

# Medical Operating Room Troffers

1x4, 2x2 and 2x4 Surface & Recessed High Lumen LED Luminaires with RF Filtering

- For use in Operating and Exam Rooms
- IP65 Rating
- Rf filtered circuits standard
- Green/white switching available
- Asymmetric distribution standard
- Antimicrobial finish standard
- Lutron controls available



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.

## ORDERING GUIDE

Series	Installation Type	Material	Size	Source	CCT	Circuits (White)	Green LED	Voltage	Mounting	Options
ML	OR: Recessed (Suitable for Flange & Grid)	3: White 430 SS Hsg. & White AM 430 SS Door 4: White Alum Hsg. & White AM 430 SS Door	1x4: 1' x 4' Housing  <i>NOTE: Only a total of 2 combined rows of leds can be specified.</i>	1/LEDR	83 CRI: 830 = 3000K CCT 835 = 3500K CCT 840 = 4000K CCT 850 = 5000K CCT	1/CIR 2/CIR	(optional) 1/GLED 2/GLED	120V 277V UNV 347V*	IND Individual	FC: Fuse & Holder (One Supplied Per Circuit) EM10: 10W Integral LED EM (Specify Input Voltage) EM20: 20W Remote LED EM (Specify Input Voltage) SYM: Symmetric pattern acrylic lens SSP: Satin Polished Stainless Steel Doorframe PxL: Programmed to User Specified Lumen Value.000 PxW: Programmed to User Specified Wattage Value.000 LDE1: Lutron Hi-Lume 1% Ecosystem LED Driver SOFTB GTD: Generator Transfer Device WHIP: Must Specify Length and Wire Qty HF1: 1% Dimming for 2x2 with LEDHF 10KV: 10KV Parallel Surge Protection (One Supplied Per Circuit)
				2/LEDR						
	OS: Surface	5: White Alum Hsg. & White AM Alum Door 7: White Alum Hsg. & White AM CRS Door	2x2: 2' x 2' Housing OR 2x4: 2' x 4' Housing  <i>NOTE: Only a total of 4 combined rows of leds can be specified.</i>	2/LEDH	90+ CRI: 935 = 3500K CCT 940 = 4000K CCT 950 = 5000K CCT	Specify Qty of RF Filtered Circuits for White Light	Green LED's are provided with a dedicated RF Filtered circuit.		CRM Continuous Row Mount  CRM suitable for hardlid ceilings only.	
				2/LEDHF						

# Medical Operating Room Troffers

1x4, 2x2 and 2x4 Surface & Recessed High Lumen LED Luminaires with RF Filtering

## 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. Optional row mounting available must specify in options

**DOOR FRAME:** One-Piece Inset door frame regresses into the housing to allow the 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 Aluminum, 20Ga 430 Stainless Steel, or 20Ga 1008 CRS.

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

**LENS:** Standard lens provided is an RF shielded asymmetric distribution lens with frost overlay. SYM Option provides RF shielded .125" Symmetric P12 Acrylic Lens.

**LEDS:** Commercially available in a wide variety of Color Temperature (CCT), FLUX, and CRI. Highly efficient and consistent color maintained to 3 SDMC for color critical applications. B50/L70 and compliant with Zhaga recognized hole patterns. See options for available 540nm Green LEDs. Consult factory for LED options or configurations not listed below.

**ELECTRICAL:** 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. Multiple internal circuits are available for scene settings, each specified circuit is provided with an RFI filter that is tested to meet MIL-STD-461. Fixtures available with 10w 90min Emergency battery backups and surge protection. Consult factory for additional options not listed.

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

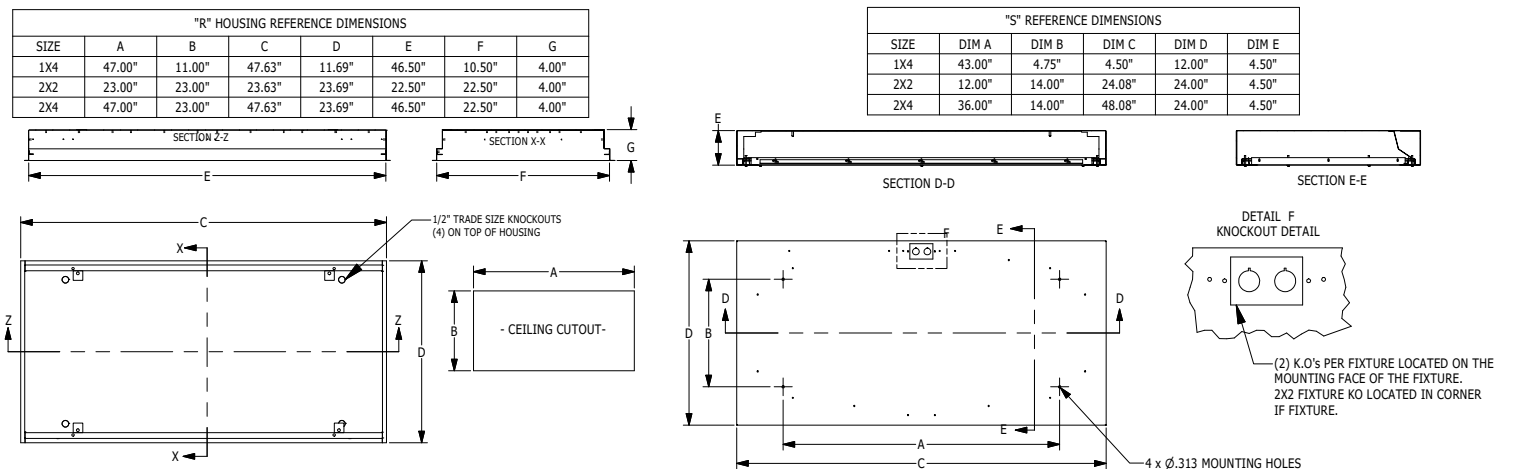
**INSTALLATION:** Fixtures are supplied with .875" flattened knockouts for supply entry. Recessed housings have (4) swing out toggle arms that are used to draw the fixture in to the ceiling for hard lid installation without the need for a yoke hanger. The toggle arm adjuster bolts are accessible from the room side of the luminaire and the actual toggles can be used as means of establishing a seismic support for lay in ceiling installations.

