

# Cleanroom KL-R Troffers: KL-R-LED-TW

Tunable White 1x2, 1x4, 2x2 and 2x4 High Efficiency LED Recessed Luminaires

- **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 comes standard**
- **Recessed Housing suitable for Tbar Grid AND 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 and CCT**
- **Tunable white LEDs allow a full range of CCTS from 2700K - 6500K CCT.**



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## ORDERING GUIDE

Series	Material	Size	Row Qty.	LED Type	CCT/CRI	Control	Voltage	Optics	Options			
KL-R				LEDTW								
Series	Material	Size	Row Qty.	LED Type	CCT/CRI	Control	Voltage	Optics	Options			
KL-R	3White 430 SS Hsg. & Polished 304 SS Door	1x21' x 2' Housing	1	LEDTW	80 CRI:	10VA0-10V Analog Control	120V	P12ACR0.135" P12 Prismatic Impact Resistant Acrylic (Inverted)	SWWet Location Hub Supplied (not installed)			
		1x41' x 4' Housing	2		827/ 8652700K-6500K		277V	LEX0.125" P12 Prismatic Polycarbonate (Inverted)	PxL *Programmed to User Specified Lumen Value.			
	4White AL Hsg. & Polished 304 SS Door					90+ CRI:	10VWD0-10V Warm Dim Control	UNV	A190.156" A19 Prismatic Impact Resistant Acrylic (Inverted)	PxW *Programmed to User Specified Wattage Value.		
		2x22' x 2' Housing	2						TG0.156" Prismatic Tempered Glass (Inverted)	10KV10KV Parallel Surge Protection (One Supplied Per Circuit)		
	5White AL Hsg. & White AL Door	OR	3		927/9652700K-6500K					HIA0.140" P12 Prismatic High Impact Resistant Acrylic (Inverted)	GTDGenerator Transfer Device	
		2x42' x 4' Housing	4								FROST0.125" Flat Diffusing Frost Acrylic	WHIPMust Specify Length and Wire Qty
	7White AL Hsg. & White CRS Door										2DBW0.125" Flat Diffused Acrylic with Bi-Directional Batwing Distribution	OCCMWInternal Microwave OCC Sensor
											LBW0.125" Flat Diffused Acrylic with Linear Batwing Distribution	FCFuse & Holder (One Supplied Per Circuit)
											GH850.125" Flat Diffused Acrylic with Glare Suppression Distribution	EM1010W Integral LED EM (Specify Input Voltage)
												EM2020W Remote LED EM (Specify Input Voltage)
												GG1/8" Thick Grid Gasket (Provided Loose)
												EDL-40F Electronic Driver
												WHTWhite Finished Door & HSG
												AMWAnti-Microbial White Powdercoat
												2/EDTwo Drivers/Two Circuits
										Note*: Specify Value in Ordering Notes		

Ordering Notes, If Applicable

# Cleanroom KL-R Troffers: KL-R-LED-TW

Tunable White 1x2, 1x4, 2x2 and 2x4 High Efficiency LED Recessed Luminaires

## SPECIFICATIONS

**HOUSING:** One piece, hole free, robotically seam welded housing has flattened knockouts for a superior seal. Housings are available in .040" 3003 Aluminum or 20Ga 430 Stainless 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 hinged by aircraft cables and is supplied with captive stainless steel flush head screws to allow easy wiping of the surface. Available in .050" 3003 Powder coated Alum., 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. 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:** Commercially available minimum 80 or 90 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. LEDs are controllable via 0-10v dimming, see next page for control options. Consult factory for lumen output configurations not listed on spec sheets.

