CAVA-T 2x2 LED

RECESSED

Lumenwerx

CHROMAWERX TUNABLE WHITE AND DIM TO WARM

IMPORTANT: a qualified DMX integration consultant is required to ensure proper installation and function of any DMX network

Grid ceiling

Drywall ceiling

DESCRIPTION

Cava-T provides a pleasant canopy of gentle luminescence that brightens everyday work spaces as well as special areas. Cava-T is available in 1x4 and 2x2 modules for a variety of ceiling conditions.

Cava-T is an ideal vehicle for ChromaWerx white tuning in education, office, and healthcare applications where modular recessed luminaires are used.

PROJECT: _____

TYPE: _____

NOTES: _____

up to 118 lm/w performance

IC RATED

ORDER GUIDE

CATR	22	RLO	LED			
LUMINAIRE ID	**SIZE**	**OPTICS**	**LIGHT SOURCE**	**CRI**	**LUMEN PACKAGES**	**CHROMAWERX**
CATR - Cava-T recessed	**22** - 2'x2'	**RLO** - Reduced Luminance Optic	**LED** - high performance LED	**80** - 80CRI **90** - 90CRI	**2500** - min. low output 2500lm **3500** - medium output 3500lm **####** - other required lm/ft	**DUO** - tunable white 2 channel control 27k to 65k **SOLA** - dim to warm single channel control 22k to 35k

			1		W	
VOLTAGE	**DRIVER**		**ELECTRICAL**	**MOUNTING**	**FINISH**	**OPTIONS**
120 - 120V **277** - 277V	SOLA **SD1** - Single 0-10V input	DUO **DMX** [1,2] - DMX **DDA** [2] - DALI DT6 **DDA8** [2] - DALI DT8 **DD1** - Dual 0-10V input for CCT/intensity **LD2** [2] - Lutron DALI-2 digital	**1** - 1 circuit	**TG9** - tegular 9/16" **TG15** - tegular 15/16" **TB9** - t-bar 9/16" **TB15** - t-bar 15/16" **ST** - screw slot t-bar **DF** - drywall kit	**W** - matte white	**FU120** - Fuse 120V **FU277** - Fuse 277V **FWC** - flexible whip cable (6' std) **CP** - Chicago Plenum

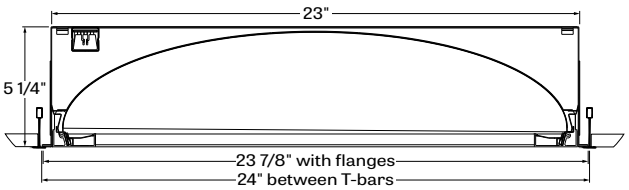
[1] For more information, see pages 5 to 10.
[2] On-site commissioning is required.

DMX WALL CONTROLS

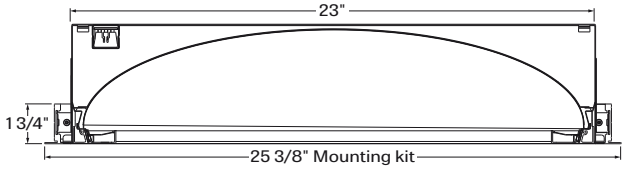
To specify see pages 5 to 10

See page 2 for ordering code detailed information

CROSS SECTION



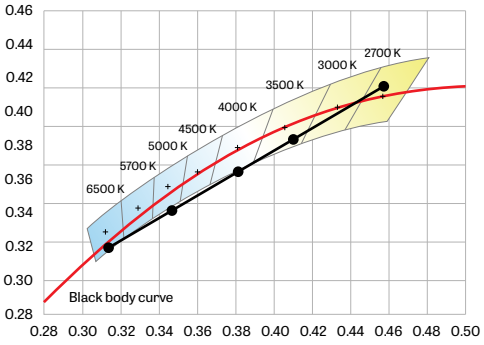
CATR - Cava-T t-bar 9/16



CATR - Cava-T drywall kit

CHROMAWERX

ANSI C78.377-2015



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OPTICS

REDUCED LUMINANCE OPTIC (RLO) - Reduced Luminance Optic (RLO) consists of indirect-mounted LED arrays illuminating a vaulted reflector with a matte white finish greater than 95% reflectivity. The ultra-shallow arrays in RLO completely conceal the light source while evenly distributing brightness over the entire surface of the cavity using a combination of multiple reflective bounces and a very high diffuse reflectivity. Compared to diffusing optics, RLO reduces luminaire brightness due to the visible interior surface being larger than the aperture.

