

Cleanroom TL Amber Troffers

1x4, 2x2 and 2x4 Amber/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**
- **Narrow Spectrum 590nm True Amber LEDs**
- **White / Amber separately controlled circuits**
- **0-10v 1% Dimming Standard for most configurations**
- **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
TL								
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 (2 Max Per Color)	1/YLED590 2/YLED590	1/LEDR 1/LEDH 1/LEDHF	83 CRI: 830 = 3000K CCT 835 = 3500K CCT 840 = 4000K CCT 850 = 5000K CCT	120V 277V UNV 347V*	FC: Fuse & Holder (One Supplied Per Circuit) 2/EDW: Two Circuits of White Light 2/EDY: Two Circuits of Yellow Light EDL: -40F Electronic Driver EM10: 10W Integral LED EM (Specify Input Voltage) EM20: 20W Remote 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 (One Supplied Per Circuit) GTD: Generator Transfer Device WHIP: Must Specify Length and Wire Qty .125 FROST: 1/8" Frost Acrylic Lens HF1: 1% Dimming for 2x2 with LEDHF OCCMW: Internal microwave OCC Sensor
			2x2: 2' x 2' Housing MAX 4 Arrays Total OR 3/YLED590	1/YLED590 2/YLED590 3/YLED590	1/LEDR 1/LEDH 1/LEDHF	90+ CRI: 935 = 3500K CCT 940 = 4000K CCT 950 = 5000K CCT		
			2x4: 2' x 4' Housing MAX 4 Arrays Total	4/YLED590	2/LEDR 2/LEDH 2/LEDHF 3/LEDR 3/LEDH 3/LEDHF			
	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	1/YLED590 2/YLED590	1/LEDR 1/LEDH 1/LEDHF			
			2x2: 2' x 2' Housing MAX 4 Arrays Total OR 3/YLED590	1/YLED590 2/YLED590 3/YLED590	1/LEDR 1/LEDH 1/LEDHF			
			2x4: 2' x 4' Housing MAX 4 Arrays Total	4/YLED590	2/LEDR 2/LEDH 2/LEDHF 3/LEDR 3/LEDH 3/LEDHF			

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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 304 Stainless Steel, or 20Ga 1008 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.

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.

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%.

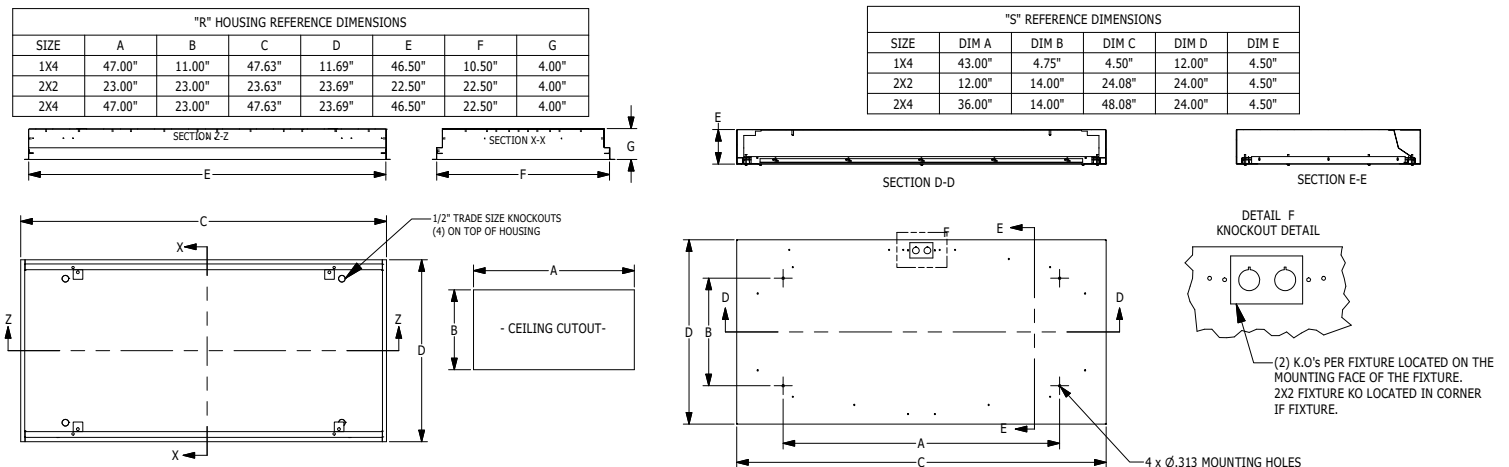
INSTALL RECESSED: One fixture suitable for Grid and Flanged installation. Accommodates 1" and 1.5" T-Bar Grid (Consult factory for 2" T-Bar Grid compatibility). Four adjustable toggle arms with holes for seismic support wire attachment. Supply entry via 1/2" trade size flattened knockouts.

