

# Cleanroom KL Top Relamp Troffers

2x4 & 1x4 High Efficiency LED Luminaires with Top and Bottom Access

- **Rated IP66**
- **Suitable for ISO 3-9 Cleanspaces**
- **Suitable for 209E class 1-100,000 Cleanspaces**
- **ETL listed for Wet Locations**
- **One piece overlapping doorframe**
- **Robotically seam welded housing**
- **0-10v 1% Dimming Standard.**
- **Service to Luminare from Plenum Side of ceiling**
- **One Housing Suitable for Flange and Grid Installation.**
- **Made in the USA by a Family Owned US Corporation**



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## ORDERING GUIDE

Series	Installation Type	Material	Size	Source	CCT	Voltage	Options
KL	R/TR: Recessed Top Relamp (Suitable for Flange and Grid Installations)	1: White CRS Hsg. & White CRS Door 2: White CRS Hsg. & Polished 304 SS Door	1x4: 1' x 4' Housing	1/LEDR 2/LEDR 2/LEDH 2/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/ED: Two Drivers (Two Circuits) 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 .125 FROST: 1/8" Frost Acrylic Lens OCCMW: Internal microwave OCC Sensor WHIP: Must Specify Length and Wire Qty 6IT: 6in Toggle for 6" thick ceilings.
			2x4: 2' x 4' Housing	2/LEDR 2/LEDH 3/LEDR 3/LEDH 4/LEDR 4/LEDH 4/LEDHF	90+ CRI: 935 = 3500K CCT 940 = 4000K CCT 950 = 5000K CCT		

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## SPECIFICATIONS

**HOUSING:** One piece, hole free, robotically seam welded 20Ga CRS housing has flattened knockouts for a superior seal. Gasketed top cover allows all services from above. Fully white powder coated.

**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 hinged by aircraft cables and is supplied with captive stainless steel flush head screws to allow easy wiping of the surface. Available in 20Ga 304 Polished SS, or 18Ga Powder coated CRS.

**TOP COVER:** Gasketed top cover is accessible from the plenum space only. Hinged to housing and then mechanically secured with 8-32 screws. Not suitable to be walked on.

**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:** Commercially available in a wide variety of Color Temperature (CCT), FLUX, and CRI. Highly efficient and consistent color maintained to 3 SDMC for color critical applications. B50/L70 and compliant with Zhaga recognized hole patterns. Consult factory for LED options or configurations not listed below.

**DRIVERS:** Standard Universal Voltage Class 2 drivers are 0-10v Dimmable to 1% for most LED configurations, 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.

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

**INSTALLATION:** Suitable for Grid or Flanged installation (must specify). Accommodates most 1" and 1.5" T-Bar Grid see below installation details. Four or six adjustable toggle arms with holes for seismic support wire attachment. Supply entry via 1/2" trade size flattened knockouts located at the ends of the fixture.

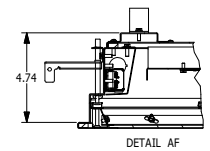
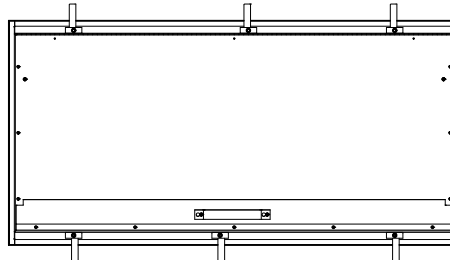
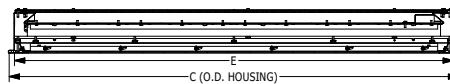
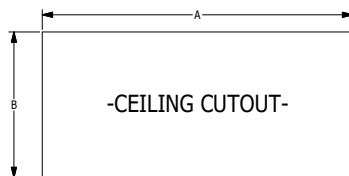
**FINISH:** Gloss white high reflectance 1000 hr. salt spray polyester powder coat finish standard for all recessed housings. Stainless steel doorframes are satin polished unless option WHT is chosen.

**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 LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

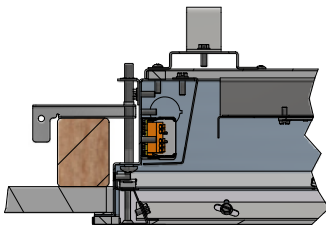
## PRODUCT DRAWINGS

RECESSED TOP RELAMP REFERENCE DIMENSIONS						
SIZE	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F
2X4	47.00"	23.00"	47.63"	23.69"	46.50"	22.50"
1X4	47.00"	11.00"	47.63"	11.69"	46.50"	10.50"

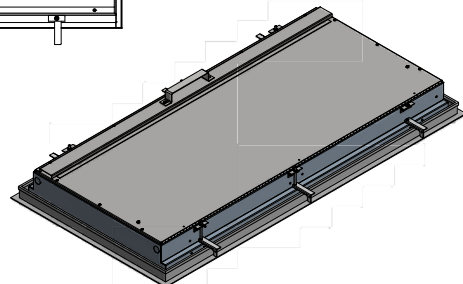
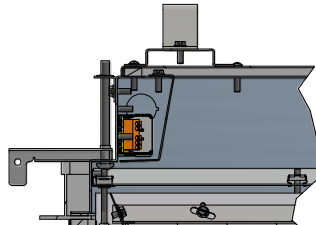
Note: 1x4 housing only has (4) Toggle Arms



