               |       |          |                     |                      |
|--------------------------------|---------------|----------|---------------|-------|----------|---------------------|----------------------|
| ENCLOSURE SIZE                 | LED SELECTION | DIMMING  | 590nm (AMBER) |       |          | AMBIENT TEMP RATING |                      |
|                                |               |          | LUMENS        | WATTS | EFFICACY | MINIMUM             | MAXIMUM <sup>3</sup> |
| 1X4                            | 1YLED         | 0-10V 1% | 2,119         | 43    | 49       | -20°C (-4°F)        | 40°C (104°F)         |
| 1X4                            | 2YLED         | 0-10V 1% | 4,237         | 86    | 49       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X2                            | 1YLED         | 0-10V 1% | 1,168         | 22    | 53       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X2                            | 2YLED         | 0-10V 1% | 2,337         | 43    | 54       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X2                            | 3YLED         | 0-10V 1% | 3,505         | 65    | 54       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X2                            | 4YLED         | 0-10V 1% | 4,673         | 86    | 54       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 1YLED         | 0-10V 1% | 2,482         | 44    | 56       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 2YLED         | 0-10V 1% | 4,964         | 87    | 57       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 3YLED         | 0-10V 1% | 7,446         | 130   | 57       | -20°C (-4°F)        | 40°C (104°F)         |
| 2X4                            | 4YLED         | 0-10V 1% | 9,928         | 173   | 57       | -20°C (-4°F)        | 40°C (104°F)         |

\* View previous page for energy data notes.

## COLOR LED RELATIVE DISTRIBUTION

