

# Circadian Behavioral Health Troffers

Anti-Ligature 1x4, 2x2 & 2x4 Recessed & Surface Mounted BIOS® Behavioral Health LED Luminaires



- **IP65 Rated**
- **Anti-Ligature Zero Clearance Door Frame Design**
- **Polycarbonate Lensing & Tamper-Resistant Fasteners**
- **Standard**
- **0-10V Dimming Down to 1% Standard**
- **Recessed Housing Suitable for Grid or Flange Installation.**
- **This Kurtzon product is Illuminated by BIOS® to provide healthy, low energy lighting that promotes improved sleep, better health and well-being.**



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. Whilst 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.

## ORDERING GUIDE

Series	Installation Type	Material	Size	Row Qty.	LED Type	CCT/Dim Type	Voltage	Lens: (Inside/Outside)	Options
VL	R-ZCD: Recess Mount With Zero Clearance Door  <i>*SUITABLE FOR BOTH GRID OR HARDLID INSTALLATIONS</i>	3: White 430 SS Hsg. & Polished 304 SS Door	1x4: 1'x4' Housing	1	LED-XBL1	835BIOS-DY	UNV: 120-277 Vac	<b>Prismatic Lensing:</b> 1: .125" P12 Polycarbonate 2: .140" P12 High Impact Acrylic 3: .156" P12 Polycarbonate  <b>Flat Lensing:</b> 5: .125" Clear Flat Polycarbonate 6: .187" Clear Flat Polycarbonate 7: .250" Clear Flat Polycarbonate	<b>FF:</b> Fuse & Holder <b>EM10:</b> 10W Integral LED EM (Specify Input Voltage) <b>EM20:</b> 20W Remote LED EM (Specify Input Voltage) <b>SW:</b> Wet Location Hub Supplied (not installed) <b>PxL:</b> Programmed to User Specified Lumen Value. <b>PxW:</b> Programmed to User Specified Wattage Value. <b>10KV:</b> 10KV Parallel Surge Protection <b>WHIP:</b> Must Specify Length and Wire Qty <b>AH:</b> Allen Head SS Tamperproof Fasteners <b>TPWHT:</b> Tamper Resistant Torx Fasteners Painted White <b>YMB:</b> Optional Yoke Mounting Brackets <b>WHT:</b> White Painted Stainless Steel Door Frame
				2	LED-XBL2	840BIOS-DY			
		4: White AL Hsg. & Polished 304 SS Door	2x2: 2'x2' Housing	1	LED-XBL3	835BIOS-ST			
				2		840BIOS-ST			
		7: White AL Hsg. & White CRS Door	OR	3					
				4					
		8: White 430 SS Hsg. & White CRS Door	2x4: 2'x4' Housing	1					
				2					
	S-ZCD: Surface Mount With Zero Clearance Door	1: White CRS Hsg. & White CRS Door	1x4: 1'x4' Housing	1	LED-XBL1	835BIOS-DY			
				2	LED-XBL2	840BIOS-DY			
		2: White CRS Hsg. & Polished 304 SS Door	2x2: 2'x2' Housing	1	LED-XBL3	835BIOS-ST			
				2		840BIOS-ST			
		3: White 430 SS Hsg. & Polished 304 SS Door	OR	3					
				4					
7: White AL Hsg. & White CRS Door	2x4: 2'x4' Housing	4							

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

# Circadian Behavioral Health Troffers

Anti-Ligature 1x4, 2x2 & 2x4 Recessed & Surface Mounted BIOS® Behavioral Health 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 .050" 3003 Aluminum, 20Ga 430 Stainless Steel, or 20Ga Cold Rolled Steel. Available in nominal 1x4, 2x2 and 2x4 sizes only.

**DOOR FRAME:** One piece zero clearance interference fit doorframe regressed into housing and designed to prevent ligature. Secured by captive Torx tamperproof fasteners and hinged to housing with aircraft cables. Available in Powder coated 18Ga steel or Polished 304 Stainless Steel

**GASKETS:** Closed cell microcellular extruded gasket with vulcanized corners making a one-piece oil and solvent resistant gasket system.

**LENS:** High durability minimum .125" thick inverted prismatic lensing. Lens materials available in polycarbonate or High Impact Acrylic, and factory sealed to door with silicone.

