KURTZON
SPECIFICATION GRADE LIGHTING
ILLUMINATING YOUR WORLD

PROJECT

DATE   TYPE

NOTES

REV: 02/19/2025

Cleanroom **TL-S Vivarium Troffers: TL-S-LED-VIVARIUM-TW**

1x4, 2x2 and 2x4 Red/White 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**

- **Narrow Spectrum 630nm, 660nm, and 735nm red non-filtered LEDs**

- **White / Red separately controlled circuits**

- **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.**

2700K **TW** 6500K

DISCLAIMER: Although KURTZON has prepared the information contained in this document with all due care, KURTZON does not warrant or represent that the information is free from errors or omission. While the information is considered to be true and correct at the date of publication, changes in circumstances after the time of publication may impact on the accuracy of the information. The information may change without notice and KURTZON is not in any way liable for the accuracy of any information printed and stored or in any way interpreted or used.

K 5/10 YEAR WARRANTY | NSF | c ETL us LISTED Intertek | ISO 3-9 ISO 14644-1 CLASS 3 | IP65 IEC 60529 | BSL 1&2 BIO SAFETY LEVELS | 209E 100 FED STD 209E CLASS 100 | 1700 PSI HOSEDOWN | MADE IN THE USA | BAA COMPLIANT | B.A.B.A COMPLIANT | 2700K TW 6500K

ORDERING GUIDE

Series	Material	Size	Row Qty.	Red LED Wavelength	Row Qty.	White LED	CCT/CRI	Control	Voltage	Optics	Options
TL-S						**LEDTW**					

Series	Material	Size		Light Source				Control	Voltage	Optics	
			Row Qty.	Red LED Wavelength	Row Qty.	White LED	CCT/CRI				
TL-S	1 White CRS Hsg. & White CRS Door	**1x4** 1' x 4' Housing	1	**RLED630**	1	**LEDTW**	**80 CRI:**	**10VA** 0-10V Analog Control	**120V**	**P12ACR** 0.135" P12 Prismatic Impact Resistant Acrylic (Inverted)	
	2 White CRS Hsg. & Polished 304 SS Door	3 LED Rows Max	2	**RLED660**	2		**827/ 865** 2700K-6500K		**277V**	**LEX** 0.125" P12 Prismatic Polycarbonate (Inverted)	
				RLED735					**UNV**	**A19** 0.156" A19 Prismatic Impact Resistant Acrylic (Inverted)	
	3 Polished 304 SS Hsg. & Polished 304 SS Door	**2x2** 2' x 2' Housing	2		1		**90+ CRI:**	**10VWD** 0-10V Warm Dim Control		**TG** 0.156" Prismatic Tempered Glass (Inverted)	
		OR	3		2		**927/965** 2700K-6500K			**HIA** 0.140" P12 Prismatic High Impact Resistant Acrylic (Inverted)	
	4 White AL Hsg. & Polished 304 SS Door	**2x4** 2' x 4' Housing	4		3					**FROST** 0.125" Flat Diffusing Frost Acrylic	
		5 LED Rows Max								**2DBW** 0.125" Flat Diffused Acrylic with Bi-Directional Batwing Distribution	
	5 White AL Hsg. & White AL Door									**LBW** 0.125" Flat Diffused Acrylic with Linear Batwing Distribution	
	6 White CRS Hsg. & White AL Door									**GH85** 0.125" Flat Diffused Acrylic with Glare Suppression Distribution	
	7 White AL Hsg. & White CRS Door									NOTE: P12ACR option is standard and will be provided when no other option is selected	

Options	
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 (One Supplied Per Circuit)
GTD	Generator Transfer Device
WHIP	Must Specify Length and Wire Qty
OCCMW	Internal Microwave OCC Sensor
FC	Fuse & Holder (One Supplied Per Circuit)
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/EDR	Two Circuits of Red Light
2/EDW	Two Circuits of White Light
	Note*: Specify Value in Ordering Notes

Ordering Notes, If Applicable

Cleanroom **TL-S Vivarium Troffers: TL-S-LED-VIVARIUM-TW**

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

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: Fixture available with Red only or Red & White LEDs, each color will be supplied with its own driver for dual switching. Red LED's provide a narrow 630nm, 660nm, or 735nm spectrum light for wavelength sensitive applications. White high efficiency LEDs are commercially available minimum 80 or 90 CRI 2 channel LED modules and 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.. All boards have Zhaga recognized hole patterns and come with a 5 year warranty.