**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.

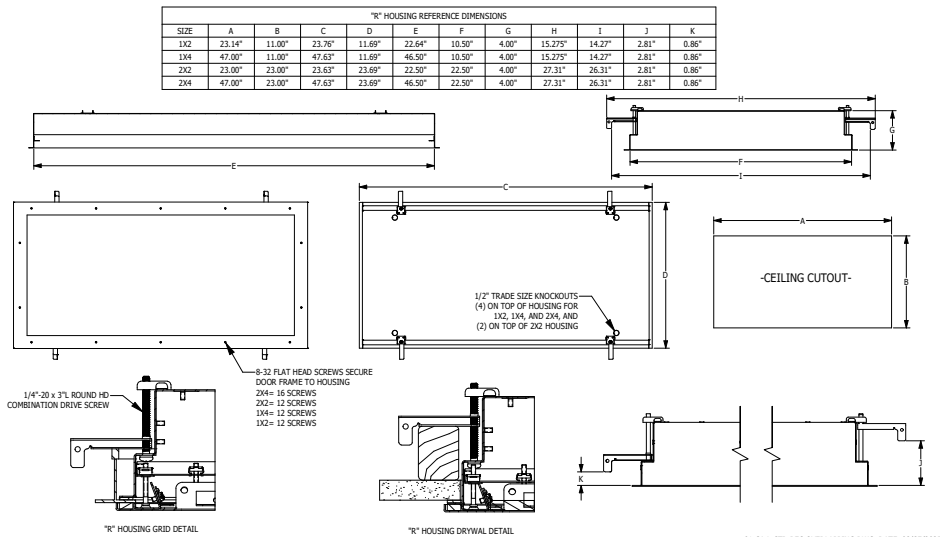
**REFLECTOR:** Die formed metal with high reflectance white polyester powder coat finish. Typical reflectivity 92%.

**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:** 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 non-food zones & 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



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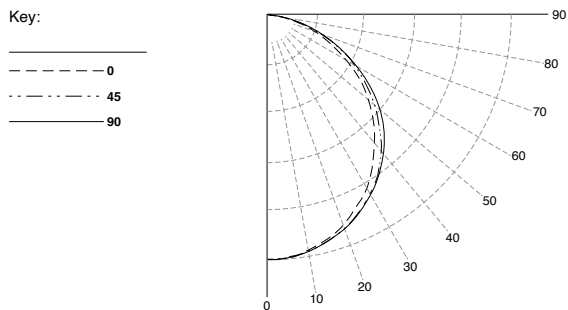
## ENERGY DATA

OVERLAP-FGRS-LED TROFFER (APPROX <sup>1</sup> LUMENS DELIVERED)						
ENCLOSURE SIZE	LIGHT PACKAGE	80 CRI (3000K - 5000K)			MAX AMB TEMP	CCT RANGE
		LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>		
1X2	1LEDTW	1,656	18	92	40°C (104°F)	2700k - 6500k
1X2	2LEDTW	3,384	35	97	40°C (104°F)	2700k - 6500k
1X2	EM10	920-970	4	NA	40°C (104°F)	NA
1X4	1LEDTW	3,450	34	101	40°C (104°F)	2700k - 6500k
1X4	2LEDTW	7,050	68	104	40°C (104°F)	2700k - 6500k
1X4	EM10	1010-1040*	4	NA	40°C (104°F)	NA
2X2	2LEDTW	3,750	35	107	40°C (104°F)	2700k - 6500k
2X2	3LEDTW	5,650	53	107	40°C (104°F)	2700k - 6500k
2X2	4LEDTW	7,550	68	111	40°C (104°F)	2700k - 6500k
2X2	EM10	1070-1110*	4	NA	40°C (104°F)	NA
2X4	2LEDTW	7,800	68	115	40°C (104°F)	2700k - 6500k
2X4	3LEDTW	11,700	103	114	40°C (104°F)	2700k - 6500k
2X4	4LEDTW	15,600	135	116	40°C (104°F)	2700k - 6500k
2X4	EM10	1140-1160*	4	NA	40°C (104°F)	NA

- 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

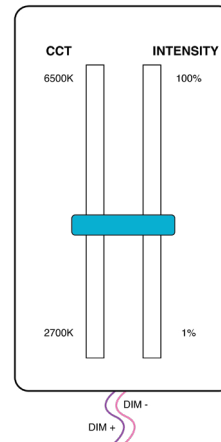
## PHOTOMETRICS

### P12 PRISMATIC



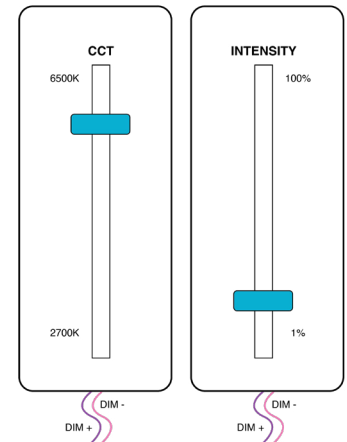
## CONTROL OPTIONS

### 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.