

Cleanroom TL-R Red Troffers: TL-R-RED-TW

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

PRODUCT FEATURES

- ✓ **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**
- ✓ **0-10V 1% Dimming Standard**
- ✓ **Narrow Spectrum 630nm, 660nm, & 735nm Red Non-filtered LEDs**
- ✓ **White / Red Separately Controlled Circuits**
- ✓ **Recessed Housing Suitable for Tbar Grid & Hardlid Installations**
- ✓ **B.A.A. & B.A.B.A Compliant & Made in the USA by a Family Owned US Corporation**
- ✓ **Available as Warm Dim or as Separately Controlled Intensity & CCT**
- ✓ **Tunable White LEDs Allow a Full Range of CCTs from 2700K–6500K CCT**



ORDERING GUIDE

Series	Material	Size	Row Qty.	Red LED Wavelength	Row Qty.	White LED	CCT/CRI	Control	Voltage	Optics	Options	
TL-R						LEDTW						
Series	Material	Size	Light Source				Control	Voltage	Optics			
			Row Qty.	Red LED Wavelength	Row Qty.	White LED					CCT/CRI	
TL-R	1	White CRS Hsg. & White CRS Door	1x2 1' x 2' Housing	1	RLED630	1	LEDTW	80 CRI:	10VA	0-10V Analog Control	120V	P12ACR 0.135" P12 Prismatic Impact Resistant Acrylic (Inverted)
		1x4 1' x 4' Housing	2	RLED660	2	827/ 865 2700K-6500K	277V	LEX 0.125" P12 Prismatic Polycarbonate (Inverted)				
	2	White CRS Hsg. & Polished 304 SS Door	3 LED Rows Max		RLED735			10VWD	0-10V Warm Dim Control	UNV	A19 0.156" A19 Prismatic Impact Resistant Acrylic (Inverted)	
		2x2 2' x 2' Housing	2			1	TG 0.156" Prismatic Tempered Glass (Inverted)					
	3	White 430 SS Hsg. & Polished 304 SS Door	OR	3		2	927/965 2700K-6500K		HIA 0.140" P12 Prismatic High Impact Resistant Acrylic (Inverted)			
		2x4 2' x 4' Housing	4		3	FROST 0.125" Flat Diffusing Frost Acrylic						
	4	White AL Hsg. & Polished 304 SS Door	5 LED Rows Max					2DBW 0.125" Flat Diffused Acrylic with Bi-Directional Batwing Distribution				
	5	White AL Hsg. & White AL Door						LBW 0.125" Flat Diffused Acrylic with Linear Batwing Distribution				
	6	White CRS Hsg. & White AL Door						GH85 0.125" Flat Diffused Acrylic with Glare Suppression Distribution				
	7	White AL Hsg. & White CRS Door										
	NOTE: P12ACR option is standard and will be provided when no other option is selected											
	Options											
	SW Wet Location Hub Supplied (not installed)											
PxL * Programmed to User Specified Lumen Value.												
PxW * Programmed to User Specified Wattage Value.												

Ordering Notes, If Applicable

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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, 20Ga 430 Stainless Steel, or 20Ga Cold Rolled Steel.

DOOR FRAME: One piece inset door frame with seam welds regressing into housing to allowing the NSF approved microcellular 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, or 18Ga 1008 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. GG option provides a loose 1/8" thick adhesive backed gasket intended to adhere to the top face of a suspended grid ceiling for grid profiles that do not already have gasket on them.

OPTICS: Standard P12 prismatic acrylic lens is provided when no other options are selected. All prismatic lensing options come with an inverted lens so the smooth side faces the room for easy cleaning. All optics are sealed to the door with NSF listed RTV silicone sealant. Other optics are available, consult factory for more information or options not listed.

LEDs: Fixture available with Red only or Red & White LEDs, each color will be supplied with its own driver for dual switching. Red LED's provide a narrow 630nm, 660nm, or 735nm spectrum light for wavelength sensitive applications. White high efficiency LEDs are commercially available minimum 80 or 90 CRI 2 channel LED modules and 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. LEDs are controllable via 0-10v dimming, see next page for control options. Consult factory for lumen output configurations not listed on spec sheets.. 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% and rated -20C (-4F). 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)

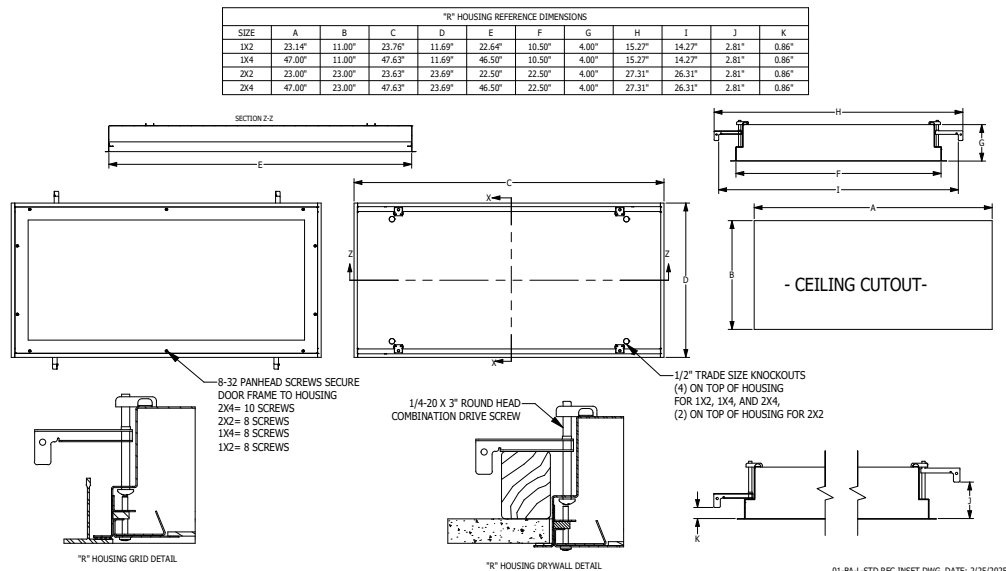
REFLECTOR: Die formed metal with high reflectance white polyester powder coat finish. Typical reflectivity 92%.