**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%.

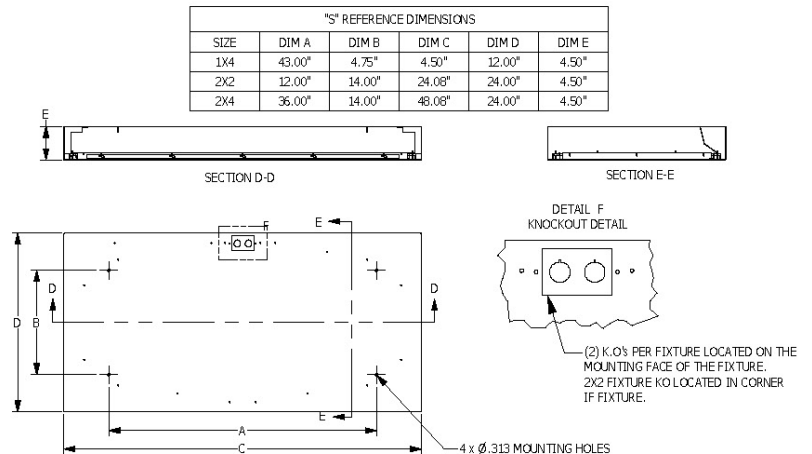
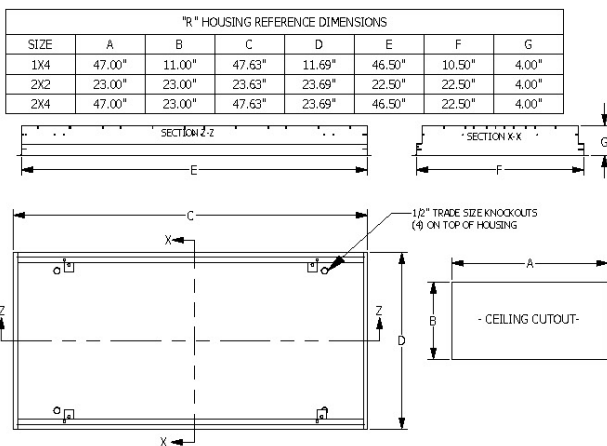
**INSTALL RECESSED:** One fixture suitable for Grid and Flanged installation. Accommodates 1" and 1.5" T-Bar Grid see below detail drawing for reference. Four adjustable toggle arms with holes for seismic support wire attachment. Supply entry via 1/2" trade size flattened knockouts. Optional Yoke Mounting Bracket.

**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:** IP65 rated for dust and water ingress. Suitable for 1700 PSI high pressure hosedowns. ETL listed per UL\_1598 for wet locations. Chicago PlenumRated. Drivers and LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

## PRODUCT DRAWINGS



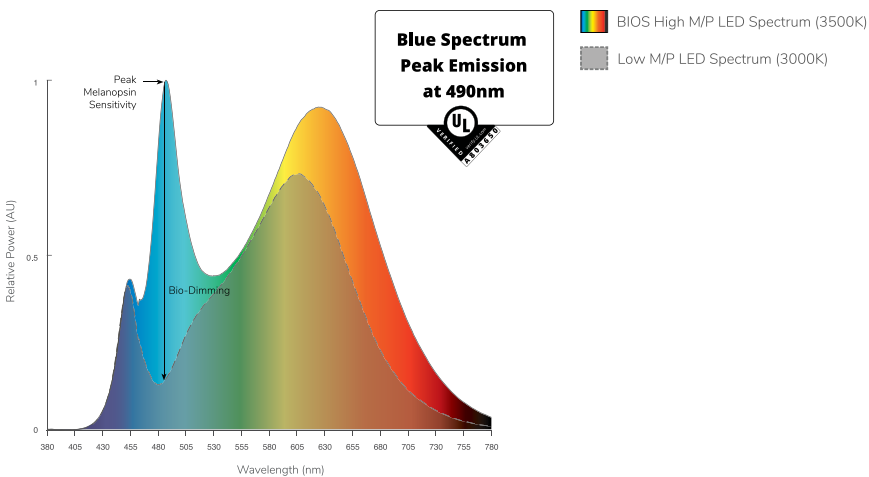
# Circadian Behavioral Health Troffers

Anti-Ligature 1x4, 2x2 & 2x4 Recessed & Surface Mounted BIOS® Behavioral Health LED Luminaires

## ENERGY DATA

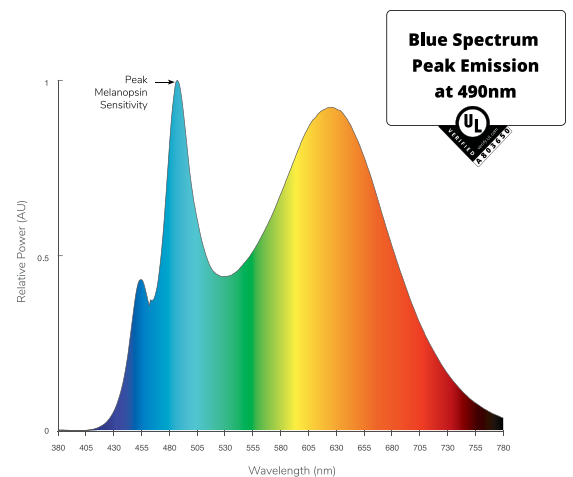
Energy Data Pending

### PHOTOMETRICS - DYNAMIC



Dynamic Board Spectral Power Distribution (3500K)

### PHOTOMETRICS - STATIC



Static Board Spectral Power Distribution (3500K)

## Circadian Behavioral Health Troffers

Anti-Ligature 1x4, 2x2 & 2x4 Recessed & Surface Mounted BIOS® Behavioral Health LED Luminaires

### 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.