

# Surgical/Medical ML-FGPA Series - Tunable White

2x4 Plenum Access LED Surgical Troffer With Asymmetric Distribution



- For use in Operating and Exam Rooms
- IP65 Rated
- Access to Plenum using Sealed Access Panel in Housing
- Available in Row Mounted Configurations
- Optional Green/White Switching circuit
- Asymmetric Distribution Lens Standard for Directing Light Over the Operating Table
- Anti-Microbial White Finish Standard
- Tunable White 2700k - 6500k CCT
- Available With DALI Or 0-10V Controls



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## ORDERING GUIDE

Series	Installation Type	Material	Size	Source	CCT	Control	Green LED	Voltage	Mounting	Options
<b>ML</b>										
<b>ML</b>	<b>FGPA:</b> Recessed Luminaire for Grid and Flange with Plenum Access	<b>4:</b> White Alum Hsg. & White AM 430 SS Door <b>5:</b> White Alum Hsg. & White AM Alum Door <b>7:</b> White Alum Hsg. & White AM CRS Door	<b>2x4:</b> Nominal 2'x4' Housing	<b>1/LEDTW</b> <b>2/LEDTW</b> <b>3/LEDTW</b> <b>4/LEDTW</b>	<b>827/865:</b> 80 CRI; 2700k-6500k CCT	<b>0-10v Analog Dimming</b> <b>10V-CON:</b> Continuous CCT 0-10v dimming <b>10V-WD:</b> Warm Dim 0-10V dimming <b>DALI Digital Dimming</b> <b>DAL-CON:</b> Cont. CCT DALI dimming	(OPTIONAL) <b>1/GLED</b> <b>2/GLED</b>	<b>120V</b> <b>277V</b> <b>UNV</b>	<b>IND</b> Individual <b>CRM</b> Continuous Row Mount <i>CRM suitable for hardlid ceilings only.</i>	<b>FC:</b> Fuse & Holder (One Supplied Per Circuit) <b>EM10:</b> 10W Integral LED EM (Specify Input Voltage) <b>EM20:</b> 20W Remote LED EM (Specify Input Voltage) <b>SYM:</b> Symmetric pattern Acrylic Lens (Inverted) <b>SSP:</b> Satin Polished Stainless Steel Doorframe <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>GTD:</b> Generator Transfer Device <b>WHIP:</b> Must specify Length, Type, Wire Qty
<p><b>NOTE:</b> Only a total of 4 combined rows of leds can be specified. Each color with be provided with its own filtered circuit and does not need to be specified.</p>										

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## SPECIFICATIONS

**HOUSING:** Welded .050" thick aluminum construction. Hole free housing with flattened knockouts and a large plenum access plate hinged to housing by (2) aircraft cables allowing simple access to the area above the ceiling.

**DOOR FRAME:** One piece inset door frame with seam welds regressing into housing to allowing the extruded 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.

**REFLECTOR:** Die formed high reflectance white powder coated (min. 92% reflectivity). When removed, provides easy access to the large wireway and convenient thru-wiring.

**GASKETS:** Extruded closed cell gasket with vulcanized corners form a one-piece gasket system. Gasket is on both the plenum access panel and the door frame to completely seal the enclosure

**LENS:** Standard Lens is a 3 piece assembly consisting of a clear flat acrylic lens on the room side followed by a linear asymmetric lens and finished with a frost overlay on top. The clear flat room side lens is used to allow an easy to clean surface. The frosted diffusing top layer provides a more evenly illuminated surface. Center lens is an Asymmetric distribution pattern optimized for high visibility within the surgical field. Symmetric lens with inverted pattern available in options.

**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.

**GREEN LEDs:** Optional Green LEDs are designed for reduced eye strain and glare control when using monitors outside the surgical field. When specified, the green LED's are provided with their own filtered power supply for separate switching.

**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.

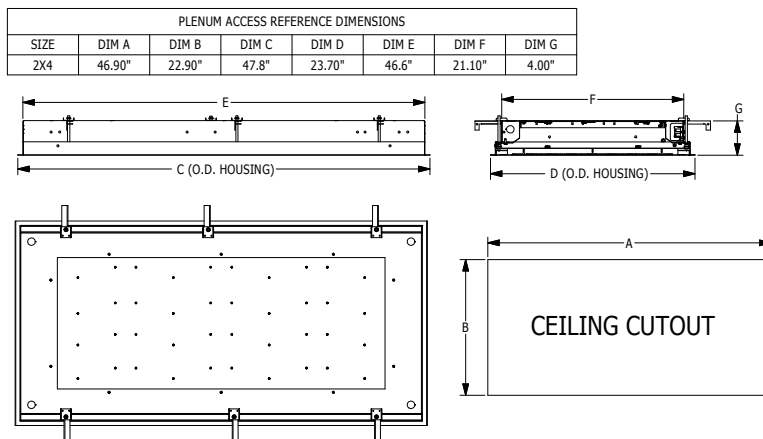
**FINISH:** Alesta-AM antimicrobial polyester powder coating using a silver ion antimicrobial process. See option SSP for satin polished stainless steel doors.

**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.

**LISTINGS:** ETL Listed per UL-1598 Wet Locations. Suitable for non-IC installation. IP-65 dust and water jet resistance. IBEW Union Label. Military Standard 461F compliant for conducted and radiated emissions. Drivers and LEDs are covered by a 5 year warranty, the remaining fixture is covered by a 10 year warranty.

## PRODUCT DRAWINGS



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## ENERGY DATA

MEDICAL PLENUM ACCESS TROFFER (APPROX <sup>1</sup> LUMENS DELIVERED)							
ENCLOSURE SIZE	LIGHT PACKAGE	Tunable White 80 CRI (4000K)			AMBIENT TEMP		CCT RANGE
		ASY	SYM	WATTS <sup>2</sup>	MINIMUM	MAXIMUM <sup>4</sup>	
2X4	2LEDTW	6,800	7,600	68	-20°C (-4°F)	40°C (104°F)	2700k - 6500k
2X4	3LEDTW	10,250	11,450	103	-20°C (-4°F)	40°C (104°F)	2700k - 6500k
2X4	4LEDTW	13,650	14,900	135	-20°C (-4°F)	40°C (104°F)	2700k - 6500k
2X4	EM10	VARIES	VARIES	4	0°C (32°F)	40°C (104°F)	NA
2X4	1GLED540	2500	3000	36	-20°C (-4°F)	40°C (104°F)	540nM
2X4	2GLED540	5000	6000	72	-20°C (-4°F)	40°C (104°F)	540nM
2X4	3GLED540	7500	9000	108	-20°C (-4°F)	40°C (104°F)	540nM

- 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
- 7 EM20 DELIVERED LUMENS = (DELIVERED LUMENS/LUMINAIRE WATTS)\*20