

Cleanroom KL-S Troffers: KL-S-LED-TW

1x4, 2x2 and 2x4 High Efficiency LED Surface 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**
- **BAA Compliant & Made in the USA by a Family Owned US Corporation**
- **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-S				LEDTW							
Series	Material	Size	Row Qty.	Light Source	Control	Voltage	Optics	Options			
KL-S	White CRS Hsg. & White CRS Door	1x4 1' x 4' Housing	1	80 CRI: LEDTW	10VA 0-10V Analog Control	120V 277V	P12ACR 0.135" P12 Prismatic Impact Resistant Acrylic (Inverted)	SW	Wet Location Hub Supplied (not installed)		
			2	827/865 2700K-6500K				LEX	0.125" P12 Prismatic Polycarbonate (Inverted)	PxL *	Programmed to User Specified Lumen Value.
	White CRS Hsg. & Polished 304 SS Door	2x2 2' x 2' Housing	2	90+ CRI: LEDTW	10VWD 0-10V Warm Dim Control	UNV	A19 0.156" A19 Prismatic Impact Resistant Acrylic (Inverted)	PxW *	Programmed to User Specified Wattage Value.		
	Polished 304 SS Hsg. & Polished 304 SS Door		OR					3	927/965 2700K-6500K	TG	0.156" Prismatic Tempered Glass (Inverted)
			2x4 2' x 4' Housing	4				HIA	0.140" P12 Prismatic High Impact Resistant Acrylic (Inverted)	GH85	Generator Transfer Device
	White AL Hsg. & Polished 304 SS Door							FROST	0.125" Flat Diffused Frost Acrylic	WHIP	Must Specify Length and Wire Qty
	White AL Hsg. & White AL Door							2DBW	0.125" Flat Diffused Acrylic with Bi-Directional Batwing Distribution	OCCMW	Internal Microwave OCC Sensor
White CRS Hsg. & White AL Door							LBW	0.125" Flat Diffused Acrylic with Linear Batwing Distribution	FC	Fuse & Holder (One Supplied Per Circuit)	
White AL Hsg. & White CRS Door							GH85	0.125" Flat Diffused Acrylic with Glare Suppression Distribution	EM10	10W Integral LED EM (Specify Input Voltage)	
									EM20	20W Remote LED EM (Specify Input Voltage)	
									EDL	-40F Electronic Driver	
									WHT	White Finished Door & HSG	
									AMW	Anti-Microbial White Powdercoat	
									2/ED	Two Drivers/Two Circuits	
									316SS DOOR **	316 Stainless Steel Door Frame	
									316SS HSG ***	316 Stainless Steel Housing	
									PMB ****	Pendant Mounting Bracket (Material & Finish to Match HSG)	

NOTE: P12ACR option is standard and will be provided when no other option is selected.

Note*: Specify Value in Ordering Notes
 Note**: 316 SS Door Frame to Replace 304SS Door on Material Options 3 or 4
 Note***: 316 SS Housing to Replace 304SS/430 SS Housing on Material Option 3
 Note****: Provided Loose for Field Install

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. Housings are available in .050" 3003 Aluminum, 18Ga 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 housing. 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.

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%.

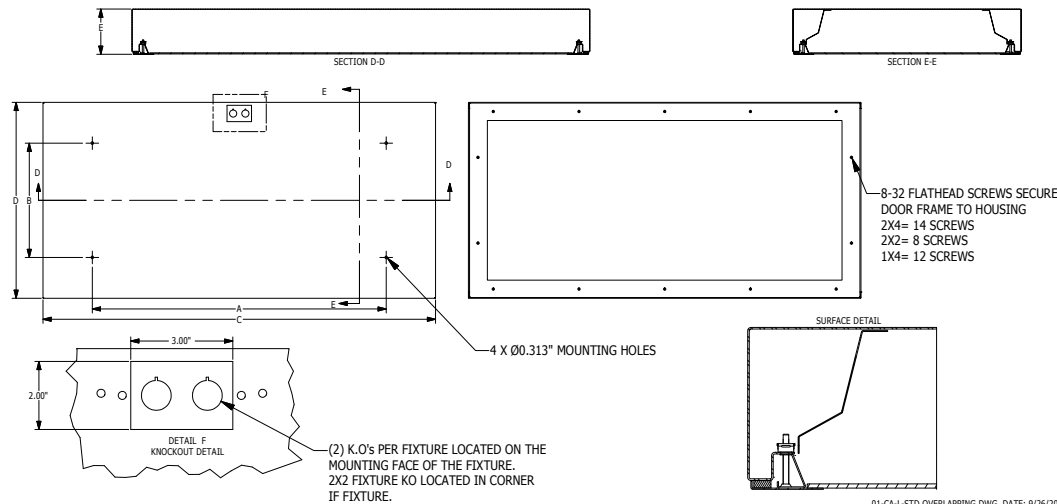
INSTALLATION: Four .312" dia. mounting holes and a removable gasketed wiring access plate with Supply entry via 1/2" trade size flattened knockouts. Suitable for surface installation onto covered ceilings only.