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. (each color LED comes standard with its own driver)
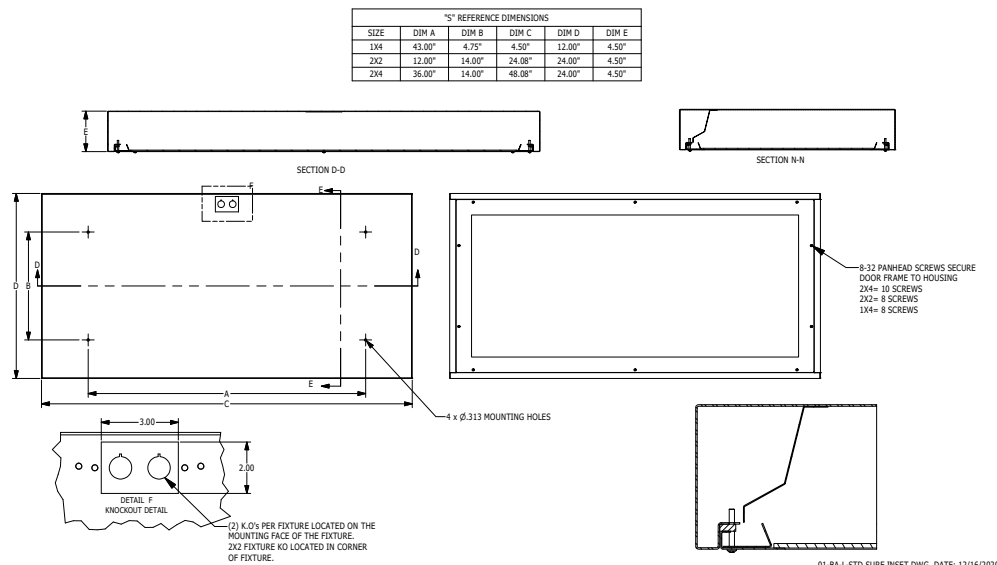
REFLECTOR: Die formed metal with high reflectance white polyester powder coat finish. Typical reflectivity 92%.

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

"S" 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"

SECTION D-D

SECTION N-N

8-32 PANHEAD SCREWS SECURE DOOR FRAME TO HOUSING
2X4= 10 SCREWS
2X2= 8 SCREWS
1X4= 8 SCREWS

4 x Ø.313 MOUNTING HOLES

3.00

2.00

DETAIL F
KNOCKOUT DETAIL

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

01-BA-L-STD SURF INSET DWG. DATE: 12/16/2020

Cleanroom **TL-S Vivarium Troffers: TL-S-LED-VIVARIUM-TW**

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

ENERGY DATA - WHITE LED

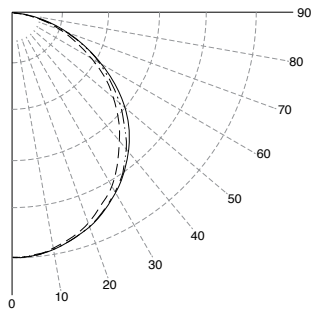| INSET-FGRS-RED LED TROFFER						
ENCLOSURE SIZE	LED SELECTION	Tunable White 80 CRI (4000K)			MAX AMBIENT TEMP³	CCT RANGE
		LUMENS	WATTS	EFFICACY		
1x4	1LEDTW	3,350	34	99	40°C (104°F)	2700k - 6500k
1X4	2LEDTW	6,750	68	99	40°C (104°F)	2700k - 6500k
2x2	1LEDTW	1,750	17	103	40°C (104°F)	2700k - 6500k
2x2	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
2X4	1LEDTW	3800	35	109	40°C (104°F)	2700k - 6500k
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

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

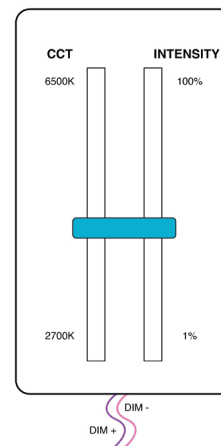## PHOTOMETRICS

P12 PRISMATIC

Key:

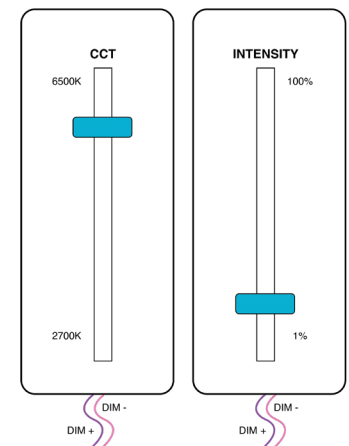- - - - 0
- · - · 45
——— 90

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.

Cleanroom **TL-S Vivarium Troffers: TL-S-LED-VIVARIUM-TW**

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

ENERGY DATA - COLOR LED

INSET-FGRS-RED LED TROFFER								
ENCLOSURE SIZE	LED SELECTION	630nm (RED)			660nm (RED)			MAX AMBIENT TEMP³
		LUMENS	WATTS	EFFICACY	LUMENS	WATTS	EFFICACY	
1X4	1RLED	1,105	27	41	1,149	44.5	25.8	40°C (104°F)
1X4	2RLED	2,048	53	39	2,298	88.9	25.8	40°C (104°F)
2X2	1RLED	540	14	39	558	22.2	25.1	40°C (104°F)
2X2	2RLED	1001	27	37	1,116	44.5	25.1	40°C (104°F)
2X2	3RLED	1541	41	38	1,674	66.7	25.1	40°C (104°F)
2X2	4RLED	2002	53	38	2,232	88.9	25.1	40°C (104°F)
2X4	1RLED	1228	27	45	1,261	44.5	28.3	40°C (104°F)
2X4	2RLED	2275	53	43	2,522	89	28.3	40°C (104°F)
2X4	3RLED	3503	80	44	3,783	133.5	28.3	40°C (104°F)
2X4	4RLED	4550	106	43	5,044	178	28.3	40°C (104°F)

* View previous page for energy data notes.

NOTE: 735nm Far Red light is measured in radiometric power since the wavelengths are so close to the human non-visible light spectrums. Each module of 735nm LEDs generates ≈ 7,000 mW of radiometric power.

COLOR LED RELATIVE DISTRIBUTION

Relative Distribution | **Red 630 LEDs**

Relative Distribution | **Red 660 LEDs**