LIGHT SOURCE - LED

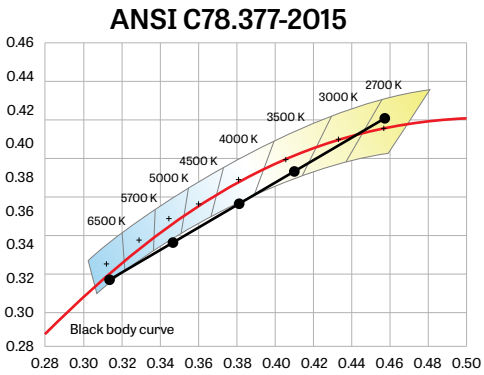
LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	21	2500	118
medium output	4000K	30.5	3500	114

Lumen Adjustment Factors	
2700K	0.917
3000K	0.959
3500K	0.988
4000K	1.000
6500K	1.053

Custom array of alternating color temperature mid-flux LED's are mounted directly to the housing for optimal thermal performance. For the Duo products, a color temperature range from 2700K-6500K is achievable with color points on or below the black body curve. For the Sola products, a color temperature range from 2200K-3500K is controlled synchronously with intensity. Color consistency between fixtures is maintained to within 3SDCM. LEDs are operated at reduced drive current to optimize efficacy and lumen maintenance.

All LED's 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 is single-channel control that dims output while warming the color temperature in a pre-determined relationship. A simple digital or analog control sends a common signal to dual output digital drivers, which are programmed to adjust a specially populated LED array to emulate the effect of dimming a filament source. Dimming range is programmable but the default option runs from 3500K at 100% of full power to 2200K at 5% of full power. CRI is maintained above 80 throughout the dimming range.

ChromaWerx Duo is two-channel control. It uses an analog (0-10V) protocol for separate control of luminaire CCT and intensity or a digital (DMX, DALI) protocol for synchronous control of both warm and cool LED arrays to enable the user to set color temperature and light output. Commonly called "tunable white", ChromaWerx two-channel control provides the range of warm (2700K) to cool (6500K) color that can be 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. CRI is maintained above 80.

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ELECTRICAL

SOLA

SD1

Factory-set, adjustable output current LED driver with universal (120-277 VAC) 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 120-277 VAC 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 120-277 VAC 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. With DALI Type 6, two DALI addresses are required to control both channels. With DALI Type 8, one DALI address is required to control both channels. 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

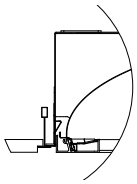
Factory-set adjustable output current LED driver with universal (120-277 VAC) input. Controlled via two individual 0-10V signals, one for setting light output down to a minimum of 1% and the other for adjusting the CCT (default range of 6500K-2700K). Rated life of 50,000 hours at 70°C maximum driver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

LD2

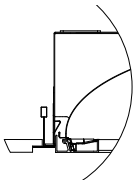
Lutron DALI-2 digital drivers provide a high-performance tunable white solution with single-address digital control. Guaranteed performance and compatibility when used with Lutron DALI-2 controls.

MOUNTING OPTIONS

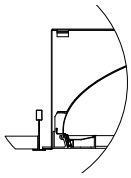
Recess mount into exposed or concealed T-Bar or Tegular grid ceiling



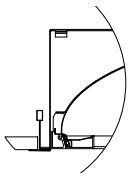
TG9 - tegular 9/16"



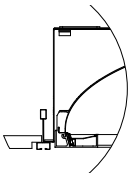
TG15 - tegular 15/16"



TB9 - t-bar 9/16"

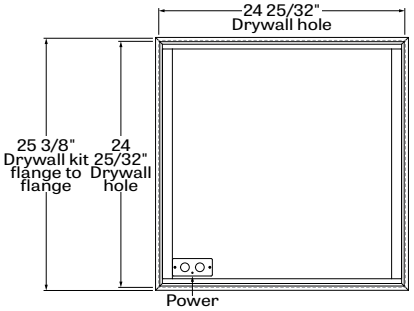


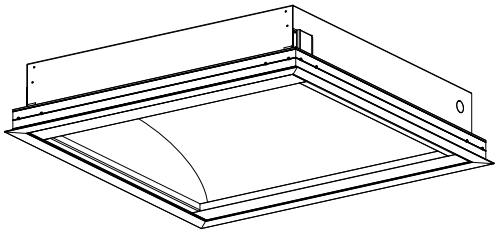
TB15 - t-bar 15/16"



ST - screw slot t-bar

A separate kit for mounting fixtures into drywall ceilings





DF - drywall kit

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FINISH

Interior reflectors - 95% reflective, matte white powder coating
Exterior - matte white powder coating.
Custom finish is also available.

