MEDICO

HEALTHWERX MEDICAL TROFFER
RECESSED
CHROMAWERX - SOLA AND DUO

LUMENWERX

5 YEAR WARRANTY — 5

DESCRIPTION

Medico addresses both patient and staff needs in health facilities. Designed as a stand-alone luminaire or to complement Medico Plus fixtures for a consistent look throughout one entire healthcare space, Medico offers the same low-glare illumination as Medico Plus in Ambient mode. The central channel can be blank, or offered with parabolic louvers, a downlight, or mini spots. Medico is available in Chromawerx SOLA and DUO. Consult other spec sheets for static white, BIOS, and Full Spectrum options.
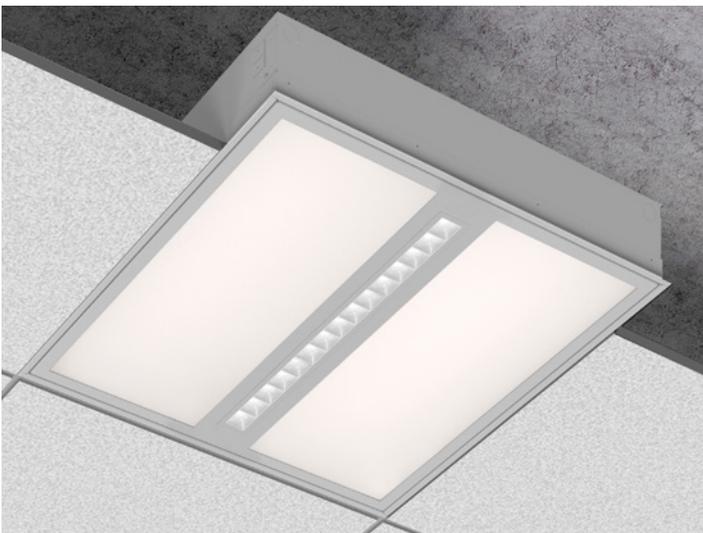
Up to 139 lm/W performance

UP TO IP64

Medico 2'x2'

Medico 2'x4'

MODULES

Parabolic Louver

Downlight

3737 Cote Vertu St-Laurent, Quebec, Canada H4R 2C9
T (514) 225-4304 F (514) 931 -4862
www.lumenwerx.com

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MEDICO-TW-SPEC-REV3   October 21, 2021

PoE Power over Ethernet

WELL

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Project: _____

_____

Type: _____

Order Guide   (Example: MEDT-22-GFR-ULO-SOLA-90-1500-PAR(SOLA-711-SPL)-SD1-120-GRD-W-NA)

NON-IC RATED

LUMINAIRE ID	SIZE	SEALING		SIDE OPTIC	LIGHT SOURCE [4]	CRI
MEDT						
MEDT - Medico 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	**SOLA** - Dim-to-warm single channel control 35K to 22K **DUO** - Tunable white 2-channel control 65K to 27K [4] Static white, BIOS and full spectrum also available. Consult other spec sheet.	**80** - 80 CRI **90** - 90 CRI (R9 - 50+)

SIDE LUMEN PACKAGE		MODULE	FUNCTION CONTROL [7]	VOLTAGE	MOUNTING	FINISH	OPTIONS
2'X2' **1500** lm **2500** lm **3500** lm **4500** lm **5500** lm	**2'X4'** **3000** lm **4000** lm **5000** lm **7500** lm **9000** lm **11 000** lm	**BLA** - Blank MODULES [5] **PAR()** [6] - Parabolic louver **COB()** - Downlight, 1x downlight [5] To specify, see code and examples below. [6] 1x 15-cell for 2'x2' and 2x 15-cell for 2'x4'.	SOLA **SD1** - 1% 0-10V DUO **DMX** [8] - DMX, to specify see pages 9 to 14 **DA** [8] - DALI **DD1** - Dual 0-10V input for CCT/intensity **PSQ0** [8] - Lutron T-Series 1% Tunable White [7] PoE (Power-over-Ethernet) compatible. Consult factory for details. [8] On-site commissioning is required.	**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#	**GGK** - Grid gasket **NA** - None

