

Cleanroom TL-S Troffers: TL-S-LED-TW

1x4, 2x2 and 2x4 High Efficiency LED Surface 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**
- **0-10v 1% Dimming Standard**
- **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
TL-S				LEDTW					
Series	Material	Size	Row Qty.	Light Source		Control	Voltage	Optics	Options
TL-S	1	1x4 1' x 4' Housing	1	LEDTW	80 CRI:	10VA 0-10V Analog Control	120V	P12ACR 0.135" P12 Prismatic Impact Resistant Acrylic (Inverted)	SW
			2		827/865 2700K-6500K				277V
TL-S	2	2x2 2' x 2' Housing	2	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	A19 0.156" A19 Prismatic Impact Resistant Acrylic (Inverted)	PxW *
			3		927/965 2700K-6500K				10KV
TL-S	3	2x4 2' x 4' Housing	3	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	TG 0.156" Prismatic Tempered Glass (Inverted)	10KV
			4						927/965 2700K-6500K
TL-S	4	2x4 2' x 4' Housing	4	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	HIA 0.140" P12 Prismatic High Impact Resistant Acrylic (Inverted)	WHIP
			5						927/965 2700K-6500K
TL-S	5	2x4 2' x 4' Housing	5	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	FROST 0.125" Flat Diffusing Frost Acrylic	FC
			6						927/965 2700K-6500K
TL-S	6	2x4 2' x 4' Housing	6	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	GH85 0.125" Flat Diffused Acrylic with Glare Suppression Distribution	EM10
			7						927/965 2700K-6500K
TL-S	7	2x4 2' x 4' Housing	7	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	NOTE: P12ACR option is standard and will be provided when no other option is selected	EDL
			8						927/965 2700K-6500K
TL-S	8	2x4 2' x 4' Housing	8	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	NOTE: P12ACR option is standard and will be provided when no other option is selected	AMW
			9						927/965 2700K-6500K
TL-S	9	2x4 2' x 4' Housing	9	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	NOTE: P12ACR option is standard and will be provided when no other option is selected	316SS DOOR **
			10						927/965 2700K-6500K
TL-S	10	2x4 2' x 4' Housing	10	LEDTW	90+ CRI:	10VWD 0-10V Warm Dim Control	UNV	NOTE: P12ACR option is standard and will be provided when no other option is selected	PMB ****
			11						927/965 2700K-6500K

Ordering Notes, If Applicable

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

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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 .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.

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%.

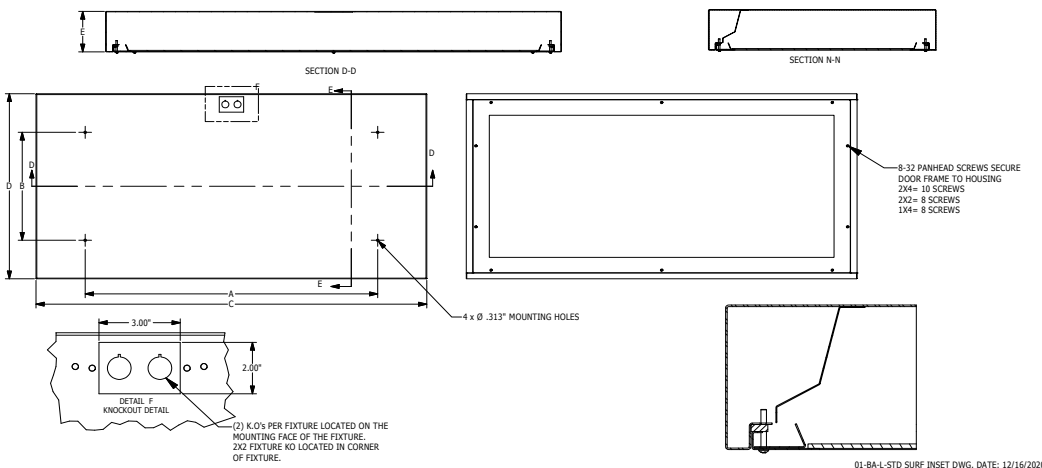
INSTALLATION: Four .312" dia. mounting holes and a removable gasketed wiring access plate with Supply entry via 1/2" trade size flattened knockouts. Suitable for surface installation onto covered ceilings only.

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: IP65 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 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.

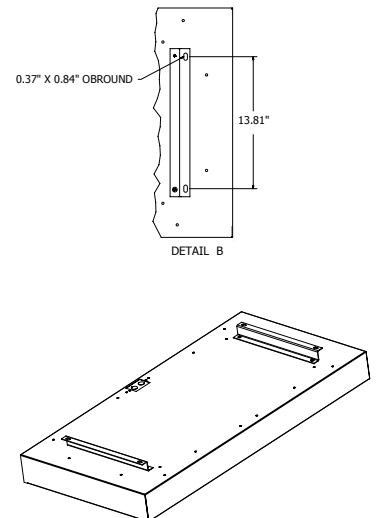
PRODUCT DRAWINGS

".5" REFERENCE DIMENSIONS					
SIZE	DIM A	DIM B	DIM C	DIM D	DIM E
1X4	43.00"	4.75"	4.50"	12.00"	4.50"
2X2	12.00"	14.00"	24.08"	24.00"	4.50"
2X4	36.00"	14.00"	48.08"	24.00"	4.50"



MOUNTING

PMB - Pendant Option



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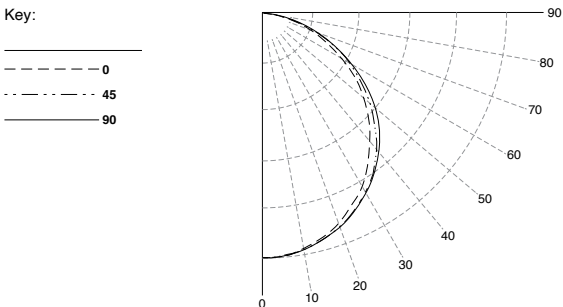
ENERGY DATA

INSET-FGRS-LED TROFFER (APPROX ¹ LUMENS DELIVERED)						
ENCLOSURE SIZE	LIGHT PACKAGE	Tunable White 80 CRI (4000K)			MAX AMB TEMP	CCT RANGE
		LUMENS	WATTS ²	EFFICACY ³		
1X4	1LEDTW	3,350	34	99	40°C (104°F)	2700k - 6500k
1X4	2LEDTW	6,750	68	99	40°C (104°F)	2700k - 6500k
1X4	EM10	990*	4	NA	40°C (104°F)	NA
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
2X2	EM10	1000-1010*	4	NA	40°C (104°F)	NA
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
2X4	EM10	1120-1140*	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

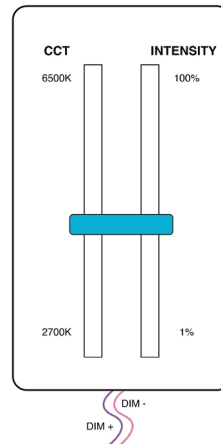
PHOTOMETRICS

P12 PRISMATIC



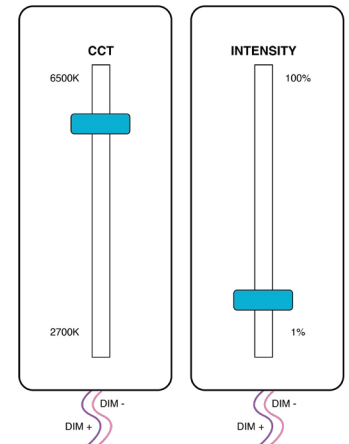
CONTROL OPTIONS

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.