KURTZON
SPECIFICATION GRADE LIGHTING
ILLUMINATING YOUR WORLD

PROJECT
DATE TYPE
NOTES

REV: 4/17/2020

Circadian Wet Location **Troffers**

BIOS® LED Luminaires for Wet Locations

bios® ILLUMINATED

- **IP55 Rating**
- **ETL listed for wet locations**
- **Recessed housing suitable for grid and flange installation**
- **Made in the USA by a Family Owned US Corporation**
- **This Kurtzon product is illuminated by BIOS® to provide healthy, low energy lighting that promotes improved sleep, better health and well-being**

5/10 YEAR WARRANTY | Intertek | IP55 | CCEA APPROVED | MADE IN THE USA | bios® ILLUMINATED

ORDERING GUIDE

Series	Installation Type	Material	Size	Source	CCT	Control	Voltage	Options
WL								

Series	Installation Type	Material	Size	Light Source			Voltage	Options
				Row Qty.	LED Type	CCT/Dim Type		
WL	**R**: Recessed (Suitable for Flange & Grid)	**3:** White 430 SS Hsg. & Polished 304 SS Door **4:** White AL Hsg. & Polished 304 SS Door	**1x4**: 1' x 4' Housing	**1** **2**	**LED-XBL1** **LED-XBL2** **LED-XBL3**	**835BIOS-DY** **840BIOS-DY** **835BIOS-ST** **840BIOS-ST**	UNV	**FF:** Fuse & Holder (One Supplied Per Circuit) **WHIP:** Must Specify Length and Wire Qty **.125 FROST:** 1/8" Frost Acrylic Lens **EM10:** 10W Integral LED EM (Specify Input Voltage) **EM20:** 20W Remote 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 Locatoin 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) **OCCMW**: Internal microwave OCC Sensor
		5: White AL Hsg. & White AL Door	**2x2**: 2' x 2' Housing OR **2x4:** 2' x 4' Housing	**1** **2** **3** **4**	**LED-XBL1** **LED-XBL2** **LED-XBL3**	**835BIOS-DY** **840BIOS-DY** **835BIOS-ST** **840BIOS-ST**		
	S: Surface	**2:** White CRS Hsg. & Polished 304 SS Door **3:** White 430 SS Hsg. & Polished 304 SS Door **4:** White AL Hsg. & Polished 304 SS Door	**1x4**: 1' x 4' Housing	**1** **2**	**LED-XBL1** **LED-XBL2** **LED-XBL3**	**835BIOS-DY** **840BIOS-DY** **835BIOS-ST** **840BIOS-ST**		
		5: White AL Hsg. & White AL Door **6:** White CRS Hsg. & White AL Door	**2x2**: 2' x 2' Housing OR **2x4:** 2' x 4' Housing	**1** **2** **3** **4**	**LED-XBL1** **LED-XBL2** **LED-XBL3**	**835BIOS-DY** **840BIOS-DY** **835BIOS-ST** **840BIOS-ST**		

Notes:
BIOS-DY - Dynamic dimming module **BIOS-ST** - Static dimming module

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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 430 Stainless Steel, or 20Ga 1008 Cold Rolled Steel.

DOOR FRAME: Inset door frame made from welded channels regresses into the housing to allow the neoprene 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.

GASKETS: Closed cell 100% pure neoprene gasket with vulcanized corners making a one-piece oil and solvent resistant gasket system.

LENS: High durability .135" thick virgin acrylic with P12 prismatic pattern inverted. See "Options" for other choices.

LEDS: Provided with BIOS® LED modules that are available in 3 different luminous flux intensities. When Dynamic dimming is specified, a bio dimmer is included with each driver inside the fixture. BIOS® LEDs have been expertly crafted to perform as advertised. Engineered to only include the highest quality components, the LEDs are backed by a limited 5 year warranty. See last page for more information on how BIOS® works.

DRIVERS: Standard Universal Voltage Class 2 drivers are 0-10v Dimmable to 1% for most LED configurations. 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 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. Non-IC Installation

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

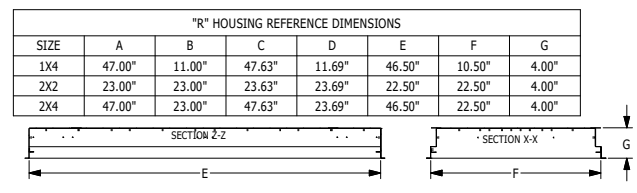
FINISH: Gloss white high reflectance 1000 hr. salt spray polyester powder coat finish standard for all housings. Stainless steel doorframes are satin polished unless option WHT is chosen.

