

# MEDICO PLUS

HEALTHWERX MEDICAL TROFFER  
RECESSED  
STATIC WHITE, BIOS ST/DY, FULL SPECTRUM



Project: \_\_\_\_\_  
Type: \_\_\_\_\_

## LUMENWERX

### DESCRIPTION

Medico Plus addresses both patient and staff needs in health facilities. Multifunctional and powerful, these luminaires deliver low-glare illumination without light trespass in multi-patient room settings. Medico Plus offers Exam, Ambient, and Reading modes. The central optic is our Environmentally Protected Direct Optic (EPDO), a polycarbonate lens that is gasketed to ensure proper sealing, while side optics are available either as frosted acrylic or nano-prismatic lenses. Medico Plus is available in static white, BIOS and Full Spectrum. Consult other spec sheets for Chromawerx SOLA and DUO options.

Up to 116 lm/W performance

UP TO  
IP64



Medico Plus 2'x2' - Without Reading Function



Medico Plus 2'x2' - With Reading Function



Medico Plus 2'x4' - Without Reading Function



Medico Plus 2'x4' - With Reading Function

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## Order Guide

Troffer (Example: MEDPLUST-22-GFR-ULO-EPDO-MPRF(SW-7W-30-2-90-35)-SW-90-1500-D1-35-120-GRD-W-NA)

NON-IC RATED

LUMINAIRE ID	SIZE	SEALING	SIDE OPTIC	CENTER OPTIC	READING FUNCTION	LIGHT SOURCE <sup>5</sup>
<b>MEDPLUST</b>				<b>EPDO</b>		
<b>MEDPLUST</b> - Medico Plus Troffer	<b>22</b> - 2'x2' <b>24</b> - 2'x4'	<b>GFR</b> <sup>1</sup> - Gasketed frame, IP44 <b>GSO</b> <sup>2</sup> - Gasketed side optic, IP54 <b>PTR</b> <sup>3</sup> - Polycarbonate door with tamper-resistant screws, IP64  <sup>1</sup> IP44 rated gasketed frame construction. <sup>2</sup> IP54 rated gasketed frame construction with additional gaskets for the side optic. <sup>3</sup> IP64 and IK10 rated when specified with the polycarbonate door option.	<b>ULO</b> - Uniform Lambertian Optic <b>NPO</b> - Nano-Prismatic Optic	<b>EPDO</b> - Environmentally Protected Direct Optic	<b>MPRF()</b> <sup>4</sup> - Medico Plus Reading Function <b>NA</b> - None  <sup>4</sup> To specify, see code and example below.	<b>SW</b> - Static white <b>BIOSST</b> <sup>6</sup> - Static biologically-optimized lighting <b>BIOSDY</b> <sup>6</sup> - Dynamic biologically-optimized lighting <b>FS</b> - Full spectrum  <sup>5</sup> Chromawerx SOLA and DUO also available. Consult other spec sheets. <sup>6</sup> When specified with the reading function, the reading light is not available with BIOS.

