KURTZON
SPECIFICATION GRADE LIGHTING
ILLUMINATING YOUR WORLD

PROJECT

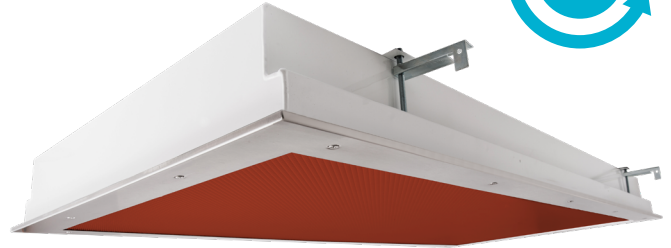DATE   TYPE

NOTES

REV: 11/26/2019

Cleanroom **KL Vivarium Troffers - Tunable White**

1x4, 2x2 and 2x4 Red/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 630nm and 660nm Red non-filtered LEDs**

- **White / Red separately controlled circuits**

- **Recessed Housing suitable for Tbar Grid AND Hardlid Installations**

- **Made in the USA by a Family Owned US Corporation**

2700K **TW** 6500K

Badges: 5/10 YEAR WARRANTY · NSF · ETL Intertek · CCEA APPROVED · ISO 3-9 (ISO 14644-1 CLASS 3) · IP66 (ISO 65529) · BSL 3&4 (BIO SAFETY LEVELS) · 209E 1 (FED STD 209E CLASS 1) · 1700 PSI (HOSEDOWN) · MADE IN THE USA · 2700K TW 6500K

ORDERING GUIDE

Series	Installation Type	Material	Size	Red LED	Wavelength	White	CCT (White LED)	Control	Voltage	Options
KL										

Series	Installation Type	Material	Size	Red LED	Wavelength	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 **4:** White AL Hsg. & Polished 304 SS Door **5:** White AL Hsg. & White AL Door **7:** White AL Hsg. & White CRS Door	**1x4:** 1' x 4' Housing **MAX 3 Arrays Total** *(2 Max Per Color)*	**1**/RLED **2**/RLED	**630:** 630nm **660:** 660nm	**1**/LEDTW **2**/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/EDR:** Two Circuits of Red Light **EM10:** 10W Integral LED EM (Specify Input Voltage) **EM20:** 20W External LED EM (Specify Input Voltage) **WHT:** White Finished Door & HSG **LEX:** .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
			2x2: 2' x 2' Housing **MAX 4 Arrays Total** OR **2x4:** 2' x 4' Housing **MAX 4 Arrays Total**	**1**/RLED **2**/RLED **3**/RLED **4**/RLED	**630:** 630nm **660:** 660nm	**1**/LEDTW **2**/LEDTW **3**/LEDTW					
	S: Surface	**1:** White CRS Hsg. & White CRS Door **2:** White CRS Hsg. & Polished 304 SS Door **3:** Polished 304 SS Hsg. & Polished 304 SS Door **4:** White AL Hsg. & Polished 304 SS Door **5:** White AL Hsg. & White AL Door **6:** White CRS Hsg. & White AL Door **7:** White AL Hsg. & White CRS Door	**1x4:** 1' x 4' Housing **MAX 2 Arrays Total**	**1**/RLED **2**/RLED	**630:** 630nm **660:** 660nm	**1**/LEDTW **2**/LEDTW					
			2x2: 2' x 2' Housing **MAX 4 Arrays Total** OR **2x4:** 2' x 4' Housing	**1**/RLED **2**/RLED **3**/RLED **4**/RLED	**630:** 630nm **660:** 660nm	**1**/LEDTW **2**/LEDTW **3**/LEDTW					

Cleanroom **KL Vivarium Troffers - Tunable White**

1x4, 2x2 and 2x4 Red/White LED Luminaires

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.

RED LEDS: Red LED's provide a narrow 630nm spectrum light for wavelength sensitive applications. Alternately available are 660nm narrow spectrum LEDS for a wider range of applications.

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.

