

Cleanroom KL Amber Troffers - Tunable White

1x4, 2x2 and 2x4 Amber/White LED 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**
- **Tunable White 2700k - 6500k CCT**
- **Available With DALI Or 0-10V Controls**
- **Narrow Spectrum 590nm True Amber LEDs**
- **White / Amber separately controlled circuits**
- **Recessed Housing suitable for Tbar Grid AND Hardlid Installations**
- **Made in the USA by a Family Owned US Corporation**



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ORDERING GUIDE

Series	Installation Type	Material	Size	Amber LED	White LED	CCT (White LED)	Control	Voltage	Options
KL	R: Recessed (Suitable for Flange & Grid Installations)	3: White 430 SS Hsg. & Polished 304 SS Door	1x4: 1' x 4' Housing	1/YLED590	1/LEDTW	827/865: 80 CRI; 2700k-6500k CCT	0-10v Analog Dimming 10V-CON: Continuous CCT 0-10v dimming 10V-WD: Warm Dim 0-10V dimming	UNV	FC: Fuse & Holder (One Supplied Per Circuit) 2/EDY: Two Circuits of Yellow Light EM10: 10W Integral LED EM (Specify Input Voltage) EM20: 20W External LED EM (Specify Input Voltage) WHT: White Finished Door & HSG LEK: .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 (1 Per Circuit) WHIP: Must Specify Length and Wire Qty .125 FROST: 1/8" Frost Acrylic Lens OCCMW: Internal microwave OCC Sensor
		4: White AL Hsg. & Polished 304 SS Door	MAX 3 Arrays Total (2 Max Per Color)	2/YLED590	2/LEDTW				
		5: White AL Hsg. & White AL Door	2x2: 2' x 2' Housing	1/YLED590	1/LEDTW				
	7: White AL Hsg. & White CRS Door	MAX 4 Arrays Total OR 3/YLED590	2/YLED590	2/LEDTW					
		2x4: 2' x 4' Housing	4/YLED590	3/LEDTW					
		MAX 4 Arrays Total							
S: Surface	1: White CRS Hsg. & White CRS Door	2: White CRS Hsg. & Polished 304 SS Door	1x4: 1' x 4' Housing	1/YLED590	1/LEDTW	827/865: 80 CRI; 2700k-6500k CCT	0-10v Analog Dimming 10V-CON: Continuous CCT 0-10v dimming 10V-WD: Warm Dim 0-10V dimming	UNV	FC: Fuse & Holder (One Supplied Per Circuit) 2/EDY: Two Circuits of Yellow Light EM10: 10W Integral LED EM (Specify Input Voltage) EM20: 20W External LED EM (Specify Input Voltage) WHT: White Finished Door & HSG LEK: .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 (1 Per Circuit) WHIP: Must Specify Length and Wire Qty .125 FROST: 1/8" Frost Acrylic Lens OCCMW: Internal microwave OCC Sensor
		3: Polished 304 SS Hsg. & Polished 304 SS Door	MAX 2 Arrays Total	2/YLED590	2/LEDTW				
		4: White AL Hsg. & Polished 304 SS Door	2x2: 2' x 2' Housing	1/YLED590	1/LEDTW				
	5: White AL Hsg. & White AL Door	MAX 4 Arrays Total OR 3/YLED590	2/YLED590	2/LEDTW					
	6: White CRS Hsg. & White AL Door	2x4: 2' x 4' Housing	4/YLED590	3/LEDTW					
	7: White AL Hsg. & White CRS Door	MAX 4 Arrays Total							

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SPECIFICATIONS

HOUSING: One piece, hole free, robotically seam welded housing has flattened knockouts for a superior seal. Recessed housings are available in .040" 3003 Aluminum or 20Ga 430 Stainless Steel. Surface housings are available in .040" 3003 Aluminum, 20Ga 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 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 .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.

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.

TUNABLE WHITE LEDS: Commercially available minimum 80 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 . See LED options to specify a custom range of Color temperatures. Consult factory for lumen output configurations not listed on spec sheets.

AMBER LEDS: Amber LED's provide a "True amber" 590nm narrow spectrum for wavelength sensitive applications. Amber chips are not phosphor converted LEDs so there is no risk of white light leaking through deteriorated phosphor over time. Amber LEDs are switched independent of white LEDs.

TUNABLE WHITE DRIVERS: Dual Channel Programmable Drivers make color tuning simple. Available in 0-10v Analog Dimming or DALI digital dimming. The 0-10v continuous dimming method uses two sets of dimming wires. 1 set of dimming wires controls the luminous flux while maintaining consistent color and the other set controls the color in a linear dimming curve. 0-10v is also available as warm dimming that uses 1 set of dimming wires that adjust both intensity and color simultaneously. Alternately control is available with DALI Digital Dimming as well.

