

MEDICO PLUS

HEALTHWERX MEDICAL TROFFER
RECESSED
CHROMAWERX - SOLA AND DUO



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 Chromawerx SOLA and DUO. Consult other spec sheets for static white, BIOS, and Full Spectrum options.

Up to 123 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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LUMENWERX

Order Guide

Troffer (Example: MEDPLUST-22-GFR-ULO-EPDO-MPRF(SOLA-8W-40-3-90-SOLA)-SOLA-90-1500-SD1-120-GRD-W-NA) **NON-IC RATED**

LUMINAIRE ID	SIZE	SEALING	SIDE OPTIC	CENTER OPTIC	READING FUNCTION	LIGHT SOURCE ⁵
MEDPLUST				EPDO		
MEDPLUST - Medico Plus Troffer	22 - 2'x2' 24 - 2'x4'	GFR ¹ - Gasketed frame, IP44 GSO ² - Gasketed side optic, IP54 PTR ³ - Polycarbonate door with tamper-resistant screws, IP64 ¹ IP44 rated gasketed frame construction. ² IP54 rated gasketed frame construction with additional gaskets for the side optic. ³ IP64 and IK10 rated when specified with the polycarbonate door option.	ULO - Uniform Lambertian Optic NPO - Nano-Prismatic Optic	EPDO - Environmentally Protected Direct Optic	MPRF() ⁴ - Medico Plus Reading Function NA - None ⁴ To specify, see code and example below.	SOLA - Dim-to-warm single channel control 35K to 22K DUO - Tunable white 2-channel control 65K to 27K ⁵ Static white, BIOS and full spectrum also available. Consult other spec sheet.

CRI	SIDE LUMEN PACK.		CENTER LUMEN PACK.		FUNCTION CONTROL ⁶	VOLTAGE	MOUNTING	FINISH	OPTIONS
80 - 80 CRI 90 - 90 CRI (R9 - 50+)	2'X2'	2'X4'	2'X2'	2'X4'	<u>SOLA</u> SD1 - 1% 0-10V	120 - 120V 277 - 277V	GRD - Grid ceiling DF - Drywall trim kit	W - Matte white AL - Aluminum WA - White antimicrobial Silverwerx CF# - Custom finish, specify RAL#	GCK - Grid gasket NA - None
	1500 lm	2500 lm	2000 lm	3500 lm	<u>DUO</u>				
	2000 lm	3000 lm	2500 lm	6000 lm	DMX ⁷ - DMX, to specify see pages 9 to 14				
	2500 lm	3500 lm	3000 lm		DA ⁷ - DALI				
	3000 lm	4500 lm			DD1 - Dual 0-10V input for CCT/intensity				
		6000 lm			PSQ0 ⁷ - Lutron T-Series 1% Tunable White				
					⁶ PoE (Power-over-Ethernet) compatible. Consult factory for details. ⁷ On-site commissioning is required.				

Optional Reading Function (Example: MPRF(SOLA-8W-40-3-90-SOLA))

READING LIGHT ID	LIGHT SOURCE	WATTAGE	BEAM	COLOR QUALITY	CRI	COLOR TEMP.
MPRF()				3	90	
MPRF() - Medico Plus Reading Function	SOLA - Dim-to-warm single channel control 35K to 22K DUO - Tunable white 2-channel control 65K to 27K	SOLA 8W - 20° only (560 lm) 13W - 40° and up (740-900 lm) DUO 5W - 20° only (300 lm) 10W - 40° and up (530-640 lm)	20 - 20° Spot 40 - 40° Flood 50 - 50° Wide flood 60 - 60° Very wide flood 75 - 75° Very wide flood 90 - 90° Open flood	3 - 3-Step MacAdam Ellipse	90 - 90 CRI	SOLA - Dim-to-warm single channel control 35K to 22K DUO - Tunable white 2-channel control 65K to 27K

Accessories

Optional, order separately

DMX WALL CONTROLLER ⁸
WCW - Wall controller white WBW - Wall controller black
⁸ Available with DMX only. For more information, see pages 9 to 14, or consult factory.