Parabolic Louver Module   (Example: PAR(SOLA-711-SPL))

PARABOLIC LOUVER	PARABOLIC LOUVER LIGHT SOURCE	PARABOLIC LOUVER LUMEN PACK.		PARABOLIC LOUVER FINISH
PAR()				
PAR() [9] - Parabolic louver [9] 1x 15-cell for 2'x2' and 2x 15-cell for 2'x4'.	**SOLA** - Dim-to-warm single channel control 35K to 22K **DUO** - Tunable white 2-channel control 65K to 27K	**2'X2'** **711** - 711 lm **1778** - 1778 lm **2844** - 2844 lm	**2'X4'** **1422** - 1422 lm **3556** - 3556 lm **5688** - 5688 lm	**SPL** - Specular aluminum louver **MPL** - Matte aluminum louver **WPL** - Matte white louver **BPL** - Matte black louver

Downlight Module   (Example: COB(SOLA-8W-40-3-90-SOLA-SDL))

DOWNLIGHT	DL. LIGHT SOURCE	DOWNLIGHT WATTAGE	DOWNLIGHT BEAM	DL. CLR. QUALITY	DL. CRI	DL. COLOR TEMP.	DL. LENS
COB()				**3**	**90**		
COB() - Downlight	**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	**SDL** - Soft diffused lens **FDL** - Frosted diffused lens

Accessories
Optional, order separately

DMX WALL CONTROLLER [10]
WCW - Wall controller white **WBW** - Wall controller black [10] Available with DMX only. For more information, see pages 9 to 14, or consult factory.

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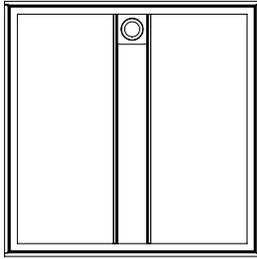## HEALTHWERX MEDICAL TROFFER
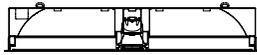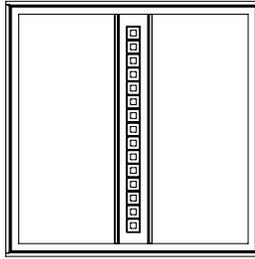RECESSED
CHROMAWERX - SOLA AND DUO

LUMENWERX

Section Views
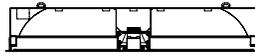
MODULES

2'x2'
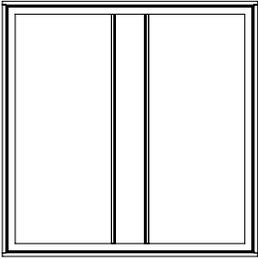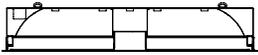
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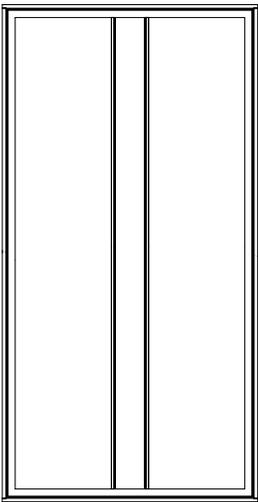Downlight

Parabolic Louver

2'x4'

Blank
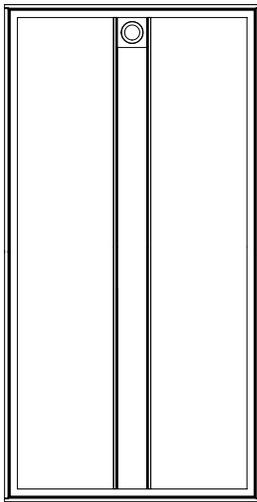
Downlight
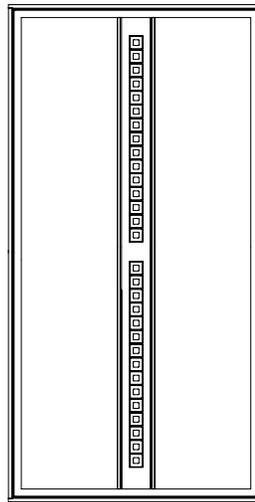
Parabolic Louver