CRI	SIDE LUMEN PACK. <sup>10, 11</sup>		CENTER LUMEN PACK. <sup>10, 11</sup>		FUNCTION CONTROL <sup>13</sup>	COLOR TEMP.
<b>80</b> <sup>7</sup> - 80 CRI <b>90</b> <sup>7, 8</sup> - 90 CRI (R9 - 50+) <b>95</b> <sup>9</sup> - 95 CRI	2'x2'	2'x4'	2'x2'	2'x4'	<b>INDEPENDENT FUNCTION CONTROL</b> <b>D1</b> <sup>14</sup> - 1% 0-10V <b>DA</b> <sup>15</sup> - DALI <b>LDE1</b> <sup>15</sup> - Lutron Hi-lume 1% Eco  <b>LOW VOLTAGE CONTROL</b> <sup>16</sup> <b>LVC2#</b> - Individual or sequential control for 2 functions <b>LVC3#</b> - Individual or sequential control for 3 functions  <sup>13</sup> PoE (Power-over-Ethernet) compatible. Consult factory for details. <sup>14</sup> Side optic + Reading dimmable, center optic ON/OFF control only. <sup>15</sup> On-site commissioning of functions is required. <sup>16</sup> Not available with BIOSDY. The number of functions specified must coincide with the number of functions specified with the low-voltage control scheme. See page 7 for more details.	<b>27</b> <sup>17</sup> - 2700K <b>30</b> - 3000K <b>35</b> - 3500K <b>40</b> - 4000K  <sup>17</sup> Not available with BIOS.
<sup>7</sup> Not available with full spectrum. <sup>8</sup> Not available with BIOS. <sup>9</sup> Available with full spectrum only.  <sup>10</sup> Lumen output reduced with BIOS, please consult factory. <sup>11</sup> Meets RP29-16 when total lumens (side + center) is at least 11 000 lm, at a mounting height of 9'. <sup>12</sup> Not available with full spectrum.	<b>1500</b> lm <b>2000</b> lm <b>2500</b> lm <sup>12</sup> <b>3000</b> lm <sup>12</sup>	<b>2500</b> lm <b>3000</b> lm <b>3500</b> lm <b>4500</b> lm <sup>12</sup> <b>6000</b> lm <sup>12</sup>	<b>2500</b> lm <b>3500</b> lm <b>4500</b> lm <sup>12</sup>	<b>5000</b> lm <b>7000</b> lm <b>9000</b> lm <sup>12</sup>		

VOLTAGE	MOUNTING	FINISH	OPTIONS
<b>120</b> - 120V <b>277</b> - 277V <b>347</b> <sup>18</sup> - 347V  <sup>18</sup> Available with D1 independent control only.	<b>GRD</b> - Grid ceiling <b>DF</b> - Drywall trim kit	<b>W</b> - Matte white <b>AL</b> - Aluminum <b>WA</b> - White antimicrobial Silverwerx <b>CF#</b> - Custom finish, specify RAL#	<b>GGK</b> - Grid gasket <b>EMB</b> <sup>19, 20, 21</sup> - Emergency battery <b>NA</b> - None  <sup>19</sup> The battery is connected to the side optic. Overall height of fixture will increase for certain configurations. <sup>20</sup> Available with independent function control options only. <sup>21</sup> Not available with 347V.

## Optional Reading Function (Example: MPRF(SW-7W-30-2-90-35))

READING LIGHT ID	LIGHT SOURCE	WATTAGE	BEAM	COLOR QUALITY	CRI	COLOR TEMP.
<b>MPRF()</b>						
<b>MPRF()</b> - Medico Plus Reading Function	<b>SW</b> - Static white  <b>SOLA</b> - Dim-to-warm single channel control 35K to 22K	<b>7W</b> - Low output 537-896 lm <b>10W</b> - Medium output 683-1103 lm <b>14W</b> - High output 883-1338 lm  <b>8W</b> - 20° only (560 lm) <b>13W</b> - 40° and up (740-900 lm)	<b>10</b> - 10° Narrow spot <b>20</b> - 20° Spot <b>30</b> - 30° Narrow Flood <b>40</b> - 40° Flood <b>50</b> - 50° Wide flood <b>60</b> - 60° Very wide flood <b>75</b> - 75° Very wide flood <b>90</b> - 90° Open flood  <b>20</b> - 20° Spot <b>40</b> - 40° Flood <b>50</b> - 50° Wide flood <b>60</b> - 60° Very wide flood <b>75</b> - 75° Very wide flood <b>90</b> - 90° Open flood	<b>2</b> <sup>22</sup> - 2-Step MacAdam Ellipse <b>3</b> <sup>23</sup> - 3-Step MacAdam Ellipse  <sup>22</sup> For beam 30° - 90°. <sup>23</sup> For beam 10° & 20°.  <b>3</b> - 3-Step MacAdam Ellipse	<b>90</b> - 90 CRI <b>80</b> - 80 CRI <b>97</b> <sup>24</sup> - 97 CRI  <sup>24</sup> Not available with 3500K, 10° and 20° beam angles.  <b>90</b> - 90 CRI	<b>27</b> - 2700K <b>30</b> - 3000K <b>35</b> - 3500K <b>40</b> - 4000K  <b>SOLA</b> - Dim-to-warm single channel control 35K to 22K