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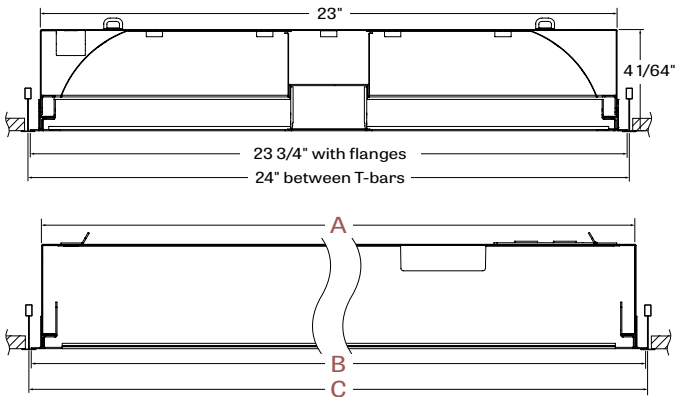
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LUMENWERX

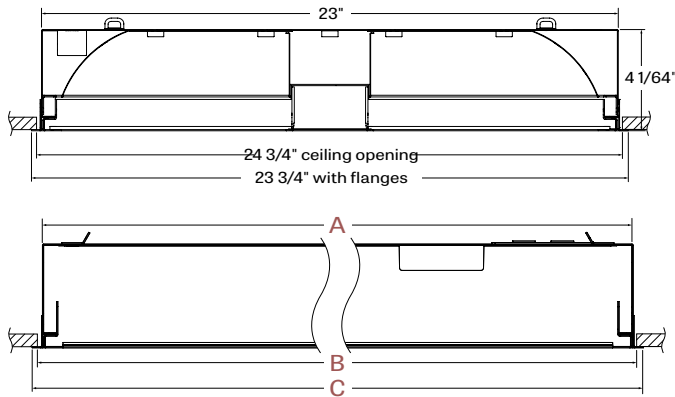


Dimensions

GRID CEILING



DRYWALL CEILING



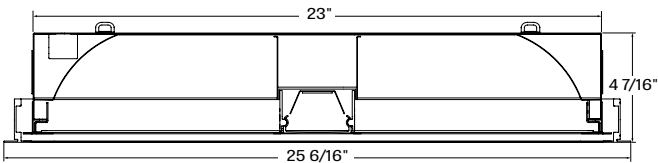
Grid - GRD

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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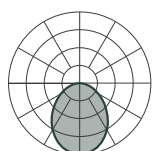
LUMENWERX

Photometrics

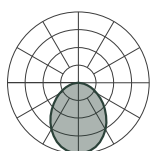


Exam (Side + Center)

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



ULO

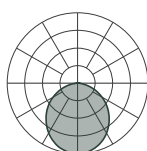


NPO



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.

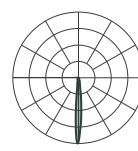


EPDO

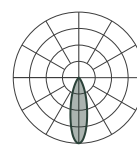


Reading (Center Downlight)

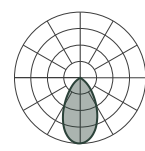
Let patients read in comfort with direct reading illumination that can be specified in a range of programmable outputs (average 40 fc vertical). Deep shielding offers an ideal UGR of 10 for optimized visual comfort.



Narrow
Spot 10°



Narrow
Flood 30°



Very Wide
Flood 60°

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LUMENWERX

Performance

SOLA

Delivered Lumens for 2'x2' Exam (Side + Center) - at 35K at 80 CRI

No Reading Light

MULTIPLIER - SEALING

Polycarbonate door, IP64 0.85

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
1500	2000	3500	10.8	20.4	31.2	112
	2500	4000		26.4	37.2	108
	3000	4500		32.8	43.6	103
2000	2000	4000	14.6	20.4	35.0	114
	2500	4500		26.4	41.0	110
	3000	5000		32.8	47.4	106
2500	2000	4000	18.5	20.4	38.9	116
	2500	4500		26.4	44.9	111
	3000	5500		32.8	51.3	107
3000	2000	5000	22.7	20.4	43.1	116
	2500	5500		26.4	49.1	112
	3000	6000		32.8	55.5	108