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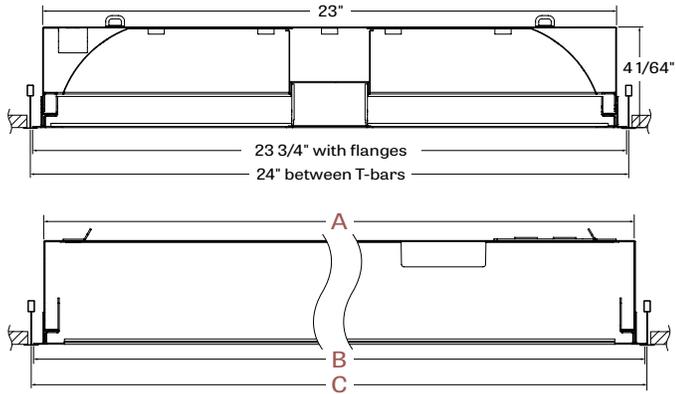
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Dimensions

GRID CEILING

DRYWALL CEILING
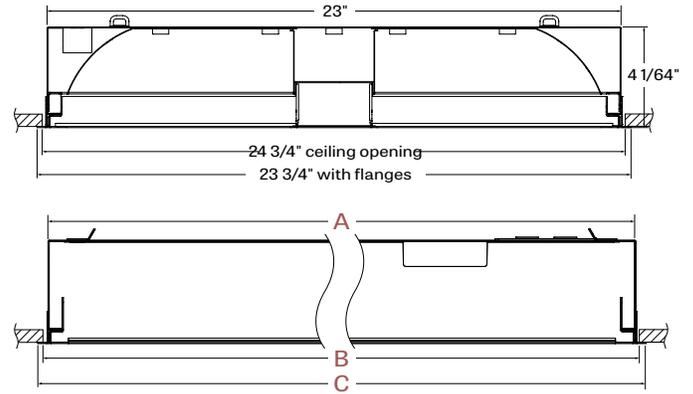
Grid - GRD

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
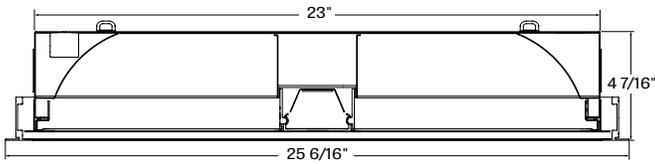
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Photometrics

FIXTURE PERFORMANCE - SOLA
Delivered lumens at 35K at 80 CRI with SOLA

2'X2' - ULO/NPO

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
1500		10.8	139
2500		18.5	135
3500	3500	26.8	131
4500		35.3	128
5500		44.6	123

2'X4' - ULO/NPO

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
3000		21.7	138
4000		29.3	137
5000	3500	37.4	134
7500		57.8	130
9000		70.6	128
11000		89.1	123

FIXTURE PERFORMANCE - DUO
Delivered lumens at 27K to 65K at 80 CRI with DUO

2'X2' - ULO/NPO

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
1500	2700	11.3	133
	6500	10.5	143
2500	2700	19.4	129
	6500	17.9	140
3500	2700	28.1	125
	6500	25.9	135
4500	2700	37.0	122
	6500	34.1	132
5500	2700	46.5	118
	6500	42.9	128

2'X4' - ULO/NPO

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
3000	2700	22.6	133
	6500	21.0	143
4000	2700	30.6	131
	6500	28.3	141
5000	2700	39.0	128
	6500	36.0	139
7500	2700	60.6	124
	6500	55.9	134
9000	2700	73.9	122
	6500	68.2	132
11000	2700	93.1	118
	6500	85.8	128

