

Surgical/Medical ML-FGPA Series: ML-FGPA-LED

2x4 Plenum Access LED Recessed 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**
- **Recessed Housing suitable for T-bar Grid & Hardlid Installations**
- **B.A.A. & B.A.B.A Compliant & Made in the USA by a Family Owned US Corporation**



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ORDERING GUIDE

Series	Material	Size	Row Qty.	LED Type	CCT/CRI	Green LED	Circuits	Voltage	Mounting	Optics	Options
ML-FGPA		2X4									

Series	Material	Size	Light Source			Green LED	Circuits (white)	Voltage	Mounting	Optics		
			Row Qty.	LED Type	CCT/CRI							
ML-FGPA	4 White Alum Hsg. & White AM 430 SS Door	2x4 2x4 Housing	2	LEDR	83 CRI:	(optional)	1/CIR	120V	IND Individual	SYM	P12 Prismatic Lens With Embedded RF Grid	
			3	LEDH	830 3000K	1/GLED	2/CIR	277V		ASY	Diffusing Optics Assembly With Linear Prismatic Asymmetric Distribution	
	4		LEDHF	835 3500K	2/GLED	UNV	347V*	FROST		0.125" Flat Diffusing Frost Acrylic (No RFI Grid)		
				840 4000K	3/GLED			LBW		0.125" Flat Diffused Acrylic with Linear Batwing Distribution (No RFI Grid)		
	5 White Alum Hsg. & White AM Alum Door				850 5000K				CRM Continuous Row Mount	GH85	0.125" Flat Diffused Acrylic with Glare Suppression Distribution (No RFI Grid)	
											AB20	0.125" Flat Diffused 20 Degree Asymmetric Distribution (No RFI Grid)
	7 White Alum Hsg. & White AM CRS Door									CRM suitable for hardlid ceilings only	Note*: ASY option is standard and will be provided when no other option is selected	
NOTE: Only a total of 4 combined rows of leds can be specified. Each color will be provided with its own filtered circuit and does not need to be specified.												

Options	
FC	Fuse & Holder (One Supplied Per Circuit)
EM10	10W Integral LED EM (Specify Input Voltage)
EM20	20W Remote LED EM (Specify Input Voltage)
SSP	Satin Polished Stainless Steel Doorframe
GG	1/8" Thick Grid Gasket (Provided Loose)
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
D20FF	0-10V Dimming to 1% with Dim to Off
Note*: Specify Value in Ordering Notes Below	

Ordering Notes, If Applicable

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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. GG option provides a loose 1/8" thick adhesive backed gasket intended to adhere to the top face of a suspended grid ceiling for grid profiles that do not already have gasket on them.

OPTICS: Standard ASY 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 and is provided with a silkscreened RF grid to absorb radiated emissions. Symmetric lens with inverted pattern and other optics are also available

WHITE LEDs: Zhaga replaceable LED arrays using commercially available boards backed by a 5 year warranty. Available in both 83 & 90 CRI with a wide variety of color temperatures and lumen outputs. Consult factory for LED options not listed.

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: Universal voltage (120-277volt). LED drivers are commercially available high efficiency, HPF and dimmable to 1% with 0-10v control. Standard drivers are programmable to match wattage or lumen requirements. Provided with a five (5) year warranty. Each fixture is standard with one RFI filter per circuit specified (see "Circuits" below). Tested to surpass conducted emissions of Mil. Std. 461F. Filter designed specifically for today's high frequency electronic drivers used in surgical and other medical applications.

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.

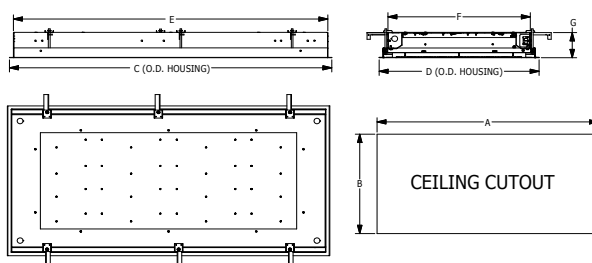
FINISH: Alesta-AM antimicrobial polyester powder coating using a silver ion antimicrobial process. See option SSP for satin polished stainless steel doors.

INSTALLATION: Suitable for recessed Non-IC installation into covered Lay-in or Hardlid ceilings. Fixtures are supplied with .875" flattened knockouts for supply entry. Recessed housings have (6) 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 toggles can be used as means of establishing a seismic support. Additionally, for Lay-in installations the toggle arms can be fastened directly to the T-bar to provide a clamping force onto the face of the grid gasket when tightened. Confirm ceiling compatibility with dimension drawings below.