DUO

Delivered Lumens for 2'x2' Exam (Side + Center) - at 27K at 80 CRI

No Reading Light

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
1500	2000	3500	11.3	21.3	32.6	107
	2500	4000		27.6	38.9	103
	3000	4500		34.3	46.3	99
2000	2000	4000	15.3	21.3	36.6	109
	2500	4500		27.6	42.9	105
	3000	5000		34.3	49.6	101
2500	2000	4500	19.4	21.3	40.7	111
	2500	5000		27.6	47.0	106
	3000	5500		34.3	53.7	102
3000	2000	5000	23.7	21.3	45.1	111
	2500	5500		27.6	51.4	107
	3000	6000		34.3	58.1	103

Delivered Lumens for 2'x2' Exam (Side + Center) - at 65K at 80 CRI

No Reading Light

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
1500	2000	3500	10.5	19.7	30.2	116
	2500	4000		25.5	35.9	111
	3000	4500		31.5	42.0	107
2000	2000	4000	14.2	19.7	33.8	118
	2500	4500		25.5	39.6	114
	3000	5000		31.5	45.7	110
2500	2000	4500	17.9	19.7	37.6	120
	2500	5000		25.5	43.4	115
	3000	5500		31.5	49.4	111
3000	2000	5000	21.9	19.7	41.6	120
	2500	5500		25.5	47.4	116
	3000	6000		31.5	53.4	112

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Performance

SOLA

Delivered Lumens for 2'x4' Exam (Side + Center) - at 35K at 80 CRI

No Reading Light

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
2500	3500	6000	18.0	35.0	53.0	113
	6000	8500		65.0	82.9	103
3000	3500	6500	21.7	35.0	56.7	115
	6000	9000		65.0	86.6	104
3500	3500	7000	25.4	35.0	60.5	116
	6000	9500		65.0	90.4	105
4500	3500	8000	33.4	35.0	68.5	117
	6000	10500		65.0	98.4	107
6000	3500	9500	45.5	35.0	80.5	118
	6000	12000		65.0	110.5	109

MULTIPLIER - SEALING

Polycarbonate door, IP64 0.85

DUO

Delivered Lumens for 2'x4' Exam (Side + Center) - at 27K at 80 CRI

No Reading Light

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
2500	3500	6000	18.7	36.6	55.3	109
	6000	8500		68.1	86.8	98
3000	3500	6500	22.6	36.6	59.1	110
	6000	9000		68.1	90.7	99
3500	3500	7000	26.5	36.6	63.1	111
	6000	9500		68.1	94.6	100
4500	3500	8000	34.9	36.6	71.4	112
	6000	10500		68.1	103.0	102
6000	3500	9500	47.4	36.6	84.0	113
	6000	12000		68.1	115.6	104

Delivered Lumens for 2'x4' Exam (Side + Center) - at 65K at 80 CRI

No Reading Light

LUMEN OUTPUT		TOTAL LM	INPUT WATTS		TOTAL WATTS	LPW
SIDE	CENTER		SIDE	CENTER		
2500	3500	6000	17.4	33.7	51.1	117
	6000	8500		62.5	79.9	106
3000	3500	6500	21.0	33.7	54.7	118
	6000	9000		62.5	83.5	108
3500	3500	7000	24.6	33.7	58.3	120
	6000	9500		62.5	87.1	109
4500	3500	8000	32.3	33.7	66.1	121
	6000	10500		62.5	94.8	111
6000	3500	9500	43.8	33.7	77.6	123
	6000	12000		62.5	106.3	113

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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

Custom array of alternating color temperature mid-flux LEDs are mounted directly to the housing for optimal thermal performance. For the Duo products, a color temperature range from 6500K-2700K is achievable with color points on or below the black body curve. For the Sola products, a color temperature range from 3500K-2200K is controlled synchronously with intensity. In both cases both 80 and 90 CRI are available. Color consistency between fixtures is maintained to within 3 SDCM. LEDs are 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.

CHROMAWERX - TUNABLE WHITE

Chromawerx SOLA

Chromawerx SOLA is single-channel control that dims output while warming the color temperature in a pre-determined relationship from 3500K at full output to 2200K at full dim. A simple analog control adjusts a specially populated LED array to emulate the effect of dimming a filament source.