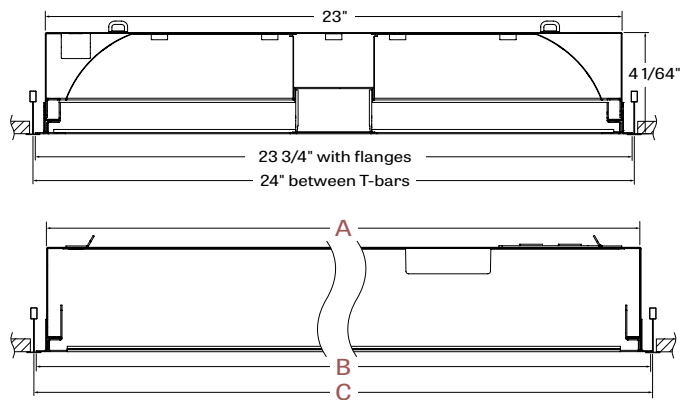
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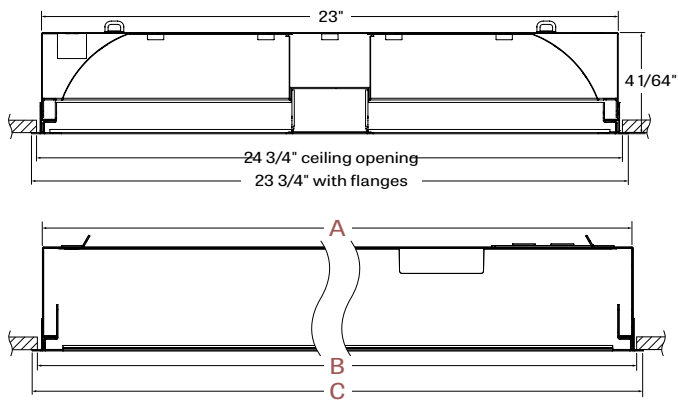
LUMENWERX

## Dimensions

### GRID CEILING



### DRYWALL CEILING



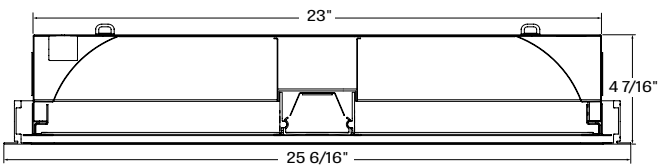
### Grid - GRD

NOMINAL LENGTH	FIXTURE LENGTH	WITH FLANGES	BETWEEN T-BARS
	A	B	C
2' X 2'	23"	23 3/4"	24"
2' X 4'	47"	47 3/4"	48"

### Drywall - DF

NOMINAL LENGTH	FIXTURE LENGTH	CEILING OPENING LENGTH	TRIM KIT LENGTH
	A	B	C
2' X 2'	23"	24 3/4"	25 3/8"
2' X 4'	47"	48 3/4"	49 3/8"

### WITH POLYCARBONATE DOOR OPTION



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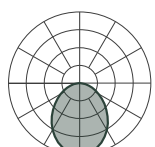
LUMENWERX

## Photometrics

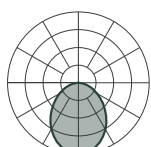


### Exam (Side + Center)

Wall switch-activated exam lighting offers direct and indirect illumination with an average illuminance of 130 fc on the bed.



ULO

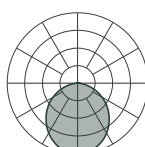


NPO



### Ambient (Side Only)

For routine monitoring, direct low-glare ambient illumination is available in a range of programmable outputs in order to deliver comfortable lighting for patients in private and shared rooms, medical staff, and visitors.