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LUMENWERX

Photometrics

MODULE PERFORMANCE - SOLA
Delivered lumens at 35K at 80 CRI for all modules with SOLA

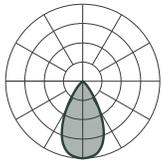| MULTIPLIER - SEALING	
Polycarbonate door, IP64	0.85

PARABOLIC LOUVER

Specular
Aluminum Louver

2'X2' - 1X15 CELL

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
711		7.9	90
1778	3500	22.1	81
2844		39.1	73

MULTIPLIER - OPTIC			
SPL	MPL	BPL	WPL
1	0.853	0.606	0.996

2'X4' - 2X15 CELL

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
1422		15.8	90
3556	3500	44.2	81
5688		78.1	73
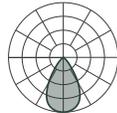
Matte
Aluminum
Louver
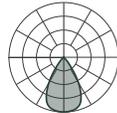
Matte Black
Louver
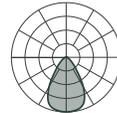
Matte White
Louver

MODULE PERFORMANCE - DUO
Delivered lumens at 27K to 65K at 80 CRI for all modules with DUO

PARABOLIC LOUVER
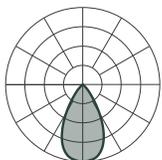
Specular
Aluminum Louver

2'X2' - 1X15 CELL

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
711	2700	8.2	86
	6500	7.7	92
1778	2700	23.0	77
	6500	21.4	83
2844	2700	40.9	70
	6500	37.8	75

MULTIPLIER - OPTIC			
SPL	MPL	BPL	WPL
1	0.853	0.606	0.996

2'X4' - 2X15 CELL

LUMEN OUTPUT	CCT	INPUT WATTS	LPW
1422	2700	16.5	86
	6500	15.4	92
3556	2700	46.1	77
	6500	42.8	83
5688	2700	81.7	70
	6500	75.6	75

Matte
Aluminum
Louver

Matte Black
Louver

Matte White
Louver

PoE WELL WELL NSF

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LUMENWERX
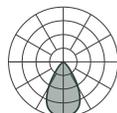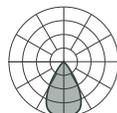
Technical Specifications

OPTICS
Uniform Efficiency Lambertian Optic (ULO)
Thermoformed 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.

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 LED 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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FUNCTION CONTROL

SOLA

SD1
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%.

DD1
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.

PSQ0
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
Side lens (ULO) - Frosted thermoformed impact-modifed acrylic
Side lens (NPO) - Clear prismatic acrylic
Drywall kit - Extruded aluminum 0.07" nominal
Gasket - Closed-cell silicone foam gasket

WEIGHT
Medico 2'x2' - 28 lbs - 12.5 kg
Medico 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 <u>contact information of your DMX integrator.</u>**

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

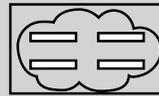**YES** .... **Do you require a wall controller provided by Lumenwerx?** .... **NO** → DMX control system supplied by others. Lumenwerx will supply DMX-enabled fixtures with default DMX addressing.
See following pages for technical DMX informations. ✓

DMX controller supplied by Lumenwerx

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	Driver Driver
1x driver	2x driver
Direct only	Direct high output
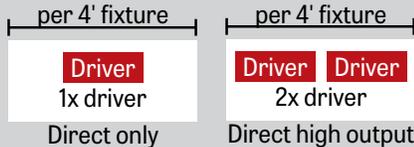
To Calculate # of drivers ←

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 ans approval. Please contact our controls specialist at controls@lumenwerx.com
Additional cost and equipment will be required. ✓

