

# Cleanroom KL-S Troffers

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**
- **Up to 39,000 Lm Delivered @129 Lm/W**
- **B.A.A. & B.A.B.A Compliant & Made in the USA by a Family Owned US Corporation**



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## ORDERING GUIDE

Series	Material	Size	Row Qty.	LED Type	CCT/CRI	Voltage	Optics	Options				
KL-S	1	1' x 4' Housing	1	LEDR	83 CRI:	120V	P12ACR 0.135" P12 Prismatic Impact Resistant Acrylic (Inverted)	SW	Wet Location Hub Supplied (not installed)			
			2	LEDH	830 3000K	277V	LEX 0.125" P12 Prismatic Polycarbonate (Inverted)	PxL *	Programmed to User Specified Lumen Value.			
	2	2' x 2" Housing	2	LEDHF	835 3500K	UNV	A19 0.156" A19 Prismatic Impact Resistant Acrylic (Inverted)	PxW *	Programmed to User Specified Wattage Value.			
				840 4000K	347V*	TG 0.156" Prismatic Tempered Glass (Inverted)	10KV	10KV Parallel Surge Protection (One Supplied Per Circuit)				
	3	2' x 4" Housing	3	4	850 5000K	*347V Available with 10% dimming, not all options are compatible with 347V	HIA 0.140" P12 Prismatic High Impact Resistant Acrylic (Inverted)	GTD	Generator Transfer Device			
					90+ CRI:		FROST 0.125" Flat Diffusing Frost Acrylic	WHIP	Must Specify Length and Wire Qty			
	4	2' x 4" Housing	4	5	6		7	935 3500K	2DBW 0.125" Flat Diffused Acrylic with Bi-Directional Batwing Distribution	OCCMW	Internal microwave OCC Sensor	
								940 4000K	LBW 0.125" Flat Diffused Acrylic with Linear Batwing Distribution	FC	Fuse & Holder (One Supplied Per Circuit)	
	5	2' x 4" Housing	5	6	7		8	950 5000K	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)	
	6	2' x 4" Housing	6	7	8		9	10	11	12	EDL	-40F Electronic Driver
	7	2' x 4" Housing	7	8	9		10	11	12	13	AMW	Anti-Microbial White Powdercoat
8	2' x 4" Housing	8	9	10	11		12	13	14	316SS DOOR **	316 Stainless Steel Door Frame	
										316SS HSG ***	316 Stainless Steel Housing	
9	2' x 4" Housing	9	10	11	12		13	14	15	Note*: Specify Value in Ordering Notes		
										Note**: 316 SS Door Frame to Replace 304SS Door on Material Options 3 or 4		
10	2' x 4" Housing	10	11	12	13	14	15	16	Note***: 316 SS Housing to Replace 304SS/430 SS Housing on Material Option 3			

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 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%, 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.

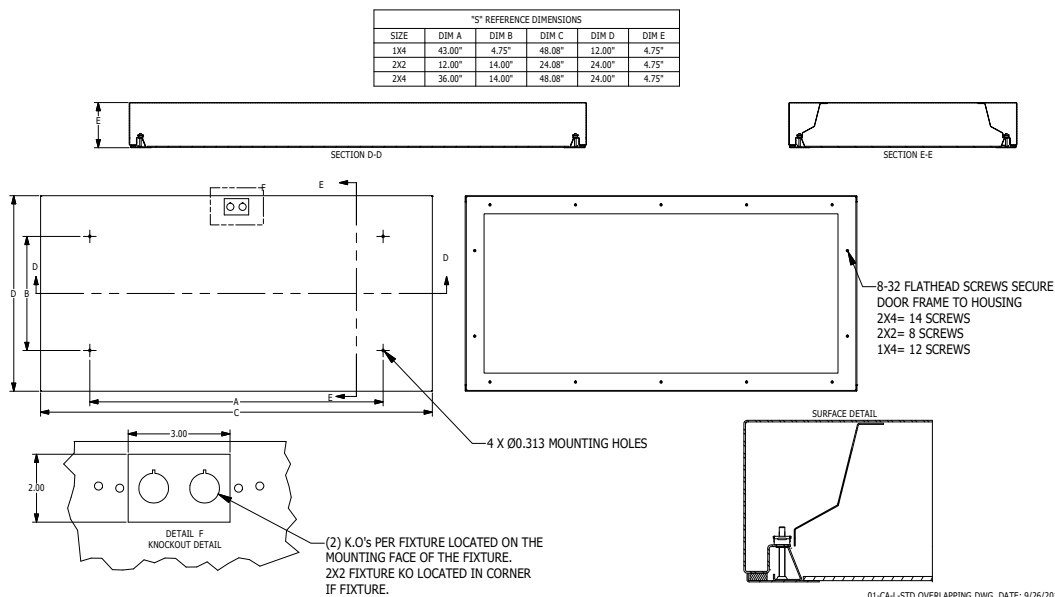
**REFLECTOR:** Die formed metal with high reflectance white polyester powder coat finish. Typical reflectivity 92%.