Chromawerx DUO

Commonly called "tunable white", Chromawerx DUO offers a two-channel control system which uses analog (0-10V) or digital (DMX/DALI/PSQ0) dimming protocols for control of luminaire CCT and intensity via the use of specially populated warm-white (2700K) and cool-white (6500K) LED arrays. The range of color DUO offers is useful for helping to entrain circadian rhythms, stimulate alertness for improved educational and work productivity, and compensate for jet lag, among other applications. The Chromawerx drivers are programmed to limit maximum light output and power usage across all color temperatures.



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 54 Circadian Lighting, Feature 55 Glare Control, and Feature 58 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 54 or L03 when DUO is selected
- Feature 55 or L04 meets WELL glare category (b-c-d)
- Feature 58 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

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LUMENWERX



FUNCTION CONTROL

SOLA

SDI

Factory-set, adjustable output current LED driver with universal (120-277VAC) input. Using a single 0-10V control signal, the light output warms in color temperature as it dims down to 1% and 2200K. At maximum driver load, efficiency<86%, PF>0.9, THD<20%.

DUO

DMX

Factory-set adjustable output current electronic driver with 120-277V AC line input. Using DMX wall controls (optionally supplied by Lumenwerx) or an existing DMX control system, both channels of LEDs are independently adjustable. Each DMX driver can be independently addressed using the built-in RDM (Remote Device Management) in the field. Dimming down to 1% is attainable. Rated life (90% survivorship) of 50,000 hours at 50°C maximum ambient temperature. At maximum driver load, efficiency<84%, PF>0.9, THD<20%.

DALI

Factory-set adjustable output current electronic driver with 120-277V AC line input. Using an existing DALI control system (supplied by others), one control channel adjusts the fixture color temperature, and the other control channel adjusts fixture brightness. Dimming down to 1% is attainable. Rated life (90% survivorship) of 50,000 hours at 50°C maximum ambient temperature. At maximum driver load, efficiency<84%, PF>0.9, THD<20%.

DDI

Factory-set adjustable output current LED driver with universal (120-277VAC) input. Controlled via two individual 0-10V signals, one for setting light output down to a minimum of 1% and the other for adjusting the CCT (default range of 2700K-6500K). Rated life of 50,000 hours at 70°C maximum driver case temperature and 100% load conditions. Typical efficiency of 86%, PF>0.9, THD<20% at 100% load conditions.

PSQO

Lutron T-Series 2-Channel tunable white drivers enable high-performance human centric lighting (HCL) applications. Digital control of color temperature (CCT) and intensity are achieved when used with the ESN T-Series tunable white controller as a part of a Lutron Quantum System.

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.

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.

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DUO DMX SPECIFICATION

A qualified DMX integrator is required to assure proper installation and commissioning of the DMX network. **When placing the PO, please provide the contact information of your DMX integrator.**

Please answer the following questions to help us identify your DMX network requirements.

YES

Do you require a wall controller provided by Lumenwerx?

NO

DMX controller supplied by Lumenwerx

DMX control system supplied by others. Lumenwerx will supply DMX-enabled fixtures with default DMX addressing. See following pages for technical DMX informations. ✓

How many zones do you have?

A zone consists of one or more luminaires behaving identically.



1 Zone



2 Zones

How to calculate the required number of drivers:

per 4' fixture	per 4' fixture
Driver 1x driver Direct only	Driver Driver 2x driver Direct high output

To Calculate
of drivers

1 - 4 Zones

5 or more Zones

Do you have more than 32 drivers in total?

NO

YES

Order a standard Lumenwerx wall controller.

WALL CONTROLLER

WCW - wall controller white
WCB - wall controller black

Add the control code at the end of your order code.

Please provide a fixture layout or RCP (Reflected Ceiling Plan) showing the locations of the DMX fixtures, zones and the DMX wall controller.

