

# Medical Exam Room Troffers: ML-ES-LED

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

- **For use in Medical Patient and Exam Rooms**
- **IP55 Rating**
- **RF filtered circuits standard**
- **Green/white switching available**
- **Symmetric distribution standard**
- **Antimicrobial finish standard**
- **Lutron controls available**
- **B.A.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	Circuits	Green LED	Voltage	Mounting	Optics	Options			
<b>ML-ES</b>								<b>UNV</b>	<b>IND</b>					
Series	Material	Size	Light Source			Circuits (white)	Green LED	Voltage	Mounting	Optics				
			Row Qty.	LED Type	CCT/CRI					Optics	Options			
<b>ML-ES</b>	White 430 SS Hsg. & White AM 430 SS Door	1x4 1' x 4' Housing	1	LEDR	83 CRI:	1/CIR	(optional)	UNV	IND	Individual	<b>SYM</b> P12 Prismatic Lens With Embedded RF Grid			
			2	LEDH	830 3000K						2/CIR	1/GLED	<b>ASY</b> Diffusing Optics Assembly With Linear Prismatic Asymmetric Distribution	
	White Alum Hsg. & White AM 430 SS Door	2x2 2' x 2' Housing	2	LEDHF	835 3500K	2/GLED	Specify Qty of RF Filtered Circuits for White Light	Green LED's are provided with a dedicated RF Filtered circuit	<b>FROST</b> 0.125" Flat Diffusing Frost Acrylic (No RFI Grid)					
			3		840 4000K				<b>LBW</b> 0.125" Flat Diffused Acrylic with Linear Batwing Distribution (No RFI Grid)					
	White Alum Hsg. & White AM Alum Door	2x4 2' x 4' Housing	4	850 5000K	<b>GH85</b> 0.125" Flat Diffused Acrylic with Glare Suppression Distribution (No RFI Grid)									
				90+ CRI:	<b>AB20</b> 0.125" Flat Diffused 20 Degree Asymmetric Distribution (No RFI Grid)									
				935 3500K										Note*: SYM option is standard and will be provided when no other option is selected
				940 4000K										
				950 5000K										

Options	
<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 (One Supplied Per Circuit)
<b>GTD</b>	Generator Transfer Device
<b>WHIP</b>	Must Specify Length and Wire Qty
<b>OCCMW</b>	Internal microwave OCC Sensor
<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>LDE1</b>	Lutron Hi-Lume 1% Ecosystem LED Driver SOFTB
<b>SSP</b>	Satin Polished Stainless Steel Doorframe

Note\*: Specify Value in Ordering Notes Below

Ordering Notes, If Applicable

# Medical Exam Room Troffers: ML-ES-LED

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

## SPECIFICATIONS

**HOUSING:** One piece, hole free, robotically seam welded housing has flattened knockouts for a superior seal. Surface housings are available in .040" 3003 Aluminum or 20Ga 430 Stainless 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 Aluminum or 20Ga 430 Stainless steel

**GASKETS:** Closed cell 100% pure neoprene gasket with vulcanized corners making a one-piece oil and solvent resistant gasket system. Four .312" dia. mounting holes and a removable gasketed wiring access plate with Supply entry via 1/2" trade size flattened knockouts..

**OPTICS:** Standard "SYM" lens provided is a 12 Prismatic Acrylic Lens. ASY Lens option provide a linear prismatic lense with 20 degree beam distribution with frosted overlay. Both SYM & ASY options include a silkscreened RF grid to absorb radiated emissions, (Prisms must face outward). Other optic options are available but do not include the RF grid.

**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 backup and surge protection. Consult factory for additional options not listed.