RED 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. RED 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: One fixture suitable for Grid and Flanged installation. Accommodates 1" and 1.5" T-Bar Grid (Consult factory for 2" T-Bar Grid compatibility). Four 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.
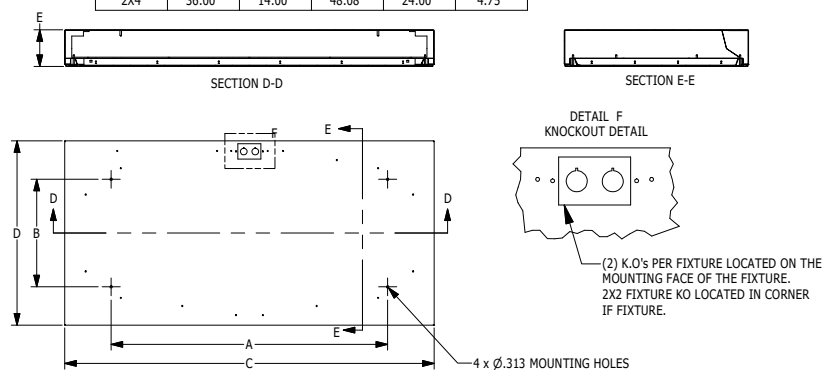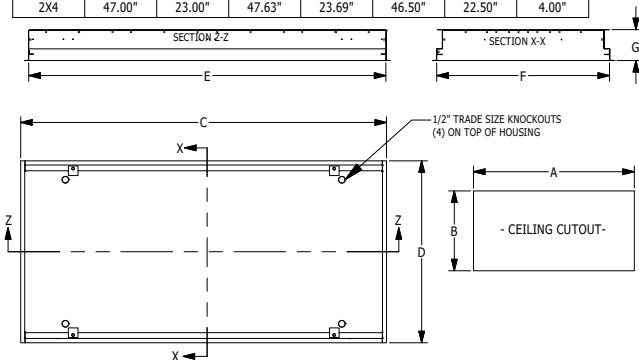
FINISH: Gloss white high reflectance 1000 hr. salt spray polyester powder coat finish standard for all recessed housings. Stainless steel doorframes and surface housings are satin polished unless option WHT is chosen.

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

"R" HOUSING REFERENCE DIMENSIONS							
SIZE	A	B	C	D	E	F	G
1X4	47.00"	11.00"	47.63"	11.69"	46.50"	10.50"	4.00"
2X2	23.00"	23.00"	23.63"	23.69"	22.50"	22.50"	4.00"
2X4	47.00"	23.00"	47.63"	23.69"	46.50"	22.50"	4.00"

"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"

SECTION Z-Z

SECTION X-X

SECTION D-D

SECTION E-E

DETAIL F
KNOCKOUT DETAIL

1/2" TRADE SIZE KNOCKOUTS (4) ON TOP OF HOUSING

- CEILING CUTOUT-

(2) K.O's PER FIXTURE LOCATED ON THE MOUNTING FACE OF THE FIXTURE. 2X2 FIXTURE KO LOCATED IN CORNER IF FIXTURE.

4 x Ø.313 MOUNTING HOLES

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ENERGY DATA - WHITE LED

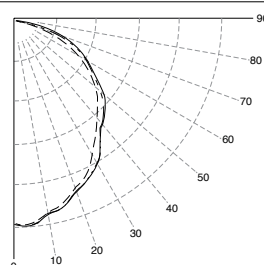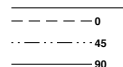| OVERLAP-FGRS-RED LED TROFFER						
ENCLOSURE SIZE	LED SELECTION	80 CRI (3000K - 5000K)			AMBIENT TEMP RATING	
		LUMENS	WATTS	EFFICACY	MAXIMUM³	CCT RANGE
1X4	1LEDTW	3,450	34	101	40°C (104°F)	2700k - 6500k
1X4	2LEDTW	7,050	68	104	40°C (104°F)	2700k - 6500k
2x2	1LEDTW	1,900	18	106	40°C (104°F)	2700k - 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 INSTALLATON. 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

KL-R-5-2X4-1/RLED-630-UNV

Report No: 19741.0

Total Lumens: 1,228

Wattage: 27.206

Efficacy: 45.1 (Lumens Per Watt)

Fixture Size: 2'x4'

Key:

– – – – 0

―――― 45

―――― 90

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1x4, 2x2 and 2x4 Red/White LED Luminaires

ENERGY DATA - COLOR LED

OVERLAP-FGRS-RED LED TROFFER								
ENCLOSURE SIZE	LED SELECTION	630nm (RED)			660nm (RED)			AMBIENT TEMP RATING
		LUMENS	WATTS	EFFICACY	LUMENS	WATTS	EFFICACY	MAXIMUM[3]
1X4	1RLED	1,122	27	42	1,202	44.5	27	40°C (104°F)
1X4	2RLED	2,068	53	39	2,405	88.9	27	40°C (104°F)
2X2	1RLED	549	14	39	593	22.2	26.7	40°C (104°F)
2X2	2RLED	1,011	27	37	1,185	44.5	26.7	40°C (104°F)
2X2	3RLED	1,560	51	31	1,778	66.7	26.7	40°C (104°F)
2X2	4RLED	2,022	53	38	2,371	88.9	26.7	40°C (104°F)
2X4	1RLED	1,247	27	46	1,281	44.5	28.8	40°C (104°F)
2X4	2RLED	2,298	53	43	2,562	89	28.8	40°C (104°F)
2X4	3RLED	3,545	80	44	3,844	133.5	28.8	40°C (104°F)
2X4	4RLED	4,596	106	43	5,125	178	28.8	40°C (104°F)

* View previous page for energy data notes.

COLOR LED RELATIVE DISTRIBUTION

Relative Distribution | **Red 630 LEDs**

Relative Distribution | **Red 660 LEDs**