Refer to your DMX integrator for the installation. ✓

Subject to factory evaluation. Please contact our controls specialist at controls@lumenwerx.com. Additional cost and equipment will be required. ✓

Subject to factory evaluation and approval. Please contact our controls specialist at controls@lumenwerx.com. Additional cost and equipment will be required. ✓

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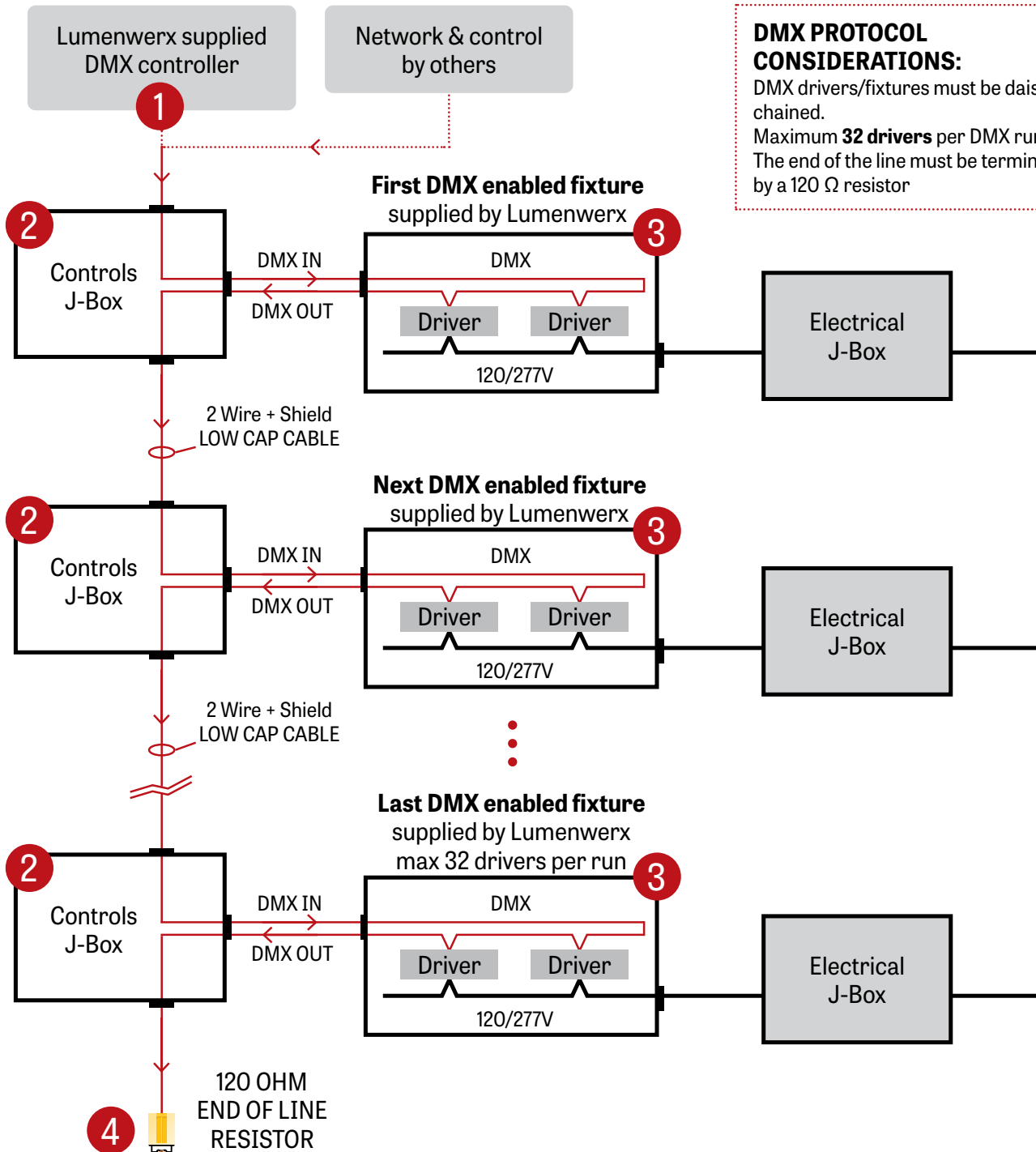
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GENERIC DMX NETWORK ARCHITECTURE