**CRM:** Continuous Row Mounting (CRM) option provides a means of securing luminaires to each other end to end in straight rows only. While all recessed luminaires are suitable for thru wiring, the CRM option is only available for Hard lid installation. CRM fixtures come with flanges on 2 of the 4 sides so that the luminaires can mount to each other without the appearance of a larger gap between the two fixtures. Endcaps are factory installed based upon customer provided row configuration information and the Ceiling cutouts can be determined as shown on the CRM installation instructions that can be found on our website.

**DOOR FINISH:** White Dupont Alesta using Agion silver ion antimicrobial powder coat finish standard. See options for polished stainless steel.

**LISTINGS:** Military Standard 461F compliant for conducted and radiated emissions. IP65 rated for dust and water ingress. Suitable for 1700 PSI high pressure hoses. ETL listed per UL\_1598 for wet locations. Chicago Plenum Rated. Certified ISO-14644-1 for class 5 through class 9 cleanspaces. Certified Fed Std 209E for Class 100 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



# Medical Operating Room Troffers

1x4, 2x2 and 2x4 Surface & Recessed High Lumen LED Luminaires with RF Filtering

## ENERGY DATA

MEDICAL ASY INSET-FGRS-LED TROFFER (APPROX <sup>1</sup> LUMENS DELIVERED)														
ENCLOSURE SIZE	LIGHT PACKAGE	STANDARD DIMMING	83 CRI (3000K - 5000K)			AMBIENT TEMP		90+ CRI (3500K, 4000K)			AMBIENT TEMP			
			ASY	SYM	WATTS <sup>2</sup>	MINIMUM	MAXIMUM <sup>4</sup>	ASY	SYM	WATTS <sup>2</sup>	MINIMUM	MAXIMUM <sup>4</sup>		
1X4	1LEDR	0-10V 1%	3,150	3,500	34	-20°C (-4°F)	40°C (104°F)	2,500	2,800	34	-20°C (-4°F)	40°C (104°F)		
1X4	2LEDR	0-10V 1%	6,300	7,100	68	-20°C (-4°F)	40°C (104°F)	5,000	5,680	62	-20°C (-4°F)	40°C (104°F)		
1X4	2LEDH	0-10V 1%	11,500	12,800	113	-20°C (-4°F)	40°C (104°F)	11,000	12,352	146	-20°C (-4°F)	35°C (95°F)		
1X4	2LEDHF	0-10V 1%	14,000	15,600	139	-20°C (-4°F)	35°C (95°F)	PENDING	PENDING	PENDING	-20°C (-4°F)	35°C (95°F)		
1X4	EM10	NA	VARIES	VARIES	4	0°C (32°F)	40°C (104°F)	VARIES	VARIES	4	0°C (32°F)	40°C (104°F)		
2X2	2LEDR	0-10V 1%	3,000	3,540	35	-20°C (-4°F)	40°C (104°F)	2,400	2,832	32	-20°C (-4°F)	40°C (104°F)		
2X2	3LEDR	0-10V 1%	4,500	5,391	53	-20°C (-4°F)	40°C (104°F)	3,600	4,313	48	-20°C (-4°F)	40°C (104°F)		
2X2	2LEDH	0-10V 1%	4,700	5,610	57	-20°C (-4°F)	40°C (104°F)	4,600	5,414	73	-20°C (-4°F)	35°C (95°F)		
2X2	4LEDR	0-10V 1%	5,800	6,729	68	-20°C (-4°F)	40°C (104°F)	4,600	5,383	62	-20°C (-4°F)	40°C (104°F)		