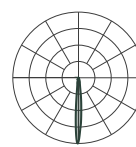


EPDO

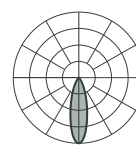


### Reading (Center Downlight)

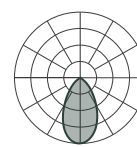
Let patients read in comfort with direct reading illumination that can be specified in a range of programmable outputs (average 40 fc vertical). Deep shielding offers an ideal UGR of 10 for optimized visual comfort.



Narrow  
Spot 10°



Narrow  
Flood 30°



Very Wide  
Flood 60°

FUNCTION	LUMEN OUTPUT <sup>1</sup>	AVG. ILLUMINANCE <sup>1</sup>	UNIFORMITY (AVG : MIN) <sup>1</sup>
Exam	15 000 lm	126 fc	1.43 : 1
Ambient	6 000 lm	50 fc	1.42 : 1
Reading	1 045 lm	54 fc	1.47 : 1

<sup>1</sup> Calculation on the bed with 2'x4' fixture, 80 CRI, 3500K.  
In a room: 9' H x 10' W x 10' D

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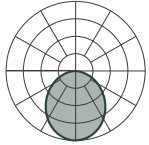
LUMENWERX

## Performance

Delivered lumens at 35K at 80 CRI in static white

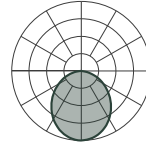
### MULTIPLIER - SEALING

Polycarbonate door, IP64 0.85



2'X2' - Exam (Side + Center)

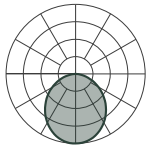
LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
1500	2500	4000	10.8	24.6	35.4	113
	3500	5000		35.8	46.6	107
	4500	6000		47.7	58.5	102
2000	2500	4500	14.6	24.6	39.2	115
	3500	5500		35.8	50.4	109
	4500	6500		47.7	62.3	104
2500	2500	5000	18.5	24.6	43.1	116
	3500	6000		35.8	54.3	110
	4500	7000		47.7	66.2	106
3000	2500	5500	22.7	24.6	47.3	116
	3500	6500		35.8	58.5	111
	4500	7500		47.7	70.4	106



2'X2' - Exam (Side + Center) with Reading Light <sup>1</sup>

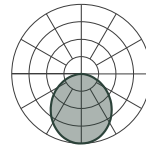
LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
1500	2500	5338	10.8	24.8	49.5	108
	3500	6338		36.1	60.8	104
	4500	7338		48.4	73.1	100
2000	2500	5838	14.6	24.8	53.3	110
	3500	6838		36.1	64.6	106
	4500	7838		48.4	76.9	102
2500	2500	6338	18.5	24.8	57.2	111
	3500	7338		36.1	68.5	107
	4500	8338		48.4	80.9	103
3000	2500	6838	22.7	24.8	61.4	111
	3500	7838		36.1	72.7	108
	4500	8838		48.4	85.0	104

<sup>1</sup> With 30° beam angle, and high 13.8W output.



2'X4' - Exam (Side + Center)

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
2500	5000	7500	17.9	49.1	67.1	112
	7000	9500		71.1	89.1	107
	9000	11500		94.7	112.7	102
3000	5000	8000	21.7	49.1	70.8	113
	7000	10000		71.1	92.8	108
	9000	12000		94.7	116.4	103
3500	5000	8500	25.4	49.1	74.5	114
	7000	10500		71.1	96.6	109
	9000	12500		94.7	120.1	104
4500	5000	9500	33.4	49.1	82.5	115
	7000	11500		71.1	104.6	110
	9000	13500		94.7	128.1	105
6000	5000	11000	45.5	49.1	94.6	116
	7000	13000		71.1	116.6	111
	9000	15000		94.7	140.2	107