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GENERIC DMX NETWORK ARCHITECTURE
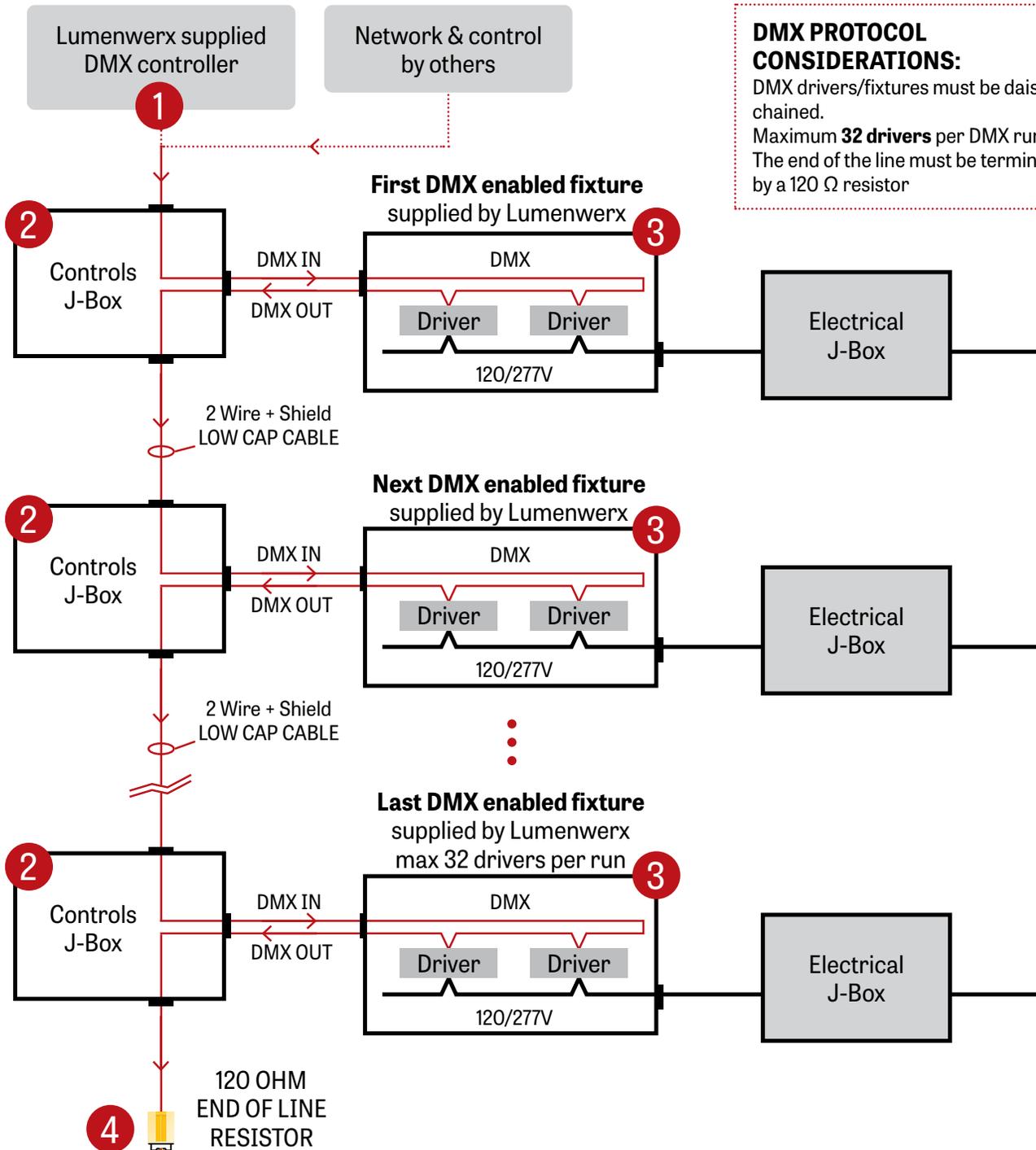
DMX PROTOCOL CONSIDERATIONS:
DMX drivers/fixtures must be daisy chained.
Maximum **32 drivers** per DMX run.
The end of the line must be terminated by a 120 Ω resistor

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1   LUMENWERX SUPPLIED DMX CONTROLLER