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: 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. Drivers and LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

PRODUCT DRAWINGS



Cleanroom TL Amber Troffers

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ENERGY DATA - WHITE LED

INSET-FGRS-AMBER LED TROFFER										
ENCLOSURE SIZE	LED SELECTION	DIMMING	83 CRI			90+ CRI			AMBIENT TEMP RATING	
			LUMENS	WATTS	EFFICACY	LUMENS	WATTS	EFFICACY	MINIMUM	MAXIMUM ³
1x4	1LEDR	0-10V 1%	3,970	37	106	2,800	34	82	-20°C (-4°F)	40°C (104°F)
1x4	1LEDH	0-10V 1%	6,070	51	119	6,100	74	82	-20°C (-4°F)	40°C (104°F)
1x4	1LEDHF	0-10V 1%	7,700	83	93	7,227	91	79	-20°C (-4°F)	40°C (104°F)
2x2	1LEDR	0-10V 1%	2,090	19	110	1,450	17	85	-20°C (-4°F)	40°C (104°F)
2x2	1LEDH	0-10V 1%	2,770	27	103	2,750	37	74	-20°C (-4°F)	40°C (104°F)
2x2	1LEDHF	0-10V 5%	4,500	43	105	3,691	46	80	-20°C (-4°F)	40°C (104°F)
2x2	2LEDR	0-10V 1%	4,190	37.4	112	2,852	32	89	-20°C (-4°F)	40°C (104°F)
2x2	2LEDH	0-10V 1%	5,560	51.2	109	5,414	73	74	-20°C (-4°F)	40°C (104°F)
2x2	2LEDHF	0-10V 5%	9,000	83	108	7,383	92	80	-20°C (-4°F)	40°C (104°F)
2x2	3LEDR	0-10V 1%	6,290	55.2	114	4,313	48	90	-20°C (-4°F)	40°C (104°F)
2x2	3LEDH	0-10V 1%	8,450	76.9	110	8,604	110	78	-20°C (-4°F)	40°C (104°F)
2x2	3LEDHF	0-10V 5%	13,500	129	105	11,074	138	80	-20°C (-4°F)	40°C (104°F)
2x4	1LEDR	0-10V 1%	4,520	38	119	3,200	32	100	-20°C (-4°F)	40°C (104°F)
2x4	1LEDH	0-10V 1%	7,080	51	138	6,400	75	85	-20°C (-4°F)	40°C (104°F)
2x4	1LEDHF	0-10V 1%	8,500	75	113	8,836	93	95	-20°C (-4°F)	40°C (104°F)
2x4	2LEDR	0-10V 1%	9,040	74	122	6,429	62	104	-20°C (-4°F)	40°C (104°F)
2x4	2LEDH	0-10V 1%	14,450	103	140	12,835	148	87	-20°C (-4°F)	40°C (104°F)
2x4	2LEDHF	0-10V 1%	17,000	140	121	17,672	187	95	-20°C (-4°F)	40°C (104°F)
2x4	3LEDR	0-10V 1%	13,560	111	122	9,646	94	103	-20°C (-4°F)	40°C (104°F)
2x4	3LEDH	0-10V 1%	21,220	153	139	19,254	221	87	-20°C (-4°F)	40°C (104°F)
2x4	3LEDHF	0-10V 1%	25,500	210	121	26,508	280	95	-20°C (-4°F)	40°C (104°F)