2'X4' - Exam (Side + Center) with Reading Light <sup>2</sup>

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
2500	5000	8838	17.9	49.2	80.9	109
	7000	10838		71.6	103.3	105
	9000	12838		95.4	127.1	101
3000	5000	9338	21.7	49.2	84.7	110
	7000	11338		71.6	107.1	106
	9000	13338		95.4	130.9	102
3500	5000	9838	25.4	49.2	88.4	111
	7000	11838		71.6	110.8	107
	9000	13838		95.4	134.6	102
4500	5000	10838	33.4	49.2	96.4	112
	7000	12838		71.6	118.8	108
	9000	14838		95.4	142.6	104
6000	5000	12338	45.5	49.2	108.5	114
	7000	14338		71.6	130.9	110
	9000	16338		95.4	154.7	106

<sup>2</sup> With 30° beam angle, and high 13.8W output.

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# LUMENWERX

## Technical Specifications

### OPTICS

#### Uniform Efficiency Lambertian Optic (ULO)

Thermoformed from impact-modified white acrylic, the ULO provides an even light distribution with up to 88% transmission. Its unique enclosed design creates smooth illumination.

#### Nano-Prismatic Optic (NPO)

Nano-Prismatic Optic (NPO) is composed of multiple nanoprismatic refractors that bend light with great precision. The NPO's nanostructure eliminates pixelation from the LED diodes for a harmonious lens appearance. Light distribution is glare-free, concentrated, and 20% sharper than that diffused from a frosted acrylic lens.

#### Environmentally Protected Direct Optic (EPDO)

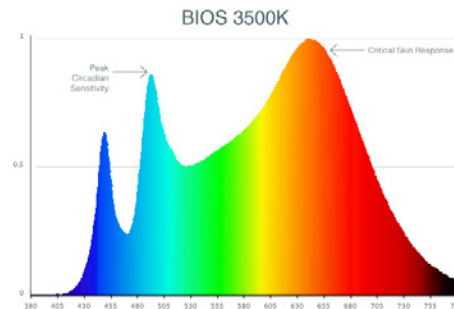
The Environmentally Protected Direct Optic creates a seal that blocks debris and moisture, and withstands UV distortion and moderate impact. This extruded snap-in lens has a gasket to ensure proper sealing. The lens is 1/16" thick and made of frosted polycarbonate. Internally, white, side kicking reflectors guide the light through the lens. The EPDO suits moderate climate environments.

### LIGHT SOURCE

In static white, custom arrays of mid-flux LED are available in 2700K, 3000K, 3500K, and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency maintained to within 3 SDCM. LEDs operated at reduced drive current to optimize efficacy and lumen maintenance. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen maintenance greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated. Optional BIOS or full spectrum LEDs can be incorporated in the fixture to increase Cyanosis Observation Index (COI) and assist in regulating circadian rhythms.



BIOS SkyBlue™ Technology is designed to provide the specific circadian stimulus to improve overall sleep quality, recovery during the night, and overall feelings of well-being. The non-visual light signals that stimulate our circadian system have peak intensity in the "sky blue" region. As the diagram below illustrates, BIOS SkyBlue technology shifts the peak LED spectral intensity (490 nm) to align better with the peak response of circadian stimulus. Also note the enhanced deep-red (near 660 nm) spectrum.



**WELL for Light** - The WELL building standard focuses on light quality in several features. There are three categories that are fully attributed to the construction and features of a luminaire. In WELL V1, it's Feature S4 Circadian Lighting, Feature S5 Glare Control, and Feature S8 Color Quality. In WELL V2, it's Feature L03 Circadian Lighting, Feature L04 Glare Control, and Feature L07 Electric Light Quality.

This fixture meets Features:

- Feature S4 or L03 when BIOS or full spectrum LED is selected
- Feature S5 or L04 meets WELL glare category (b-c-d)
- Feature S8 or L07 when 90CRI or above is selected

All LED drivers used at Lumenwerx are deemed to have a low risk level of flicker, of 5 % or less below 90Hz operational as defined by IEEE standard 1789-2015 LED.