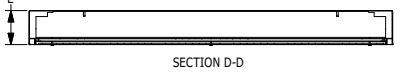
LISTINGS: IP55 rated for dust and water ingress. ETL listed per UL_1598 for wet locations. Chicago Plenum Rated. Drivers and LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

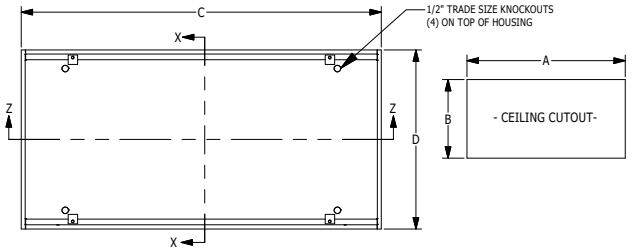
PRODUCT DRAWINGS

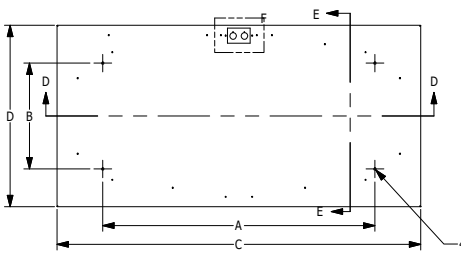
"R" HOUSING REFERENCE DIMENSIONS							
SIZE	A	B	C	D	E	F	G
1X4	47.00"	11.00"	47.63"	11.69"	46.50"	10.50"	4.00"
2X2	23.00"	23.00"	23.63"	23.69"	22.50"	22.50"	4.00"
2X4	47.00"	23.00"	47.63"	23.69"	46.50"	22.50"	4.00"

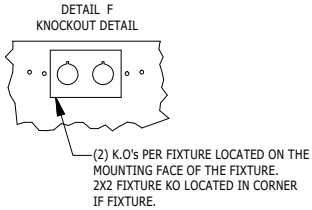
"S" REFERENCE DIMENSIONS					
SIZE	DIM A	DIM B	DIM C	DIM D	DIM E
1X4	43.00"	4.75"	48.08"	12.00"	4.50"
2X2	12.00"	14.00"	24.08"	24.00"	4.50"
2X4	36.00"	14.00"	48.08"	24.00"	4.50"











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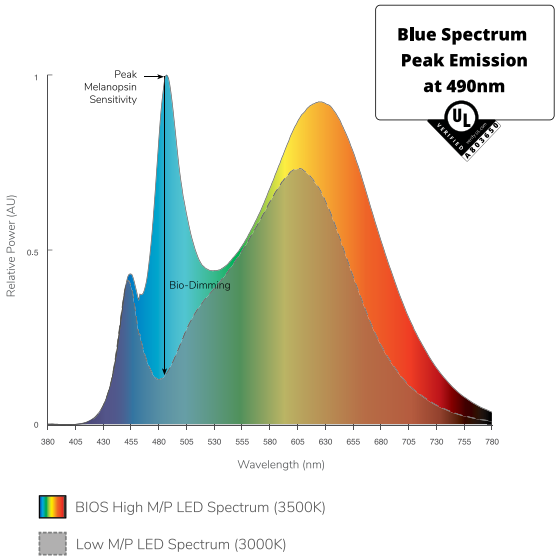
ENERGY DATA - BIOS® LED