2X2	3LEDH	0-10V 1%	7,100	8,916	86	-20°C (-4°F)	40°C (104°F)	6,900	8,604	110	-20°C (-4°F)	35°C (95°F)		
2X2	4LEDH	0-10V 1%	9,400	11,230	113	-20°C (-4°F)	40°C (104°F)	9,200	<b>10,845</b>	146	-20°C (-4°F)	35°C (95°F)		
2X2	4LEDHF	0-10V 5%	17,000	<b>20,293</b>	171	-40°C (-40°F)	35°C (95°F)	NA	NA	NA	NA	NA		
2X2	4LEDHF (1%)	0-10V 1%	<b>13,564</b>	<b>16,220</b>	138	-20°C (-4°F)	35°C (95°F)	PENDING	PENDING	PENDING	-20°C (-4°F)	35°C (95°F)		
2X2	EM10	NA	VARIES	VARIES	4	0°C (32°F)	40°C (104°F)	VARIES	VARIES	4	0°C (32°F)	40°C (104°F)		
2X4	2LEDR	0-10V 1%	7,200	8,036	68	-20°C (-4°F)	40°C (104°F)	5,700	6,429	62	-20°C (-4°F)	40°C (104°F)		
2X4	3LEDR	0-10V 1%	10,800	12,061	103	-20°C (-4°F)	40°C (104°F)	8,500	9,649	94	-20°C (-4°F)	40°C (104°F)		
2X4	2LEDH	0-10V 1%	11,900	13,300	113	-20°C (-4°F)	40°C (104°F)	11,500	12,835	148	-20°C (-4°F)	35°C (95°F)		
2X4	4LEDR	0-10V 1%	14,400	15,711	135	-20°C (-4°F)	40°C (104°F)	11,300	12,569	124	-20°C (-4°F)	40°C (104°F)		
2X4	3LEDH	0-10V 1%	17,800	19,952	169	-20°C (-4°F)	40°C (104°F)	17,100	19,254	221	-20°C (-4°F)	35°C (95°F)		
2X4	4LEDH	0-10V 1%	23,800	26,600	225	-20°C (-4°F)	40°C (104°F)	22,800	<b>25,519</b>	295	-20°C (-4°F)	35°C (95°F)		
2X4	4LEDHF	0-10V 1%	<b>32,112</b>	<b>34,839</b>	279	-20°C (-4°F)	35°C (95°F)	PENDING	PENDING	PENDING	-20°C (-4°F)	35°C (95°F)		
2X4	EM10	NA	VARIES	VARIES	4	0°C (32°F)	40°C (104°F)	VARIES	VARIES	4	0°C (32°F)	40°C (104°F)		

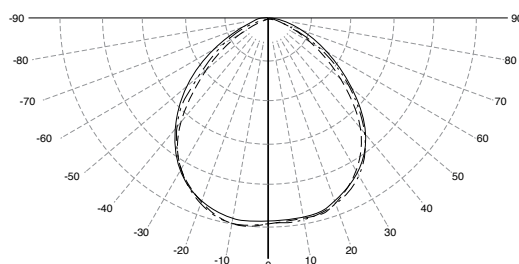
- 1 DELIVERED LUMEN DATA IS EXTRAPOLATED FROM MEASURED DATA @25C WITH NO EXTRA OPTIONS. VARIANCES WILL OCCUR WHEN OPTIONS ARE CHOSEN
- 2 WATTAGE IS MEASURED WITH 4000K SELECTION @ 120VAC AND Tambient = 25C. WATTAGES MAY VARY WITH ALTERNATE CONFIGURATIONS
- 3 EFFICACY CALCULATED USING 4000K CCT DATA.
- 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
- 7 EM20 DELIVERED LUMENS = (DELIVERED LUMENS/LUMINAIRE WATTS)\*20

MEDICAL ASYMMETRIC INSET-FGRS-LED TROFFER (APPROX <sup>1</sup> LUMENS DELIVERED)						
ENCLOSURE SIZE	LIGHT PACKAGE	STANDARD DIMMING	540nm GREEN LED			
			LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>	
1X4	1GLED	0-10V 1%	2,500	36	69	
1X4	2GLED	0-10V 1%	5,000	72	69	
2X2	1GLED	0-10V 1%	1,200	18	67	
2X2	2GLED	0-10V 1%	2,400	36	67	
2X4	1GLED	0-10V 1%	2,500	36	69	
2X4	2GLED	0-10V 1%	5,000	72	69	

## PHOTOMETRICS

### ML-OR-X-2X2-4/LEDHF835-1/CIR-IND

Report No: 19719.0  
 Total Lumens: 13,564  
 Wattage: 139.330  
 Efficacy: 97.4 (Lumens Per Watt)  
 Fixture Size: 2'x2'



### ML-OR-X-2X4-4/LEDHF835-1/CIR-UNV-IND-SYM

Report No: 19676.0  
 Total Lumens: 34,839  
 Wattage: 278.69  
 Efficacy: 125.0 (Lumens Per Watt)  
 Fixture Size: 2'x4'

