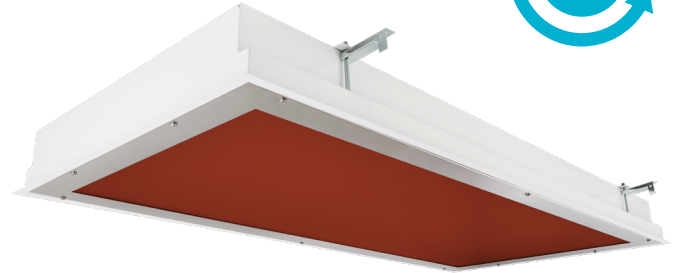


Cleanroom TL Vivarium Troffers - Tunable White

1x4, 2x2 and 2x4 Red/White LED Luminaires.



- **Rated IP65**
- **Suitable for ISO 3-9 Cleanspaces**
- **Suitable for 209E class 100-100,000 Cleanspaces**
- **ETL listed for Wet Locations**
- **One piece Inset Doorframe**
- **Robotically seam welded housing**
- **Tunable White 2700k - 6500k CCT**
- **Available With DALI Or 0-10V Controls**
- **Narrow Spectrum 630nm and 660nm Red LEDs**
- **White / Red separately controlled circuits**
- **Recessed Housing suitable for Tbar Grid AND Hardlid Installations**
- **Made in the USA by a Family Owned US Corporation**



DISCLAIMER: Although KURTZON has prepared the information contained in this document with all due care, KURTZON does not warrant or represent that the information is free from errors or omission. While the information is considered to be true and correct at the date of publication, changes in circumstances after the time of publication may impact on the accuracy of the information. The information may change without notice and KURTZON is not in any way liable for the accuracy of any information printed and stored or in any way interpreted or used.

ORDERING GUIDE

| Series | Installation Type | Material | Size | Red LED | Wavelength | White LED | CCT (White LED) | Control | Voltage | Options |
|--------|---|---|---|------------------|--------------------------|--------------------|-------------------------------------|---|---------|---|
| TL | R: Recessed (Suitable for Flange & Grid Installations) | 3: White 430 SS Hsg. & Polished 304 SS Door 4: White AL Hsg. & Polished 304 SS Door 5: White AL Hsg. & White AL Door 7: White AL Hsg. & White CRS Door | 1x4: 1' x 4' Housing MAX 3 Arrays Total <i>(2 Max Per Color)</i> 2x2: 2' x 2' Housing MAX 4 Arrays Total OR 2x4: 2' x 4' Housing MAX 4 Arrays Total | 1/RLED 2/RLED | 630: 630nm 660: 660nm | 1/LEDTW 2/LEDTW | 827/865: 80 CRI; 2700k-6500k CCT | 0-10v Analog Dimming 10V-CON: Continuous CCT 0-10v dimming 10V-WD: Warm Dim 0-10V dimming | UNV | FC: Fuse & Holder (One Supplied Per Circuit) 2/EDR: Two Circuits of Red Light EM10: 10W Integral LED EM (Specify Input Voltage) EM20: 20W External LED EM (Specify Input Voltage) WHT: White Finished Door & HSG LEX: .125" Prismatic Polycarbonate A19: .156" Prismatic P19 Pattern Clear Acrylic HIA: .140" High Impact P12 Pattern Clear Acrylic TG: .156" Prismatic Tempered Glass SW: Wet Location Hub Supplied (not installed) PxL: Programmed to User Specified Lumen Value. PxW: Programmed to User Specified Wattage Value. 10KV: 10KV Parallel Surge Protection (1 Per Circuit) WHIP: Must Specify Length and Wire Qty .125 FROST: 1/8" Frost Acrylic Lens OCMW: Internal microwave OCC Sensor |
| | S: Surface | 1: White CRS Hsg. & White CRS Door 2: White CRS Hsg. & Polished 304 SS Door 3: Polished 304 SS Hsg. & Polished 304 SS Door 4: White AL Hsg. & Polished 304 SS Door 5: White AL Hsg. & White AL Door 6: White CRS Hsg. & White AL Door 7: White AL Hsg. & White CRS Door | 1x4: 1' x 4' Housing MAX 2 Arrays Total 2x2: 2' x 2' Housing MAX 4 Arrays Total OR 2x4: 2' x 4' Housing MAX 4 Arrays Total | 1/RLED 2/RLED | 630: 630nm 660: 660nm | 1/LEDTW 2/LEDTW | 827/865: 80 CRI; 2700k-6500k CCT | 0-10v Analog Dimming 10V-CON: Continuous CCT 0-10v dimming 10V-WD: Warm Dim 0-10V dimming | UNV | FC: Fuse & Holder (One Supplied Per Circuit) 2/EDR: Two Circuits of Red Light EM10: 10W Integral LED EM (Specify Input Voltage) EM20: 20W External LED EM (Specify Input Voltage) WHT: White Finished Door & HSG LEX: .125" Prismatic Polycarbonate A19: .156" Prismatic P19 Pattern Clear Acrylic HIA: .140" High Impact P12 Pattern Clear Acrylic TG: .156" Prismatic Tempered Glass SW: Wet Location Hub Supplied (not installed) PxL: Programmed to User Specified Lumen Value. PxW: Programmed to User Specified Wattage Value. 10KV: 10KV Parallel Surge Protection (1 Per Circuit) WHIP: Must Specify Length and Wire Qty .125 FROST: 1/8" Frost Acrylic Lens OCMW: Internal microwave OCC Sensor |