**WELL for Mind** - This luminaire meets WELL for mind as it is a human centric luminaire offering quality light, excellent color, and smooth optics. If any of these features are incorporated in a luminaire, it can improve the ability to focus, concentrate, and persist longer on a given task. This fixture harmoniously operates in a space to assist the mind.

**For more information, please contact [well@lumenwerx.com](mailto:well@lumenwerx.com)**

### ELECTRICAL

The side optics, center optic, and reading light are powered by integral, high-efficiency, constant-current LED drivers dimmable (save for center optic) through a number of different protocols (0-10V, DALI, Lutron Ecosystem). When individual control is selected, the LED drivers powering the side and center optics must be combined for the Exam function. The Exam function is recommended for compliance with the ANSI RP-29-16 standard. Fixtures can also be specified with an integral LVC (low-voltage controller) that can be configured for multiple functions including Exam, Ambient and Reading.



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## PoE

Depending on the PoE manufacturer selected, Lumenwerx will install the node in factory as either integral to the luminaire or as a remote module. Factory programming of the PoE node may or may not enable the following functionalities: lumen package, DUO (tunable white), emergency battery backup, and sensor integration. These must be addressed and evaluated on a case-by-case basis.

## FUNCTION CONTROL

### Independent Control

On/Off control of each load - Dimming available for dimmable loads.

### Low Voltage Control

The Low Voltage Controller (LVC) option allows control of the luminaire functions from a patient pillow switch, bed side rail, or wall switch with normally open momentary dry contacts. Depending on the number of modes to be controlled, various control options are available.

		Low Voltage Control Selection		
		Reading	Exam (Side Optics & Module)	Ambient (Side Optics)
2 function LVC2	LVC21		I	SM
	LVC22		I	ST
	LVC23		I	I
	LVC24		SQ	SQ
3 function LVC3	LVC31	ST	I	ST
	LVC32	SM	I	SM
	LVC33	I	I	I
	LVC34	SQ	I	SQ
SM: Smooth dimming I: On/off control SQ: Sequential ST: Step dimming		The number of functions specified must coincide with the functions for the low voltage control scheme.		

## EMERGENCY AND BATTERY OPTIONS

### Battery

Factory installed long life, high temperature, maintenance-free Lithium-Ion battery pack with self-test functionality, test switch and charge indicator. Minimum of 90 minutes operation, up to 10W (25°C) emergency lighting output and recharge time of 24 hours.

## MOUNTING

Recessed fixtures can be mounted into exposed or concealed T-bar or tegular ceiling, as well as in drywall ceilings with trim kit.

## FINISH

Powder coated paint in matte white or aluminum. Optional antimicrobial finish, as well as custom finishes, also available.

## CONSTRUCTION

**Housing** - Die formed cold rolled sheet steel 20 gauge thick

**Reflectors** - Cold rolled steel 0.030" thick precisely die formed, 95% reflective matte white painted

**Interior brackets** - Die formed cold rolled sheet steel 20 gauge thick

**Center lens** - Extruded aluminum 0.07" nominal, matte white and lens made in clear PMMA precisely formed into optical micro-structures forms

**Side lens (ULO)** - Frosted thermoformed impact-modified acrylic

**Side lens (NPO)** - Clear prismatic acrylic

**Drywall kit** - Extruded aluminum 0.07" nominal

**Gasket** - Closed-cell silicone foam gasket

## WEIGHT

**Medico Plus 2'x2'** - 28 lbs - 12.5 kg

**Medico Plus 2'x4'** - 55 lbs - 25 kg

## CERTIFICATION

**ETL** - Rated for indoor, Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0

**NSF** - NSF2 Listed for Non-Food Zones.

## WARRANTY

Lumenwerx provides a five-year limited warranty of electrical and mechanical performance of the luminaires, including the LED boards, drivers, and auxiliary electronics. Lumenwerx will repair or replace defective luminaires or components at our discretion, provided they have been installed and operated in accordance with our specifications. Other limitations apply, please refer to the full warranty on our website.