**INSTALL SURFACE:** 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



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## ENERGY DATA

SURFACE & RECESSED OVERLAPPING LED TROFFER (APPROX <sup>1</sup> LUMENS DELIVERED)										
ENCLOSURE SIZE	LIGHT PACKAGE	83 CRI (3000K - 5000K)				90 CRI (3500K, 4000K)				STANDARD DIMMING
		LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>	MAX AMB TEMP	LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>	MAX AMB TEMP <sup>4</sup>	
1X4	1LED R	2,974	29	103	45°C (113°F)	2,868	29	99	45°C (113°F)	0-10V 1%
1X4	2LED R	<b>5,948</b>	<b>55</b>	<b>108</b>	45°C (113°F)	<b>5,736</b>	<b>56</b>	<b>103</b>	45°C (113°F)	0-10V 1%
1X4	2LED H	<b>11,493</b>	<b>109</b>	<b>106</b>	35°C (95°F)	<b>10,980</b>	<b>109</b>	<b>101</b>	35°C (95°F)	0-10V 1%
1X4	2LEDHF	<b>18,046</b>	<b>153</b>	<b>118</b>	35°C (95°F)	15,546	183	85	35°C (95°F)	0-10V 1%
1X4	EM10	1030-1180	4	NA	40°C (104°F)	850-1030	4	NA	40°C (104°F)	NA
2X2	2LED R	3,165	29	109	45°C (113°F)	3,042	29	105	45°C (113°F)	0-10V 1%
2X2	3LED R	<b>4,747</b>	<b>42</b>	<b>113</b>	45°C (113°F)	<b>4,563</b>	<b>42</b>	<b>109</b>	45°C (113°F)	0-10V 1%
2X2	2LED H	6,213	55	113	40°C (104°F)	5,928	55	108	40°C (104°F)	0-10V 1%
2X2	4LED R	6,328	55	115	45°C (113°F)	6,084	55	111	45°C (113°F)	0-10V 1%
2X2	3LED H	<b>9,319</b>	<b>80</b>	<b>116</b>	40°C (104°F)	<b>8,892</b>	<b>81</b>	<b>110</b>	35°C (95°F)	0-10V 1%
2X2	4LED H	12,425	109	114	40°C (104°F)	11,856	109	109	35°C (95°F)	0-10V 1%
2X2	4LEDHF	<b>18,523</b>	<b>153</b>	<b>121</b>	35°C (95°F)	16,425	184	89	35°C (95°F)	0-10V 1%
2X2	EM10	1090-1210	4	NA	40°C (104°F)	890-1110	4	NA	40°C (104°F)	NA
2X4	2LED R	6,864	55	125	45°C (113°F)	6,567	56	117	45°C (113°F)	0-10V 1%
2X4	3LED R	<b>10,295</b>	<b>83</b>	<b>124</b>	45°C (113°F)	<b>9,851</b>	<b>83</b>	<b>119</b>	45°C (113°F)	0-10V 1%
2X4	2LED H	13,488	109	124	40°C (104°F)	12,816	109	118	40°C (104°F)	0-10V 1%
2X4	4LED R	13,726	111	124	45°C (113°F)	13,134	113	116	45°C (113°F)	0-10V 1%
2X4	3LED H	<b>20,233</b>	<b>165</b>	<b>123</b>	40°C (104°F)	<b>19,224</b>	<b>165</b>	<b>117</b>	40°C (104°F)	0-10V 1%
2X4	4LED H	26,977	220	123	40°C (104°F)	25,632	220	117	40°C (104°F)	0-10V 1%
2X4	4LEDHF	<b>39,373</b>	<b>305</b>	<b>129</b>	35°C (95°F)	35,488	373	95	35°C (95°F)	0-10V 1%
2X4	EM10	1230-1290	4	NA	40°C (104°F)	950-1190	4	NA	40°C (104°F)	NA

<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

### P12 PRISMATIC

Key:

— 0  
 - - - 45  
 . . . 90