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1x4, 2x2 and 2x4 Red/White LED Luminaires.

SPECIFICATIONS

HOUSING: One piece, hole free, robotically seam welded housing has flattened knockouts for a superior seal. Recessed housings are available in 20Ga 430 Stainless Steel or 20Ga Cold Rolled Steel. Surface housings are available in 20Ga 304 Stainless Steel or 20Ga Cold Rolled Steel.

DOOR FRAME: One piece door frame with welded corners overlaps the fixture allowing the NSF approved microcellular gasket to seal to the mounting surface. Door frame is secured to the housing with torsion springs for a crevice free door frame that can be opened without tools. Available in 20Ga 304 Polished SS, or 18Ga Powder coated CRS.

GASKETS: NSF Listed closed cell microcellular extruded KleanLock SealPro 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. Sealed to door with NSF listed RTV silicone. See "Options" for other choices.

TUNABLE WHITE LEDES: Commercially available minimum 80 CRI 2 channel LED modules use 2700K and 6500K chips to mix color in order to achieve a desired color temperature. Modules have rated lifetime of L70 > 50,000 hrs and efficacy of 165Lm/W . See LED options to specify a custom range of Color temperatures. Consult factory for lumen output configurations not listed on spec sheets.

RED LEDES: Red LED's provide a narrow 630nm spectrum light for wavelength sensitive applications. Alternately available are 660nm narrow spectrum LEDES for a wider range of applications.

TUNABLE WHITE DRIVERS: Dual Channel Programmable Drivers make color tuning simple. Available in 0-10v Analog Dimming or DALI digital dimming. The 0-10v continuous dimming method uses two sets of dimming wires. 1 set of dimming wires controls the luminous flux while maintaining consistent color and the other set controls the color in a linear dimming curve. 0-10v is also available as warm dimming that uses 1 set of dimming wires that adjust both intensity and color simultaneously. Alternately control is available with DALI Digital Dimming as well.

RED DRIVERS: Standard Universal Voltage Class 2 drivers are 0-10v Dimmable to 1% . 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. RED LED's come with their own driver so they can be switched separately from the white LEDES.