CONSTRUCTION

Housing - Die formed cold rolled sheet steel 20 gauge thick, matte white powder coating
Main reflector - Extruded Aluminum (0.019" thickness), 98% reflective matte white painted.
Internal reflectors - 95% reflective semi-specular extruded Aluminum (0.020" thickness).
Door end-plates - Die formed cold rolled sheet steel 16 gauge thick, matte white powder coating.
Door sides - Extruded Aluminum (0.060" nominal thickness)
Internal brackets - Die formed cold rolled sheet steel 22 gauge thick.
Drywall kit - Extruded Aluminum 0.07" nominal, matte white powder coating.

WEIGHT

Cava-T 2x2: 19.06 lbs. - 8.65 kg

CERTIFICATIONS

ETL - Rated for Indoor Dry/Damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.
Chicago plenum - City of Chicago Approved (CCEA)
IC rated - suitable for direct contact with insulation.

WARRANTY

For all ChromaWerx products, LumenWerx provides a three-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.
Wall controllers are covered by the manufacturer warranty.

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CAVA-T 2x2 LED

RECESSED

Lumenwerx

CHROMAWERX TUNABLE WHITE

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.

Do you require a wall controller provided by Lumenwerx?

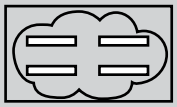
YES

DMX controller supplied 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. ✓

How many zones do you have?
A zone consists of one or more luminaires behaving identically.



1 Zone

2 Zones

1 - 4 Zones

5 or more Zones

Do you have more than 32 drivers in total?

NO

YES

To Calculate # of drivers

How to calculate the required number of drivers:

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

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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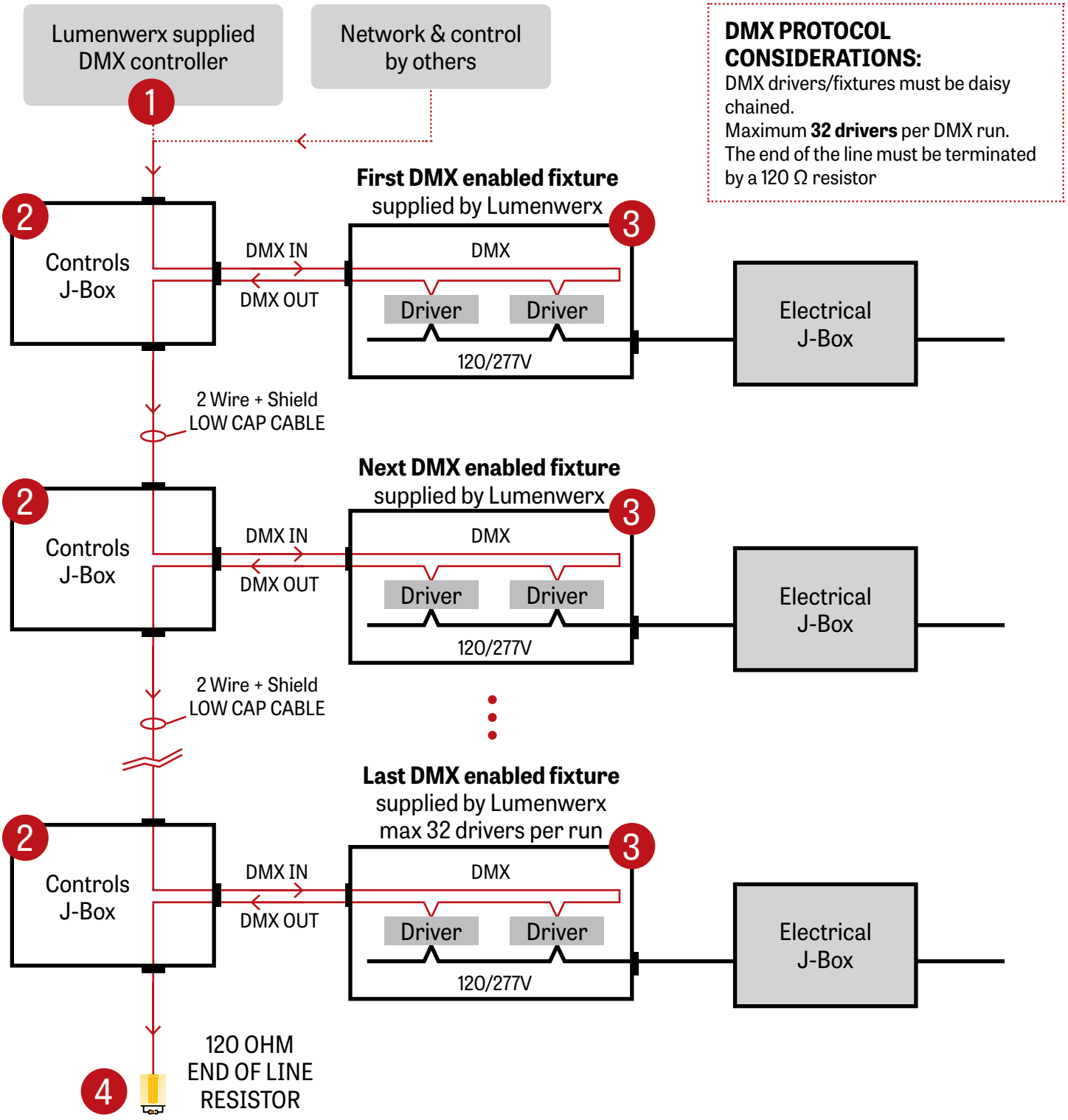
GENERIC DMX NETWORK ARCHITECTURE