AMBER DRIVERS: Standard Universal Voltage Class 2 drivers are 0-10v Dimmable to 1% . 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. Amber LED's come with their own driver so they can be switched separately from the white LEDs.

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

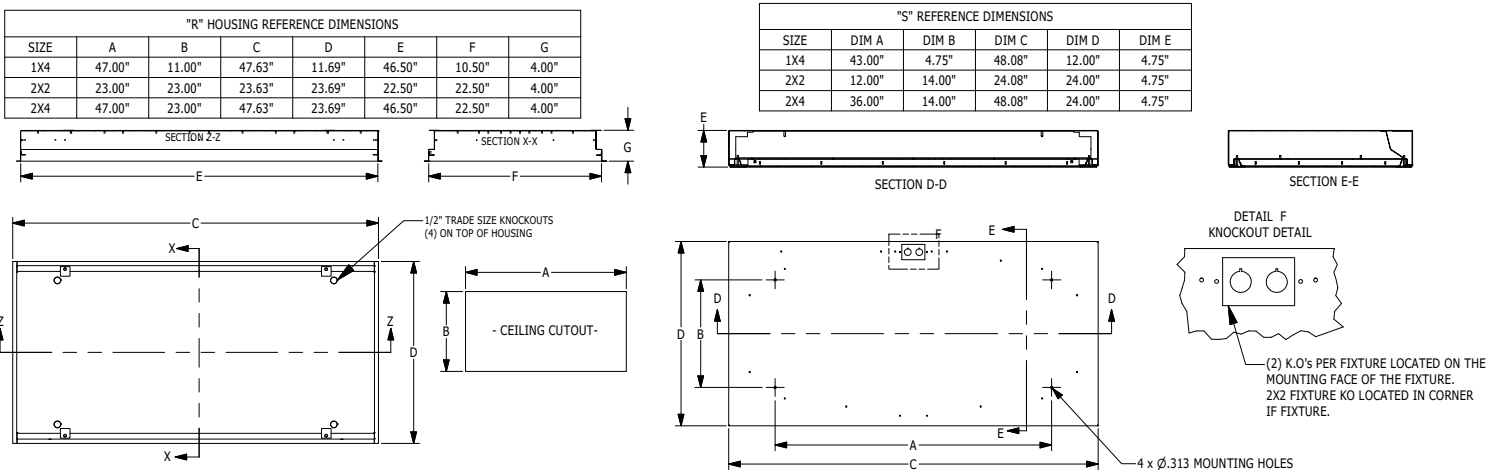
INSTALL RECESSED: 1 fixture suitable for Grid & Flanged installation. Accommodates 1" & 1.5" T-Bar Grid (Consult factory for 2" T-Bar Grid compatibility). 4 adjustable toggle arms with holes for seismic support wire attachment. Supply entry via 1/2" trade size flattened knockouts.

INSTALL SURFACE: Four .312" dia. mounting holes and a removable gasketed wiring access plate with Supply entry via 1/2" trade size flattened knockouts.

FINISH: Gloss white high reflectance 1000 hr. salt spray polyester powder coat finish standard for all recessed housings. Stainless steel doorframes & surface housings 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. Drivers and LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

PRODUCT DRAWINGS



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ENERGY DATA - WHITE LED

OVERLAP-FGRS-AMBER LED TROFFER						
ENCLOSURE SIZE	LED SELECTION	Tunable White 80 CRI (4000K)			MAX AMBIENT TEMP ³	CCT RANGE
		LUMENS	WATTS	EFFICACY		
1x4	1LEDTW	3,450	34	101	40°C (104°F)	2700k - 6500k
1X4	2LEDTW	7,050	68	104	40°C (104°F)	2700k - 6500k
2x2	1LEDTW	1,900	18	106	40°C (104°F)	2700k - 6500k
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
2X4	1LEDTW	3,900	34	115	40°C (104°F)	2700k - 6500k
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

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

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ENERGY DATA - COLOR LED

OVERLAP-FGRS-AMBER LED TROFFER						
ENCLOSURE SIZE	LED SELECTION	590nm (Amber)			MAX AMBIENT TEMP ³	
		LUMENS	WATTS	EFFICACY		
1X4	1YLED	1,972	43	46	40°C (104°F)	
1X4	2YLED	3,945	86	46	40°C (104°F)	
2X2	1YLED	1,132	22	51	40°C (104°F)	
2X2	2YLED	2,264	43	53	40°C (104°F)	
2X2	3YLED	3,396	65	52	40°C (104°F)	
2X2	4YLED	4,528	86	53	40°C (104°F)	
2X4	1YLED	2,428	44	55	40°C (104°F)	
2X4	2YLED	4,856	87	56	40°C (104°F)	
2X4	3YLED	7,283	130	56	40°C (104°F)	
2X4	4YLED	9,711	173	56	40°C (104°F)	

* View previous page for energy data notes.

COLOR LED RELATIVE DISTRIBUTION