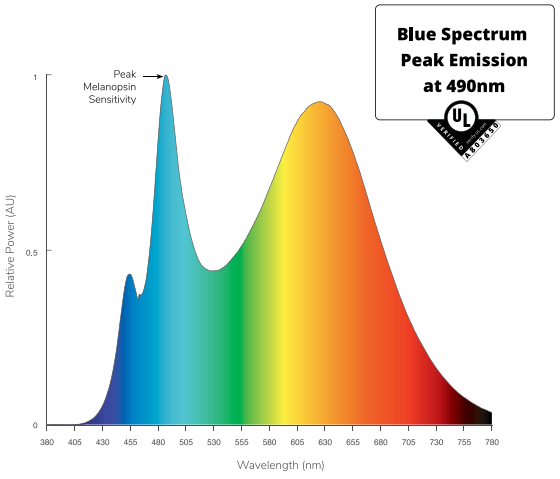
BIOS® CHANNEL DOOR FRAME TROFFERS						
ENCLOSURE SIZE	LIGHT PACKAGE	PERFORMANCE SPECS			AMBIENT TEMP	
		LUMENS	WATTS	EFFICACY	MIN	MAX
1X4	1/LED-XBL1	2,961	44	67	-20C (-4F)	40C (104F)
1X4	1/LED-XBL2	4,025	58	69	-20C (-4F)	40C (104F)
1X4	2/LED-XBL1	5,922	88	67	-20C (-4F)	40C (104F)
1X4	1/LED-XBL3	6,121	88	70	-20C (-4F)	40C (104F)
1X4	2/LED-XBL2	8,049	115	70	-20C (-4F)	40C (104F)
1X4	2/LED-XBL3	12,241	175	70	-20C (-4F)	40C (104F)
2X2	1/LED-XBL1	1,522	22	69	-20C (-4F)	40C (104F)
2X2	1/LED-XBL2	2,073	29	71	-20C (-4F)	40C (104F)
2X2	2/LED-XBL1	3,044	44	69	-20C (-4F)	40C (104F)
2X2	1/LED-XBL3	3,073	44	70	-20C (-4F)	40C (104F)
2X2	2/LED-XBL2	4,146	58	71	-20C (-4F)	40C (104F)
2X2	3/LED-XBL1	4,566	66	69	-20C (-4F)	40C (104F)
2X2	4/LED-XBL1	6,088	89	69	-20C (-4F)	40C (104F)
2X2	2/LED-XBL3	6,146	88	70	-20C (-4F)	40C (104F)
2X2	3/LED-XBL2	6,219	87	71	-20C (-4F)	40C (104F)
2X2	4/LED-XBL2	8,292	116	72	-20C (-4F)	40C (104F)
2X2	3/LED-XBL3	9,219	132	70	-20C (-4F)	40C (104F)
2X2	4/LED-XBL3	12,292	175	70	-20C (-4F)	40C (104F)
2X4	1/LED-XBL1	3,216	44	73	-20C (-4F)	40C (104F)
2X4	1/LED-XBL2	4,411	58	76	-20C (-4F)	40C (104F)
2X4	2/LED-XBL1	6,432	88	73	-20C (-4F)	40C (104F)
2X4	1/LED-XBL3	6,737	88	77	-20C (-4F)	40C (104F)
2X4	2/LED-XBL2	8,822	116	76	-20C (-4F)	40C (104F)
2X4	3/LED-XBL1	9,647	132	73	-20C (-4F)	40C (104F)
2X4	4/LED-XBL1	12,863	176	73	-20C (-4F)	40C (104F)
2X4	3/LED-XBL2	13,233	174	76	-20C (-4F)	40C (104F)
2X4	2/LED-XBL3	13,473	176	77	-20C (-4F)	40C (104F)
2X4	4/LED-XBL2	17,644	231	76	-20C (-4F)	40C (104F)
2X4	3/LED-XBL3	20,210	264	77	-20C (-4F)	40C (104F)
2X4	4/LED-XBL3	26,946	351	77	-20C (-4F)	40C (104F)

PHOTOMETRICS - DYNAMIC



Dynamic Board Spectral Power Distribution (3500K)

PHOTOMETRICS - STATIC



Static Board Spectral Power Distribution (3500K)

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HOW BIOS® WORKS

Production of melatonin, the hormone that helps us to sleep, is regulated by the ipRGC, a non-visual photoreceptor in the human eye. The wavelength of blue sky light at 490nm, present in sunlight, prevents melatonin production during the day. These signals are crucial in allowing humans to distinguish between day and night, promoting better sleep, health and well-being.

Blue Spectrum Peak Emission at 490nm

DYNAMIC LIGHT ENGINE

The SkyBlue® Dynamic Light Engine automatically calibrates the light level, reducing melanopic lux while keeping photopic lux at a constant. Dynamic light engines are paired with the current sensing smart BIOS® Bio-Dimming module allowing it operate using any single channel CC LED driver, using any dimming interface. Available in 3500K (dim to 3000K), and 4000K (dim to 3500K).

STATIC LIGHT ENGINE

The SkyBlue® Static Spectrum Light Engine delivers the industry's best melanopic-to-photopic (m/p) ratio, with R9 greater than 90 at each color temperature. Easily integrated into existing LED fixtures and compatible with all LED drivers, the SkyBlue® Static Spectrum Light Engine is the ideal replacement for static color light fixtures. Static light engines have the full output of BIOS® SkyBlue® all the time and the peak cannot be adjusted.

DIMMER SETTINGS WITH BIOS® DYNAMIC DIMMING TECHNOLOGY

	DIMMER SETTING	BIOS® SKYBLUE®	LIGHT OUTPUT
	100% (full on)	100%	100%
	99%-51%	100%-0%	100%-90%
	50%	No BIOS®	~90%
	49%-0%	No BIOS®	Linear Dimming

BIOS® SkyBlue® operates at 100% when the light output is at 100%, for maximum circadian impact. As the light is dimmed, BIOS® SkyBlue® dims until 50% is reached when the BIOS® SkyBlue® is no longer present.

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