INSTALLATION: Suitable for recessed Non-IC installation into covered ceilings. Fixtures are supplied with .875" flattened knockouts for supply entry. Recessed housings have (4) swing out toggle arms that are used to draw the fixture in to the ceiling for hard lid installation without the need for a yoke hanger. The toggle arm adjuster bolts are accessible from the room side of the luminaire and the actual toggles can be used as means of establishing a seismic support for lay in ceiling installations. Confirm ceiling compatibility with dimension drawings below.

FINISH: Stainless steel door frames are satin polished unless WHT or AMW options are selected. All other materials are provided with gloss high reflectance white polyester powdercoat with 1000hr salt spray test per ASTM B117. AMW option provides a white anti-microbial polyester powder coat to all exposed surfaces.

LISTINGS: IP65 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 100 through Class 100,000 cleanspaces. NSF2 Listed for Non-Food & Splash Zones. Drivers and LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty. This product Series is both Build America Buy America (B.A.B.A.) & Buy American Act (B.A.A.) compliant.

PRODUCT DRAWINGS



Cleanroom TL-R Red Troffers: TL-R-RED-TW

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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		
1X2	1LEDTW	1,608	17	95	40°C (104°F)	2700k - 6500k
1X2	2LEDTW	3,240	35	93	40°C (104°F)	2700k - 6500k
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

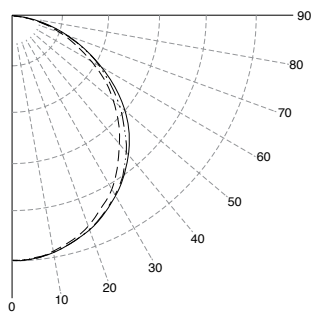
- 1 DELIVERED LUMEN DATA IS CALCULATED BASED ON STATIC WHITE PHOTOMETRY @ 4000K CCT
- 2 WATTAGE IS MEASURED WITH 4000K SELECTION @ 120vAC AND Tambient = 25C. WATTAGES MAY VARY WITH ALTERNATE CONFIGURATIONS
- 3 EFFICACY CALCULATED USING 4000K CCT DATA.
- 4 MAX AMBIENT TEMP RATING, NON-IC INSTALLATION. 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

P12 PRISMATIC

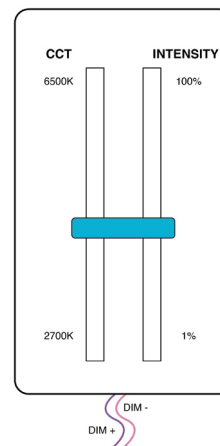
Key:

— 0
- - - 45
— 90



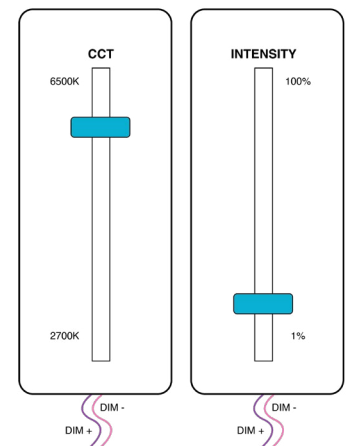
CONTROL OPTIONS

WARM DIM CONTROL



Only one set of dimming Leads are required. As Intensity is increased so is the CCT. As intensity decreases the CCT decreases to warmer color Temperatures.

CONTINUOUS CCT CONTROL



Two set of dimming leads are required. Intensity and CCT of light are controlled independently from one another.

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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	
1X2	1RLED	530	14	38	552	22.2	25	40°C (104°F)
1X2	2RLED	983	27	36	1,103	44.5	25	40°C (104°F)
1X4	1RLED	1,105	27	41	1,149	44.5	26	40°C (104°F)
1X4	2RLED	2,048	53	39	2,298	88.9	26	40°C (104°F)
2X2	1RLED	540	14	39	558	22.2	25	40°C (104°F)
2X2	2RLED	1001	27	37	1,116	44.5	25	40°C (104°F)
2X2	3RLED	1541	41	38	1,674	66.7	25	40°C (104°F)
2X2	4RLED	2002	53	38	2,232	88.9	25	40°C (104°F)
2X4	1RLED	1228	27	45	1,261	44.5	28	40°C (104°F)
2X4	2RLED	2275	53	43	2,522	89	28	40°C (104°F)
2X4	3RLED	3503	80	44	3,783	133.5	28	40°C (104°F)
2X4	4RLED	4550	106	43	5,044	178	28	40°C (104°F)

* View previous page for energy data notes.

NOTE: 735nm Far Red light is measured in radiometric power since the wavelengths are so close to the human non-visible light spectrums. Each module of 735nm LEDs generates ≈ 7,000 mW of radiometric power.

COLOR LED RELATIVE DISTRIBUTION