To the first fixture

WALL BOX SUPPLIED BY OTHERS

2 Wire +
Shield Low Cap Cable

Back Panel

V- 12-24 Vdc	V+ 12-24 Vdc	DMX-	DMX+	SHIELD
BLACK	RED	WHT-BLUE	BLUE	BARE

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

Front Panel

⏻   Z1

    Z2

S1   Z3

S2   Z4

Controller image may differ

Power Supply
120-277VAC / 24VDC

N — BLUE — Neutral

L — BROWN — Line

DC out

DC in

Ground

Electrical
J-Box

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RECESSED
CHROMAWERX - SOLA AND DUO

LUMENWERX

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2 J-BOX DMX DAISY CHAIN DETAIL

Low capacitance DMX Cable from Previous Fixture

Shielding foil touches the bare metal drain wire inside

IN

Bare metal drain wire (shield)
MUST **NOT** TOUCH J-BOX

Controls J-Box

DMX IN

DMX ENABLED FIXTURE

DMX OUT

Ground

OUT

Bare metal drain wire (shield)
MUST **NOT** TOUCH J-BOX
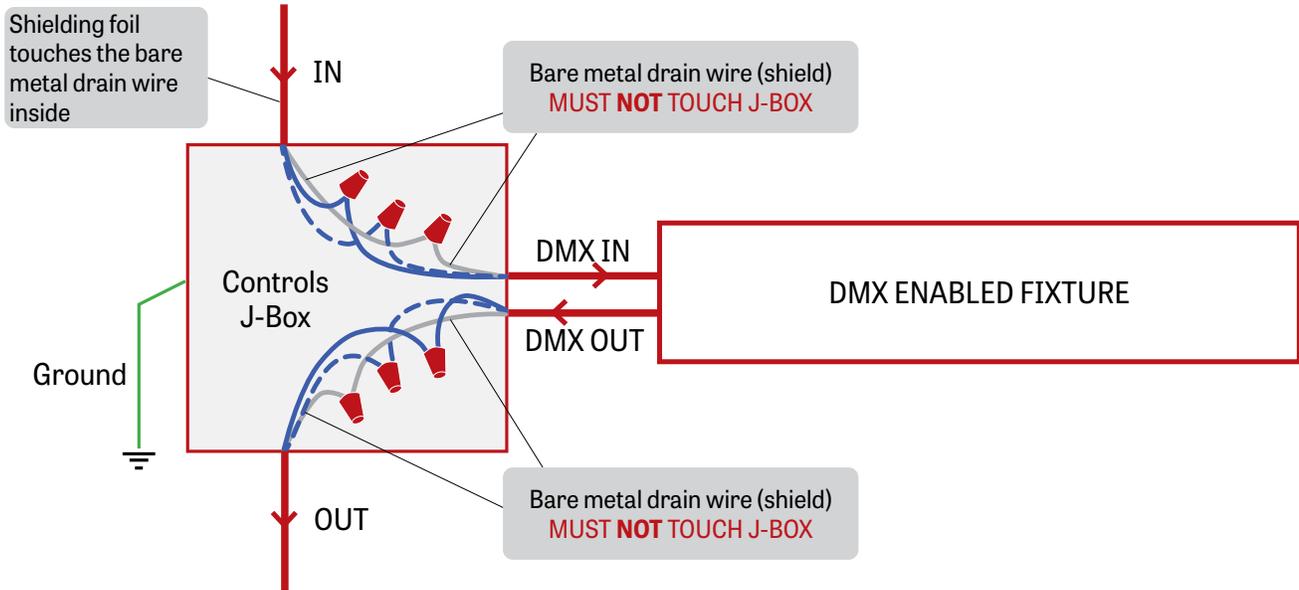
Low capacitance DMX cable to next fixture

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3 DMX CONNECTION RECESSED & SURFACE