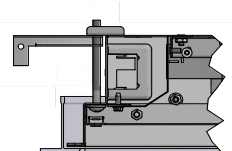
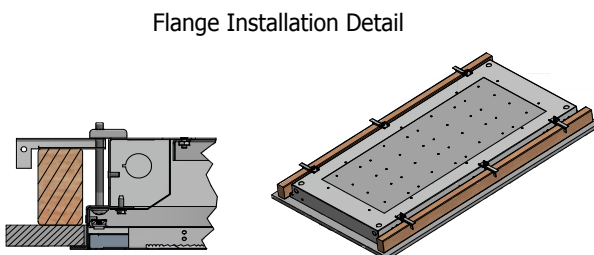
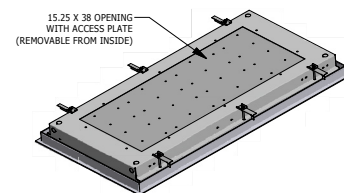
LISTINGS: Military Standard 461G compliant for conducted and radiated emissions. IP65 rated for dust and water ingress. Suitable for 1700 PSI high pressure hosedowns. ETL listed per UL 1598 for wet locations. Chicago Plenum Rated. Certified ISO-14644-1 for class 5 through class 9 cleanspaces. Certified Fed Std 209E for Class 100 through Class 100,000 cleanspaces. 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

PLENUM ACCESS REFERENCE DIMENSIONS						
SIZE	DIM A	DIM B	DIM C	DIM D	DIM E	DIM F
2X4	46.90"	22.90"	47.8"	23.70"	46.6"	21.10"



Grid Installation Detail



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ENERGY DATA

MEDICAL PLENUM ACCESS TROFFER (APPROX ¹ LUMENS DELIVERED)											
ENCLOSURE SIZE	LIGHT PACKAGE	CRI	STANDARD DIMMING	ASYMMETRIC LENS (STANDARD)				SYMMETRIC LENS (OPTIONAL)			
				LUMENS	WATTS ²	EFFICACY ³	MAXIMUM ⁴	LUMENS	WATTS ²	EFFICACY ³	MAXIMUM ⁴
2X4	2LEDR	83	0-10V 1%	5,777	55	105	45°C (113°F)	6,718	55	122	45°C (113°F)
2X4	2LEDR	90+	0-10V 1%	5,528	56	99	45°C (113°F)	6,428	56	115	45°C (113°F)
2X4	3LEDR	83	0-10V 1%	8,666	83	104	45°C (113°F)	10,077	83	121	45°C (113°F)
2X4	3LEDR	90+	0-10V 1%	8,292	83	100	45°C (113°F)	9,642	83	116	45°C (113°F)
2X4	2LEDH	83	0-10V 1%	11,404	109	105	40°C (104°F)	13,261	109	122	40°C (104°F)
2X4	2LEDH	90+	0-10V 1%	10,837	109	99	40°C (104°F)	12,601	109	116	40°C (104°F)
2X4	4LEDR	83	0-10V 1%	11,555	111	104	45°C (113°F)	13,436	111	121	45°C (113°F)
2X4	4LEDR	90+	0-10V 1%	11,056	113	98	45°C (113°F)	12,856	113	114	45°C (113°F)
2X4	3LEDH	83	0-10V 1%	17,107	164	104	40°C (104°F)	19,892	164	121	40°C (104°F)
2X4	3LEDH	90+	0-10V 1%	16,256	164	99	40°C (104°F)	18,902	164	115	40°C (104°F)
2X4	4LEDH	83	0-10V 1%	22,809	220	104	40°C (104°F)	26,522	220	121	40°C (104°F)
2X4	4LEDH	90+	0-10V 1%	21,674	220	99	40°C (104°F)	25,202	220	115	40°C (104°F)
2X4	4LEDHF	83	0-10V 1%	35,036	305	115	35°C (95°F)	40,740	305	134	35°C (95°F)
2X4	4LEDHF	90+	0-10V 1%	30,396	373	81	35°C (95°F)	35,344	373	95	35°C (95°F)
2X4	EM10	83	NA	810-1150	4	NA	40°C (104°F)	950-1340	4	NA	40°C (104°F)
2X4	1GLED	540nm	0-10V 1%	2320	38	61	40°C (104°F)	2,700	38	71	40°C (104°F)
2X4	2GLED	540nm	0-10V 1%	4640	73	64	40°C (104°F)	5,400	73	74	40°C (104°F)
2X4	3GLED	540nm	0-10V 1%	6960	110	63	40°C (104°F)	8,100	110	74	40°C (104°F)

¹ DELIVERED LUMEN DATA IS EXTRAPOLATED FROM MEASURED DATA @ 25°C WITH NO EXTRA OPTIONS. VARIANCES WILL OCCUR WHEN OPTIONS ARE CHOSEN

² WATTAGE IS MEASURED WITH 4000K SELECTION @ 120VAC AND Tambient = 25°C. WATTAGES MAY VARY WITH ALTERNATE CONFIGURATIONS

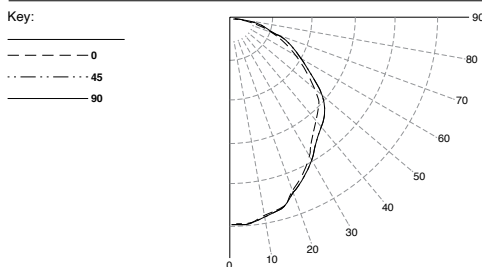
³ EFFICACY CALCULATED USING 4000K CCT DATA.

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.

PHOTOMETRICS

SYMMETRIC



ASYMMETRIC