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

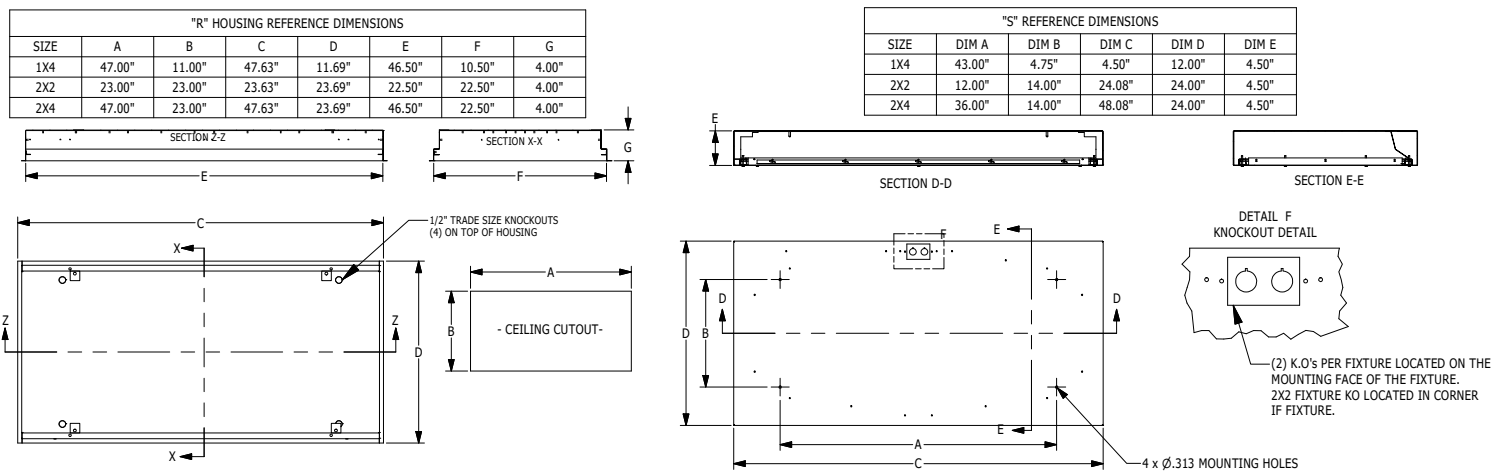
INSTALL RECESSED: One fixture suitable for Grid and Flanged installation. Accommodates 1" and 1.5" T-Bar Grid (Consult factory for 2" T-Bar Grid compatibility). Four adjustable toggle arms with holes for seismic support wire attachment. Supply entry via 1/2" trade size flattened knockouts.

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 recessed housings. Stainless steel doorframes and surface housings are satin polished unless option WHT is chosen

LISTINGS: IP66 rated for dust and water ingress. Suitable for 1700 PSI high pressure hosedowns. ETL listed per UL_1598 for wet locations. Chicago Plenum Rated. Certified ISO-14644-1 for class 3 through class 9 cleanspaces. Certified Fed Std 209E for Class 1 through Class 100,000 cleanspaces. NSF2 Listed for Food Zones. Drivers and LEDES are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

PRODUCT DRAWINGS



Cleanroom TL Vivarium Troffers - Tunable White

1x4, 2x2 and 2x4 Red/White LED Luminaires.

ENERGY DATA - WHITE LED

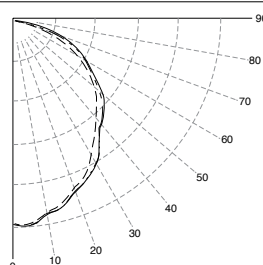
| INSET-FGRS-RED LED TROFFER | | | | | | |
|----------------------------|---------------|------------------------------|-------|----------|-------------------------------|---------------|
| ENCLOSURE SIZE | LED SELECTION | Tunable White 80 CRI (4000K) | | | MAX AMBIENT TEMP ³ | CCT RANGE |
| | | LUMENS | WATTS | EFFICACY | | |
| 1x4 | 1LEDTW | 3,350 | 34 | 99 | 40°C (104°F) | 2700k - 6500k |
| 1X4 | 2LEDTW | 6,750 | 68 | 99 | 40°C (104°F) | 2700k - 6500k |
| 2x2 | 1LEDTW | 1,750 | 17 | 103 | 40°C (104°F) | 2700k - 6500k |
| 2x2 | 2LEDTW | 3,550 | 35 | 101 | 40°C (104°F) | 2700k - 6500k |
| 2x2 | 3LEDTW | 5,300 | 53 | 100 | 40°C (104°F) | 2700k - 6500k |
| 2x2 | 4LEDTW | 7,100 | 68 | 104 | 40°C (104°F) | 2700k - 6500k |
| 2X4 | 1LEDTW | 3800 | 35 | 109 | 40°C (104°F) | 2700k - 6500k |
| 2X4 | 2LEDTW | 7,650 | 68 | 113 | 40°C (104°F) | 2700k - 6500k |
| 2X4 | 3LEDTW | 11,500 | 103 | 112 | 40°C (104°F) | 2700k - 6500k |
| 2X4 | 4LEDTW | 15,350 | 135 | 114 | 40°C (104°F) | 2700k - 6500k |