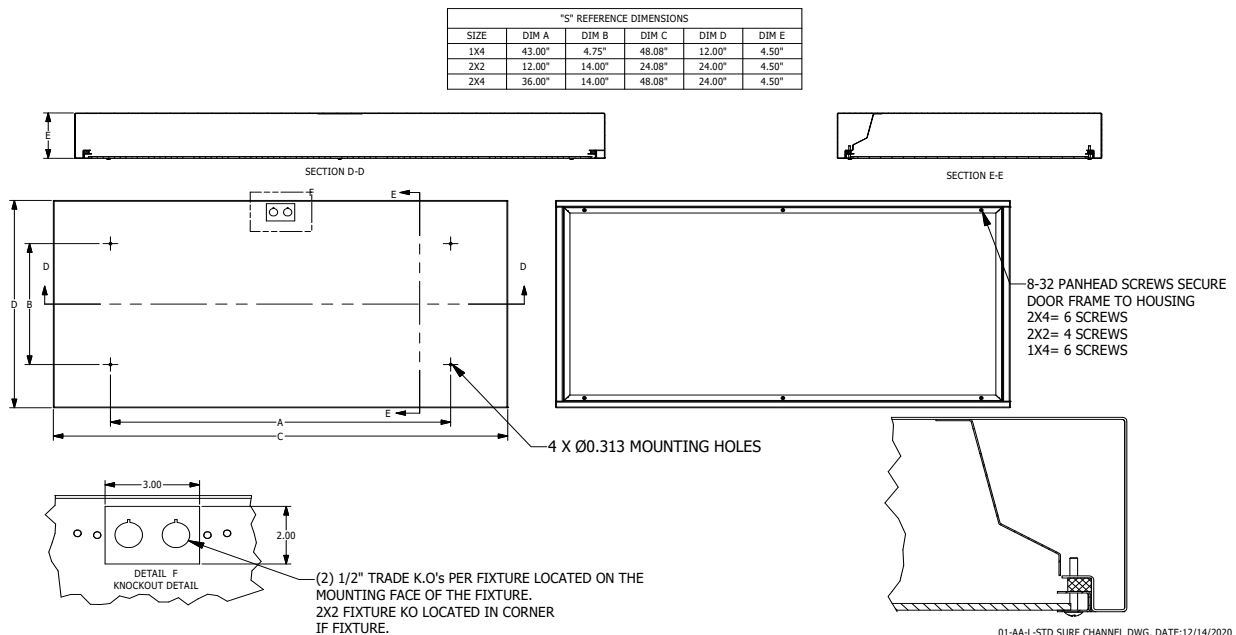
**REFLECTOR:** Die formed metal with high reflectance white polyester powder coat finish. Typical reflectivity 92%.

**INSTALLATION:** Fixtures are supplied with .875" flattened knockouts for supply entry. Suitable for surface installation onto covered ceilings only.

**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. IP55 rated for dust and water ingress. ETL listed per UL\_1598 for wet locations. 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 is Buy American Act (B.A.A.) compliant.