Flange Installation Detail



Grid Installation Detail



01-CB-L-TR OVERLAPPING DWG. DATE: 3/05/19

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## ENERGY DATA

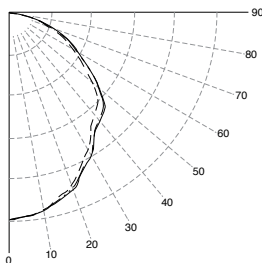
TR OVERLAP-FG-LED TROFFER (APPROX <sup>1</sup> LUMENS DELIVERED)												
ENCLOSURE SIZE	LIGHT PACKAGE	STANDARD DIMMING	83 CRI (3000K - 5000K)			AMBIENT TEMP		90+ CRI (3500K, 4000K)			AMBIENT TEMP	
			LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>	MINIMUM	MAXIMUM <sup>4</sup>	LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>	MINIMUM	MAXIMUM <sup>4</sup>
1x4	1LEDR	0-10V 1%	4,100	37	110	-20°C (-4°F)	40°C (104°F)	2,800	34	82	-20°C (-4°F)	40°C (104°F)
1x4	2LEDR	0-10V 1%	<b>8,324</b>	73	114	-20°C (-4°F)	40°C (104°F)	5,777	62	93	-20°C (-4°F)	40°C (104°F)
1x4	2LEDH	0-10V 1%	<b>12,642</b>	103	123	-20°C (-4°F)	40°C (104°F)	12,449	146	85	-20°C (-4°F)	35°C (95°F)
1x4	2LEDHF	0-10V 1%	15,800	139	114	-20°C (-4°F)	40°C (104°F)	15,546	183	85	-20°C (-4°F)	35°C (95°F)
2X4	2LEDR	0-10V 1%	9,180	74	124	-20°C (-4°F)	40°C (104°F)	6,528	62	105	-20°C (-4°F)	40°C (104°F)
2X4	3LEDR	0-10V 1%	13,770	111	124	-20°C (-4°F)	40°C (104°F)	9,797	94	104	-20°C (-4°F)	40°C (104°F)
2X4	2LEDH	0-10V 1%	14,340	103	139	-20°C (-4°F)	40°C (104°F)	12,949	148	88	-20°C (-4°F)	35°C (95°F)
2X4	4LEDR	0-10V 1%	<b>18,370</b>	147	125	-20°C (-4°F)	40°C (104°F)	12,762	124	103	-20°C (-4°F)	40°C (104°F)
2X4	3LEDH	0-10V 1%	21,060	153	138	-20°C (-4°F)	40°C (104°F)	19,549	221	88	-20°C (-4°F)	35°C (95°F)
2X4	4LEDH	0-10V 1%	<b>27,597</b>	208	133	-20°C (-4°F)	40°C (104°F)	25,898	295	88	-20°C (-4°F)	35°C (95°F)
2X4	4LEDHF	0-10V 1%	<b>35,352</b>	279	127	-20°C (-4°F)	35°C (95°F)	35,488	373	95	-20°C (-4°F)	35°C (95°F)
2X4	EM10	NA	1180-1270	4	NA	0°C (32°F)	40°C (104°F)	880-1050	4	NA	0°C (32°F)	40°C

- <sup>1</sup> DELIVERED LUMEN DATA IS EXTRAPOLATED FROM MEASURED DATA @25C WITH NO EXTRA OPTIONS. VARIANCES WILL OCCUR WHEN OPTIONS ARE CHOSEN
- <sup>2</sup> WATTAGE IS MEASURED WITH 4000K SELECTION @ 120VAC AND Tambient = 25C. WATTAGES MAY VARY WITH ALTERNATE CONFIGURATIONS
- <sup>3</sup> EFFICACY CALCULATED USING 4000K CCT DATA.
- <sup>4</sup> MAX AMBIENT TEMP RATING, NON-IC INSTALLATION. TEMP RATING MAY VARY WITH SPECIFIED DRIVERS OR ANY NON STANDARD SELECTION
- <sup>5</sup> 90 MINUTE 10W EMERGENCY DRIVER; LUMENS CALCULATED BASED ON FIXTURE EFFICACY.

## PHOTOMETRICS

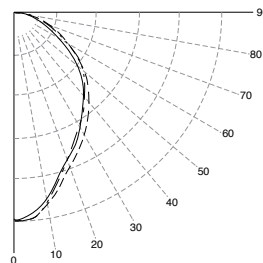
### KL-R/TR-X-2X4-4/LEDHF-835-UNV

Report No: 19675  
 Total Lumens: 35,352  
 Wattage: 278.7  
 Efficacy: 126.8 (Lumens Per Watt)  
 Fixture Size: 2'x4'  
 Key:  
 --- 0  
 - - - 45  
 \_\_\_\_\_ 90



### KL-R/TR-5-1X4-2/LEDH-840-UNV

Report No: 20898  
 Total Lumens: 12,642  
 Wattage: 102.43  
 Efficacy: 123.4 (Lumens Per Watt)  
 Fixture Size: 1'x4'  
 Key:  
 --- 0  
 - - - 45  
 \_\_\_\_\_ 90



### KL-R/TR-5-2X4-4/LEDH-840-UNV

Report No: 20908  
 Total Lumens: 27,597  
 Wattage: 208.25  
 Efficacy: 134.5 (Lumens Per Watt)  
 Fixture Size: 2'x4'  
 Key:  
 --- 0  
 - - - 45  
 \_\_\_\_\_ 90