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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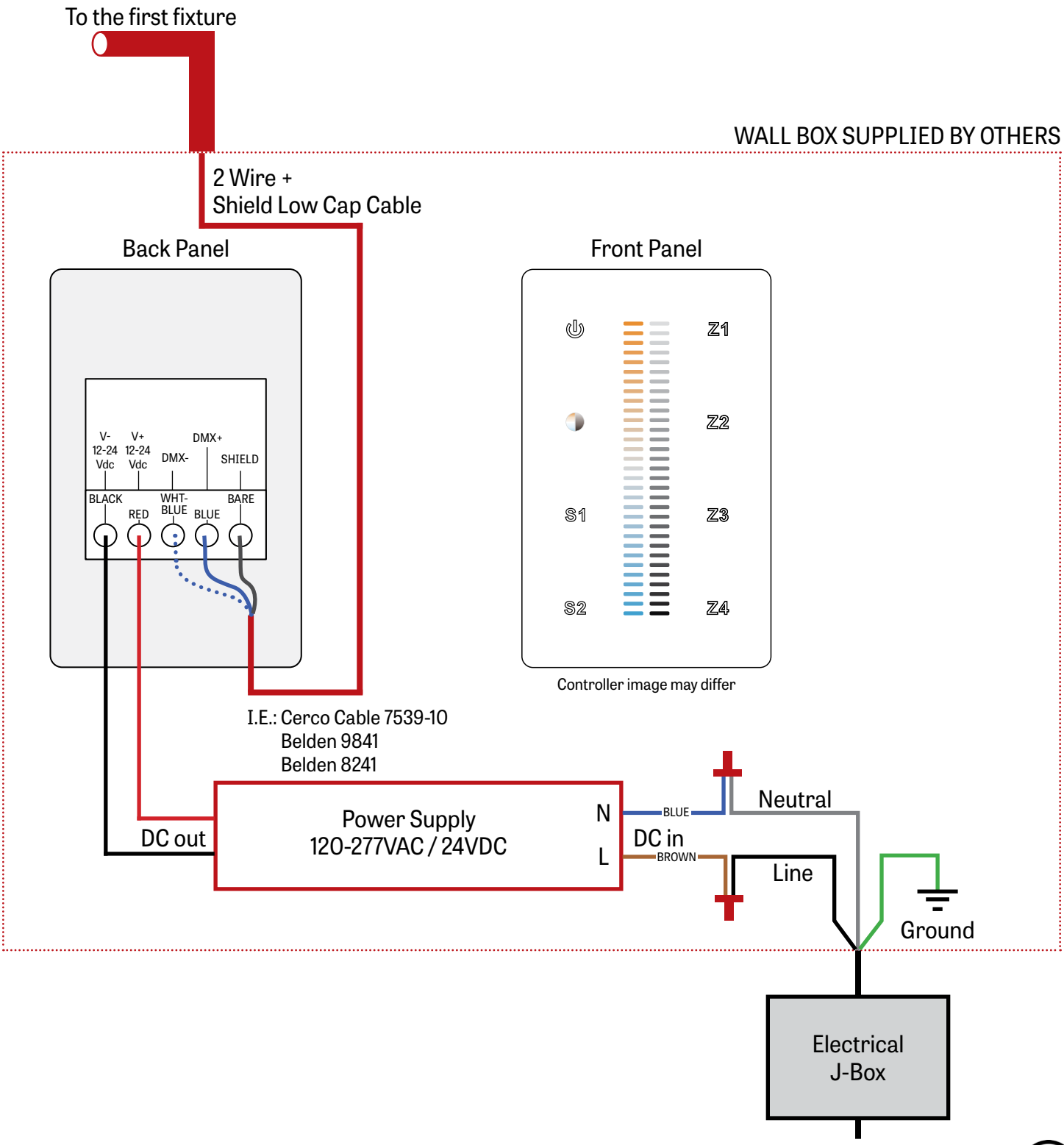
1 LUMENWERX SUPPLIED DMX CONTROLLER