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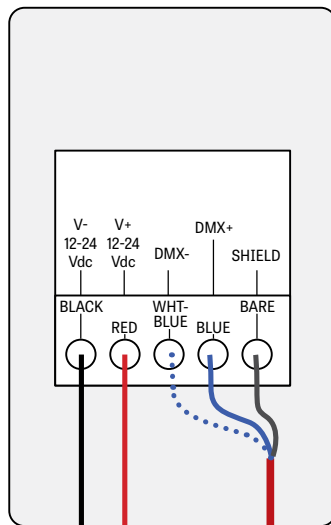
1 LUMENWERX SUPPLIED DMX CONTROLLER

To the first fixture

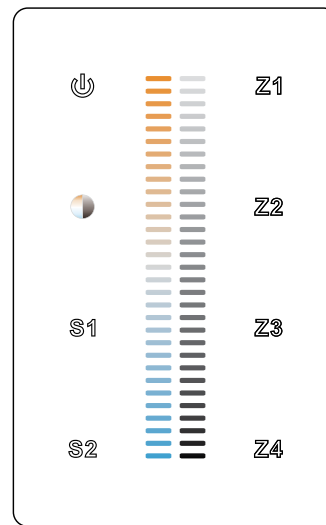
2 Wire +
Shield Low Cap Cable

WALL BOX SUPPLIED BY OTHERS

Back Panel



Front Panel



I.E.: Cerco Cable 7539-10
Belden 9841
Belden 8241

Power Supply
120-277VAC / 24VDC

DC out

N

L

BLUE

BROWN

Neutral

DC in

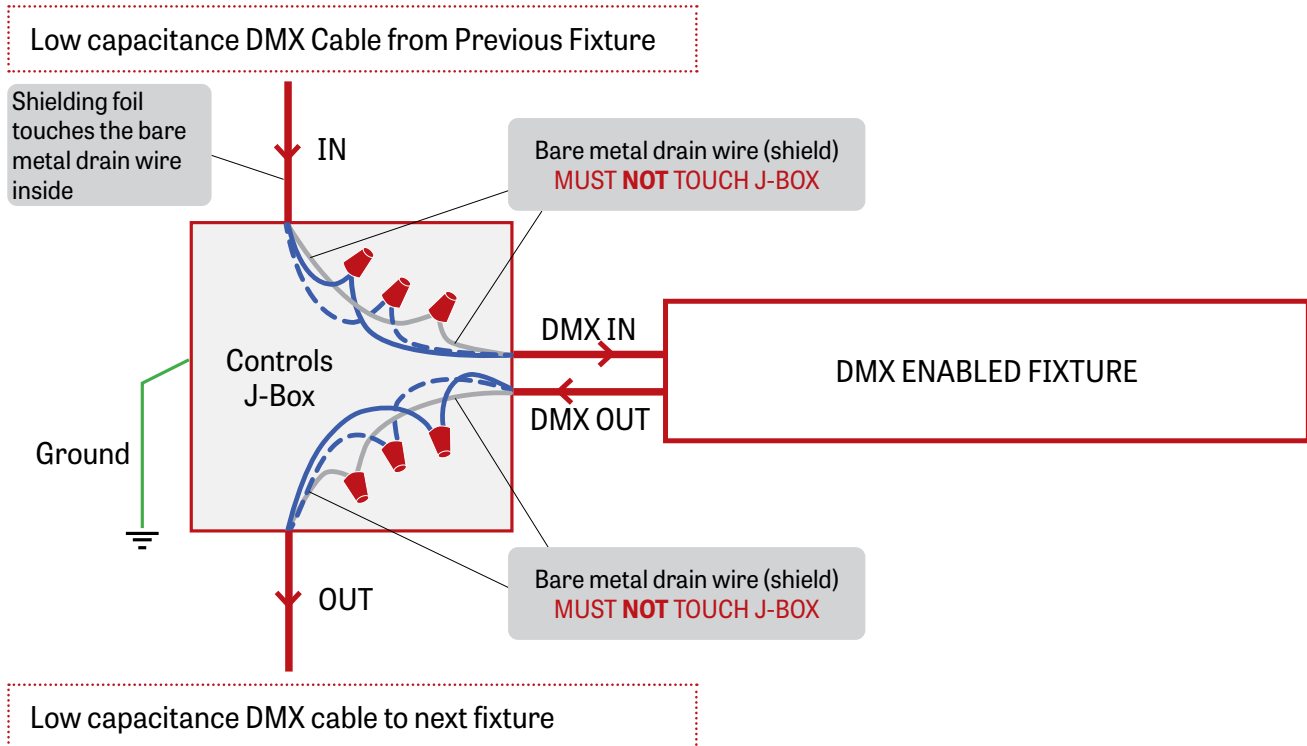
Line

Ground

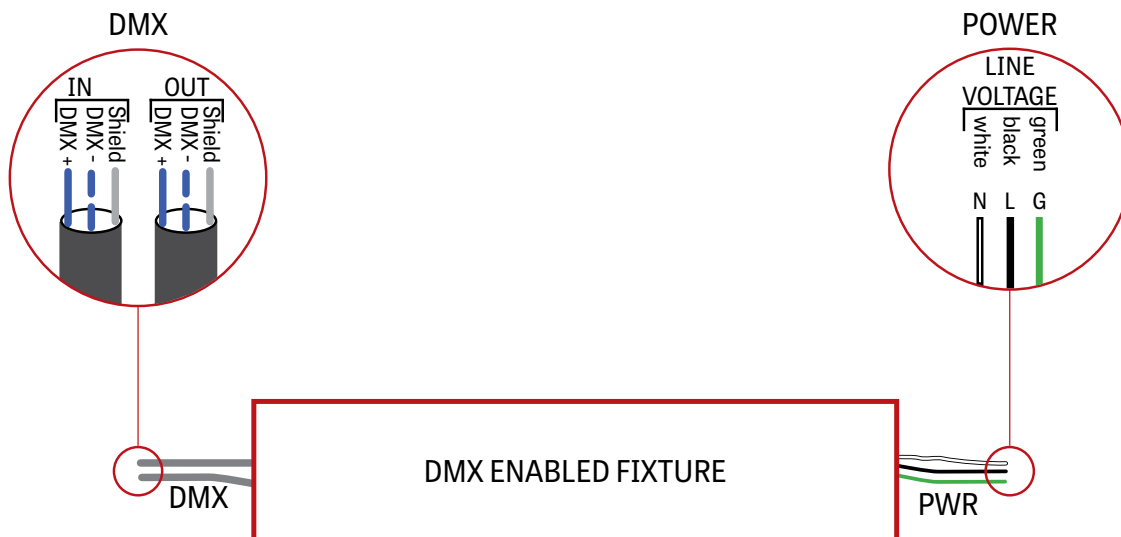