## PRODUCT DRAWINGS



# Medical Exam Room Troffers: ML-ES-LED

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## ENERGY DATA

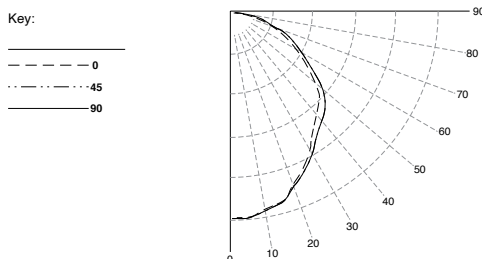
MEDICAL SYMMETRIC CHANNEL-FGRS-LED TROFFER (APPROX <sup>1</sup> LUMENS DELIVERED)										
ENCLOSURE SIZE	LIGHT PACKAGE	80 CRI (3000K - 5000K)				90 CRI (3500K, 4000K)				STANDARD DIMMING
		LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>	MAX AMB TEMP	LUMENS	WATTS <sup>2</sup>	EFFICACY <sup>3</sup>	MAX AMB TEMP <sup>4</sup>	
1X4	1LEDR	3,215	29	111	45°C (113°F)	3,100	29	107	45°C (113°F)	0-10V 1%
1X4	2LEDR	<b>6,430</b>	<b>55</b>	<b>117</b>	45°C (113°F)	<b>6,199</b>	<b>56</b>	<b>111</b>	45°C (113°F)	0-10V 1%
1X4	2LEDH	<b>12,446</b>	<b>109</b>	<b>114</b>	35°C (95°F)	<b>11,915</b>	<b>109</b>	<b>109</b>	35°C (95°F)	0-10V 1%
1X4	2LEDHF	<b>18,763</b>	<b>153</b>	<b>123</b>	35°C (95°F)	<b>16,060</b>	<b>182</b>	<b>88</b>	35°C (95°F)	0-10V 1%
1X4	EM10	1110-1230	4	NA	40°C (104°F)	880-1110	4	NA	40°C (104°F)	NA
2X2	2LEDR	3,260	29	112	45°C (113°F)	3,270	29	113	45°C (113°F)	0-10V 1%
2X2	3LEDR	<b>4,887</b>	<b>42</b>	<b>116</b>	45°C (113°F)	<b>4,902</b>	<b>42</b>	<b>117</b>	45°C (113°F)	0-10V 1%
2X2	2LEDH	6,410	55	117	40°C (104°F)	6,130	55	111	40°C (104°F)	0-10V 1%
2X2	4LEDR	6,510	55	118	45°C (113°F)	6,530	55	119	45°C (113°F)	0-10V 1%
2X2	3LEDH	<b>9,608</b>	<b>80</b>	<b>120</b>	40°C (104°F)	<b>9,186</b>	<b>81</b>	<b>113</b>	35°C (95°F)	0-10V 1%
2X2	4LEDH	12,800	109	117	40°C (104°F)	12,240	109	112	35°C (95°F)	0-10V 1%
2X2	4LEDHF	<b>18,782</b>	<b>153</b>	<b>123</b>	35°C (95°F)	<b>16,760</b>	<b>184</b>	<b>91</b>	35°C (95°F)	0-10V 1%
2X2	EM10	1120-1230	4	NA	40°C (104°F)	910-1190	4	NA	40°C (104°F)	NA
2X4	2LEDR	6,942	55	126	45°C (113°F)	6,640	56	119	45°C (113°F)	0-10V 1%
2X4	3LEDR	<b>10,412</b>	<b>83</b>	<b>125</b>	45°C (113°F)	<b>9,954</b>	<b>83</b>	<b>120</b>	45°C (113°F)	0-10V 1%
2X4	2LEDH	13,650	109	125	40°C (104°F)	12,990	109	119	40°C (104°F)	0-10V 1%
2X4	4LEDR	13,880	111	125	45°C (113°F)	13,270	113	117	45°C (113°F)	0-10V 1%
2X4	3LEDH	<b>20,464</b>	<b>164</b>	<b>125</b>	40°C (104°F)	<b>19,482</b>	<b>164</b>	<b>119</b>	40°C (104°F)	0-10V 1%
2X4	4LEDH	27,280	220	124	40°C (104°F)	25,970	220	118	40°C (104°F)	0-10V 1%
2X4	4LEDHF	<b>40,613</b>	<b>305</b>	<b>133</b>	35°C (95°F)	<b>35,810</b>	<b>373.3</b>	<b>96</b>	35°C (95°F)	0-10V 1%
2X4	EM10	1240-1330	4	NA	40°C (104°F)	960-1200	4	NA	40°C (104°F)	NA

- <sup>1</sup> DELIVERED LUMEN DATA IS EXTRAPOLATED FROM MEASURED DATA @25C WITH NO EXTRA OPTIONS. VARIANCES WILL OCCUR WHEN OPTIONS ARE CHOSEN
- <sup>2</sup> WATTAGE IS MEASURED WITH 4000K SELECTION @ 120VAC AND Tambient = 25C. WATTAGES MAY VARY WITH ALTERNATE CONFIGURATIONS
- <sup>3</sup> EFFICACY CALCULATED USING 4000K CCT DATA.
- <sup>4</sup> MAX AMBIENT TEMP RATING, NON-IC INSTALLATION. TEMP RATING MAY VARY WITH SPECIFIED DRIVERS OR ANY NON STANDARD SELECTION
- <sup>5</sup> 90 MINUTE 10W EMERGENCY DRIVER; LUMENS CALCULATED BASED ON FIXTURE EFFICACY.

MEDICAL SYMMETRIC CHANNEL-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

### SYMMETRIC DISTRIBUTION



### ASYMMETRIC DISTRIBUTION