- 1 DELIVERED LUMEN DATA IS CALCULATED BASED ON STATIC WHITE PHOTOMETRY @ 4000K CCT
- 2 WATTAGE IS MEASURED WITH 4000K SELECTION @ 120vAC AND Tambient = 25C. WATTAGES MAY VARY WITH ALTERNATE CONFIGURATIONS
- 3 EFFICACY CALCULATED USING 4000K CCT DATA.
- 4 MAX AMBIENT TEMP RATING, NON-IC INSTALLATON. TEMP RATING MAY VARY WITH SPECIFIED DRIVERS OR ANY NON STANDARD SELECTION
- 5 90 MINUTE 10W EMERGENCY DRIVER; LUMENS CALCULATED BASED ON FIXTURE EFFICACY.
- 6 EM10 DELIVERED LUMENS = (DELIVERED LUMENS/LUMINAIRE WATTS)*10

PHOTOMETRICS

TL-R-5-2X4-1/RLED-630-UNV

Report No: 19675.0
 Total Lumens: 1,228
 Wattage: 27.206
 Efficacy: 45.1 (Lumens Per Watt)
 Fixture Size: 2'x4'
 Key:
 - - - - - 0
 45
 _____ 90



Cleanroom TL Vivarium Troffers - Tunable White

1x4, 2x2 and 2x4 Red/White LED Luminaires.

ENERGY DATA - COLOR LED

| INSET-FGRS-RED LED TROFFER | | | | | | | | |
|----------------------------|---------------|-------------|-------|----------|-------------|-------|----------|-------------------------------|
| ENCLOSURE SIZE | LED SELECTION | 630nm (RED) | | | 660nm (RED) | | | MAX AMBIENT TEMP ³ |
| | | LUMENS | WATTS | EFFICACY | LUMENS | WATTS | EFFICACY | |
| 1X4 | 1RLED | 1,105 | 27 | 41 | 1,149 | 44.5 | 25.8 | 40°C (104°F) |
| 1X4 | 2RLED | 2,048 | 53 | 39 | 2,298 | 88.9 | 25.8 | 40°C (104°F) |
| 2X2 | 1RLED | 540 | 14 | 39 | 558 | 22.2 | 25.1 | 40°C (104°F) |
| 2X2 | 2RLED | 1001 | 27 | 37 | 1,116 | 44.5 | 25.1 | 40°C (104°F) |
| 2X2 | 3RLED | 1541 | 41 | 38 | 1,674 | 66.7 | 25.1 | 40°C (104°F) |
| 2X2 | 4RLED | 2002 | 53 | 38 | 2,232 | 88.9 | 25.1 | 40°C (104°F) |
| 2X4 | 1RLED | 1228 | 27 | 45 | 1,261 | 44.5 | 28.3 | 40°C (104°F) |
| 2X4 | 2RLED | 2275 | 53 | 43 | 2,522 | 89 | 28.3 | 40°C (104°F) |
| 2X4 | 3RLED | 3503 | 80 | 44 | 3,783 | 133.5 | 28.3 | 40°C (104°F) |
| 2X4 | 4RLED | 4550 | 106 | 43 | 5,044 | 178 | 28.3 | 40°C (104°F) |

* View previous page for energy data notes.

COLOR LED RELATIVE DISTRIBUTION