¹ DELIVERED LUMEN DATA IS EXTRAPOLATED FROM MEASURED DATA @25C WITH NO EXTRA OPTIONS. VARIANCES WILL OCCUR WHEN OTHER SELECTIONS ARE MADE

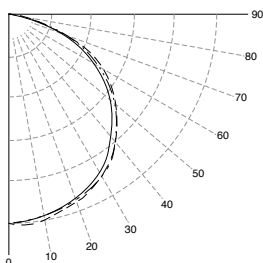
² WATTAGE IS MEASURED WITH LED 840 SELECTION @ 120vAC AND Tambient = 25C. WATTAGES WILL VARY AND INCREASE WHEN ALTERNATE OPTIONS ARE SELECTED

³ MAX AMBIENT TEMP RATING, NON-IC INSTALLATION. TEMP RATING IS WITH NO OTHER OPTIONS SELECTED. WHITE LEDS ONLY SUITABLE FOR 40C AMBIENT

PHOTOMETRICS

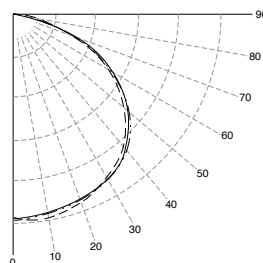
TL-R-2X2-4/YLED-590-UNV

Report No: 20613
 Total Lumens: 4,263
 Wattage: 85.53
 Efficacy: 49.8 (Lumens Per Watt)
 Fixture Size: 2'x2'
 Key:
 - - - - - 0
 45
 _____ 90



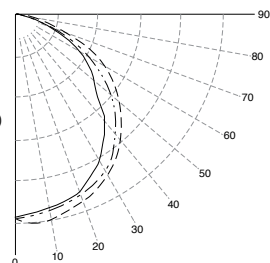
TL-R-2X4-4/YLED-590-UNV

Report No: 20614
 Total Lumens: 9,558
 Wattage: 172.63
 Efficacy: 55.4 (Lumens Per Watt)
 Fixture Size: 2'x4'
 Key:
 - - - - - 0
 45
 _____ 90



TL-R-1X4-2/YLED-590-UNV

Report No: 20615
 Total Lumens: 3,770
 Wattage: 85.94
 Efficacy: 43.9 (Lumens Per Watt)
 Fixture Size: 1'x4'
 Key:
 - - - - - 0
 45
 _____ 90



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ENERGY DATA - COLOR LED

INSET-FGRS-AMBER LED TROFFER							
ENCLOSURE SIZE	LED SELECTION	DIMMING	590nm (Amber)			AMBIENT TEMP RATING	
			LUMENS	WATTS	EFFICACY	MINIMUM	MAXIMUM ³
1X4	1YLED	0-10V 1%	1,885	43	44	-20°C (-4°F)	40°C (104°F)
1X4	2YLED	0-10V 1%	3,770	86	44	-20°C (-4°F)	40°C (104°F)
2X2	1YLED	0-10V 1%	1,066	22	48	-20°C (-4°F)	40°C (104°F)
2X2	2YLED	0-10V 1%	2,132	43	50	-20°C (-4°F)	40°C (104°F)
2X2	3YLED	0-10V 1%	3,197	65	49	-20°C (-4°F)	40°C (104°F)
2X2	4YLED	0-10V 1%	4,263	86	50	-20°C (-4°F)	40°C (104°F)
2X4	1YLED	0-10V 1%	2,390	44	54	-20°C (-4°F)	40°C (104°F)
2X4	2YLED	0-10V 1%	4,779	87	55	-20°C (-4°F)	40°C (104°F)
2X4	3YLED	0-10V 1%	7,169	130	55	-20°C (-4°F)	40°C (104°F)
2X4	4YLED	0-10V 1%	9,558	173	55	-20°C (-4°F)	40°C (104°F)

* View previous page for energy data notes.

COLOR LED RELATIVE DISTRIBUTION