FINISH: Stainless steel door frames & housings are satin polished unless WHT or AMW options are selected. All other materials are provided with gloss high reflectance white polyester powder coat 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. 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 & 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.

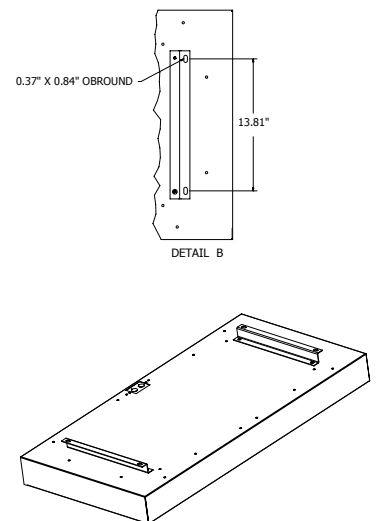
PRODUCT DRAWINGS

*S" REFERENCE DIMENSIONS					
SIZE	DIM A	DIM B	DIM C	DIM D	DIM E
1X4	43.00"	4.75"	48.08"	12.00"	4.75"
2X2	12.00"	14.00"	24.08"	24.00"	4.75"
2X4	36.00"	14.00"	48.08"	24.00"	4.75"



MOUNTING

PMB - Pendant Option



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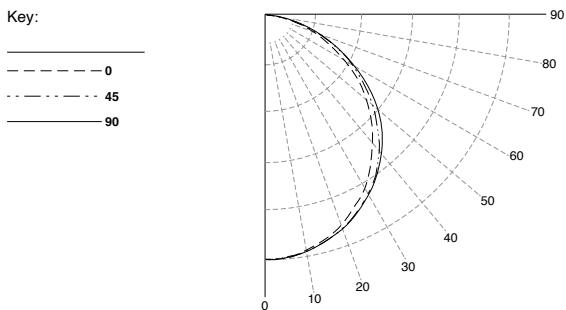
ENERGY DATA

OVERLAP-FGRS-LED TROFFER (APPROX ¹ LUMENS DELIVERED)						
ENCLOSURE SIZE	LIGHT PACKAGE	80 CRI (3000K - 5000K)			MAX AMB TEMP	CCT RANGE
		LUMENS	WATTS ²	EFFICACY ³		
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

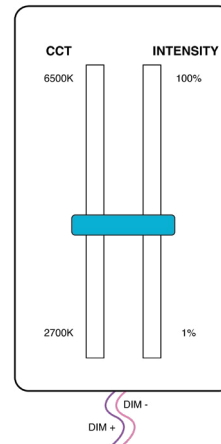
PHOTOMETRICS

P12 PRISMATIC



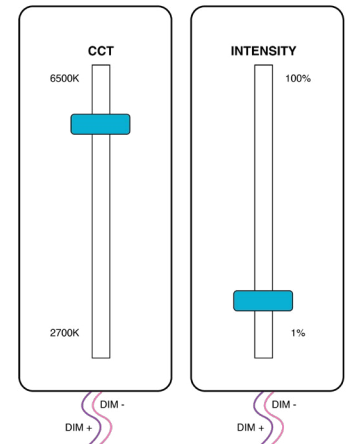
CONTROL OPTIONS

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.