Electrical
J-Box



2 J-BOX DMX DAISY CHAIN DETAIL



3 DMX CONNECTION RECESSED & SURFACE

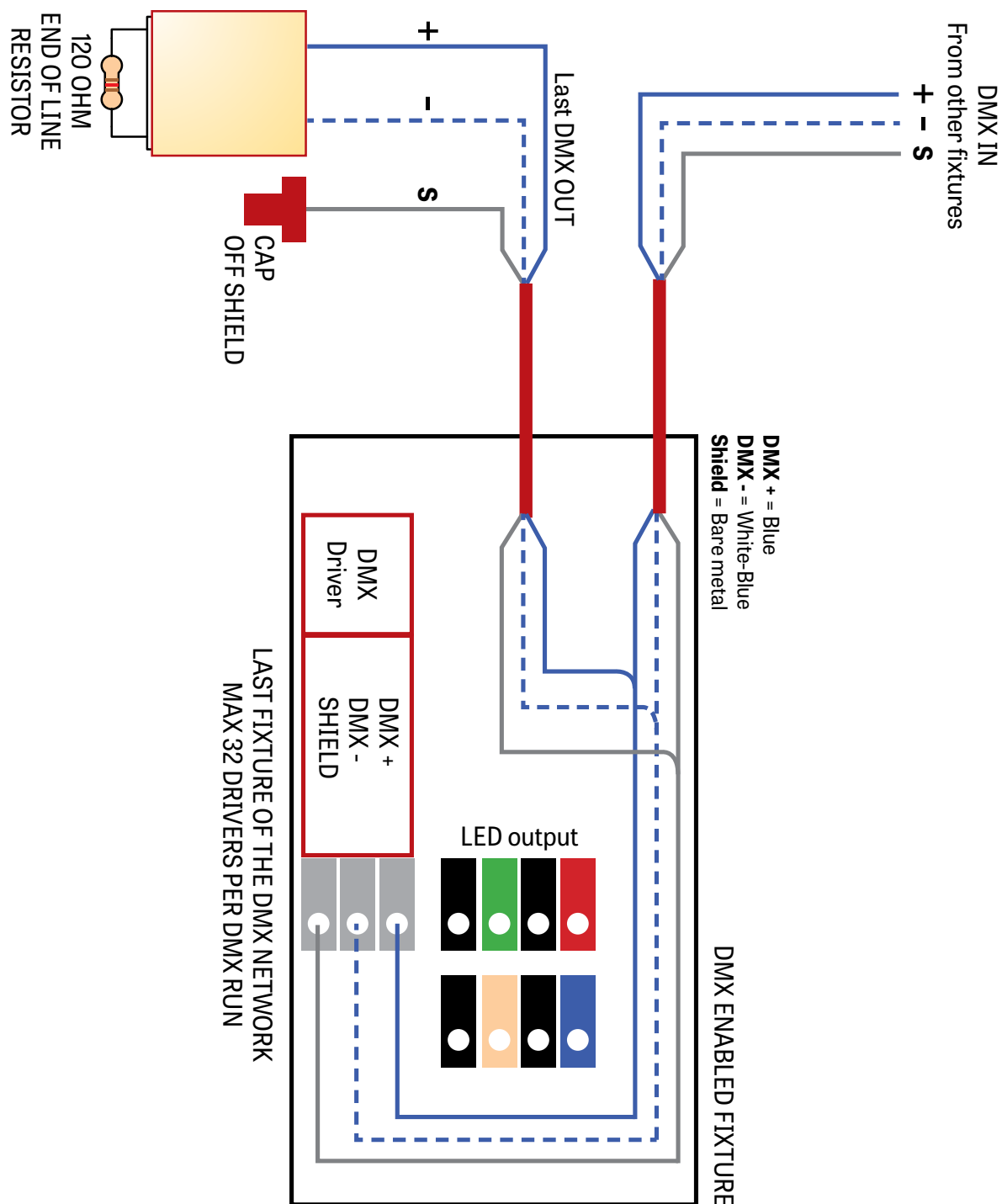


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4 DMX LAST FIXTURE DETAIL



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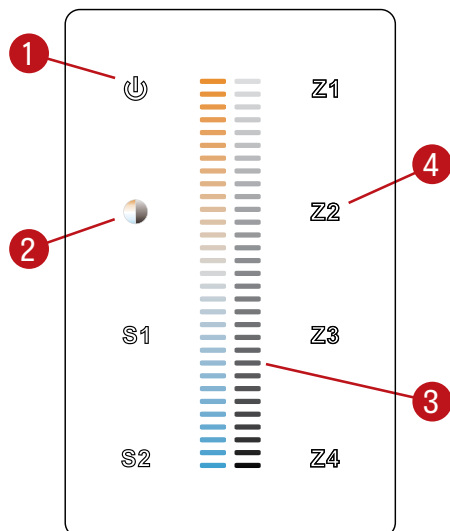
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LUMENWERX



DMX WALL CONTROLLER

DUO 1-4 ZONE



(1) Power:

Use this button to turn ON or OFF the fixture.

(2) Brightness/CCT:

Use the color/brightness toggle button to choose between color/brightness. When Blue: brightness is selected, when Yellow: color is selected.

(3) Slider:

Depending on the mode chosen in step 2, the slider will allow the user to set desired color or brightness.

(4) Zone select:

Up to 4 zones can be selected either independently or together. Once selected, the commands will be sent to the zone identified by a Blue LED.

Default DMX Addresses:

1 Warm

2 Cool