DMX

IN   OUT

Shield DMX - DMX +   Shield DMX - DMX +

POWER

LINE VOLTAGE

white black green

N   L   G

DMX ENABLED FIXTURE

DMX   PWR

ETL LISTED
c US
Intertek

PoE
Power over Ethernet

WELL   WELL   NSF

MEDICO

HEALTHWERX MEDICAL TROFFER
RECESSED
CHROMAWERX - SOLA AND DUO

LUMENWERX
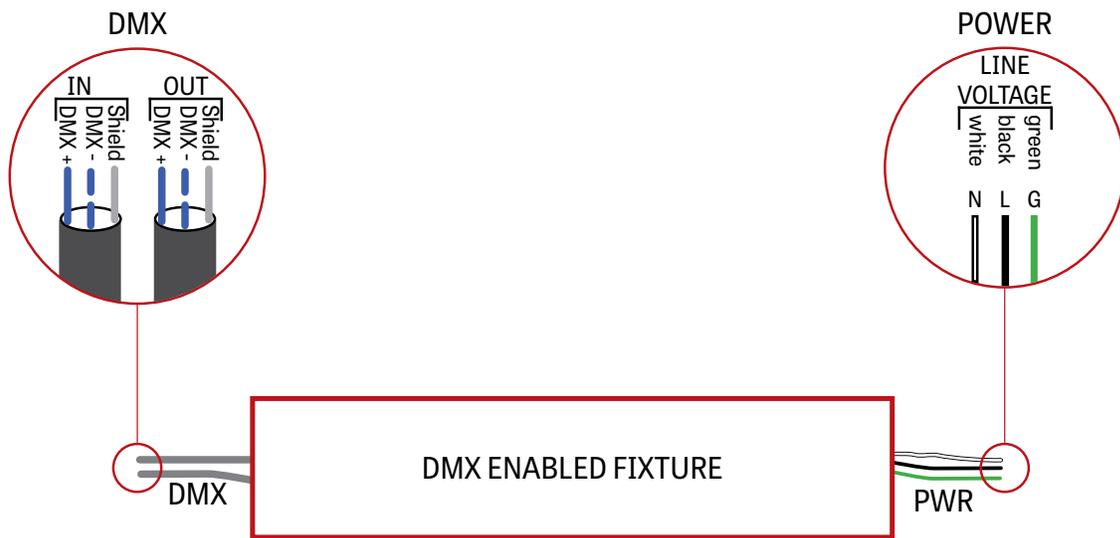
4 DMX LAST FIXTURE DETAIL

120 OHM
END OF LINE
RESISTOR

Last DMX OUT

+
−
S

CAP
OFF SHIELD

DMX IN
From other fixtures

+
−
S

DMX + = Blue
DMX − = White-Blue
Shield = Bare metal

DMX
Driver

DMX +
DMX −
SHIELD

LAST FIXTURE OF THE DMX NETWORK
MAX 32 DRIVERS PER DMX RUN

LED output

DMX ENABLED FIXTURE

c ETL us
LISTED
Intertek

PoE
Power over Ethernet

WELL   WELL   NSF

MEDICO

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RECESSED
CHROMAWERX - SOLA AND DUO

LUMENWERX

DMX WALL CONTROLLER

DUO 1-4 ZONE

Default DMX Addresses:
1 Warm
2 Cool
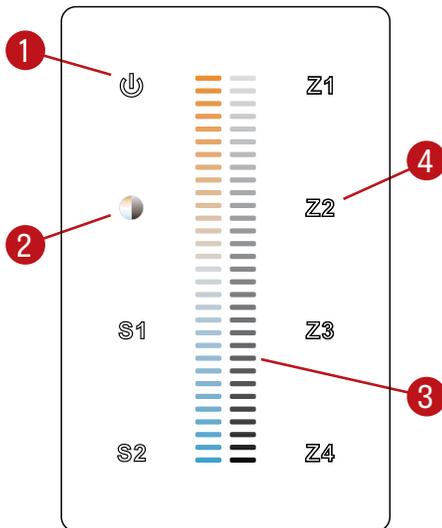
(1) Power: Use this button to turn ON or OFF the fixture.

(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.

WELL   **WELL**