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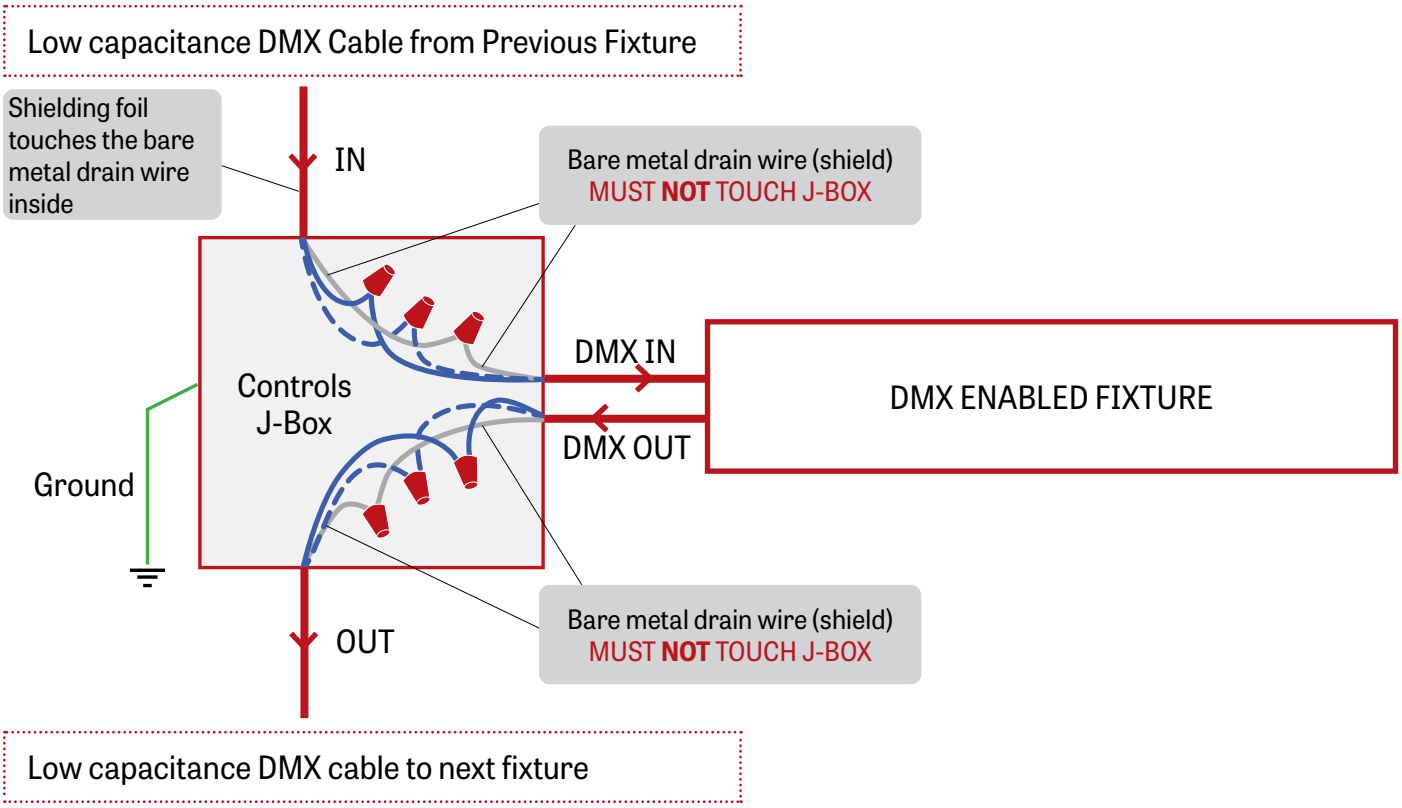
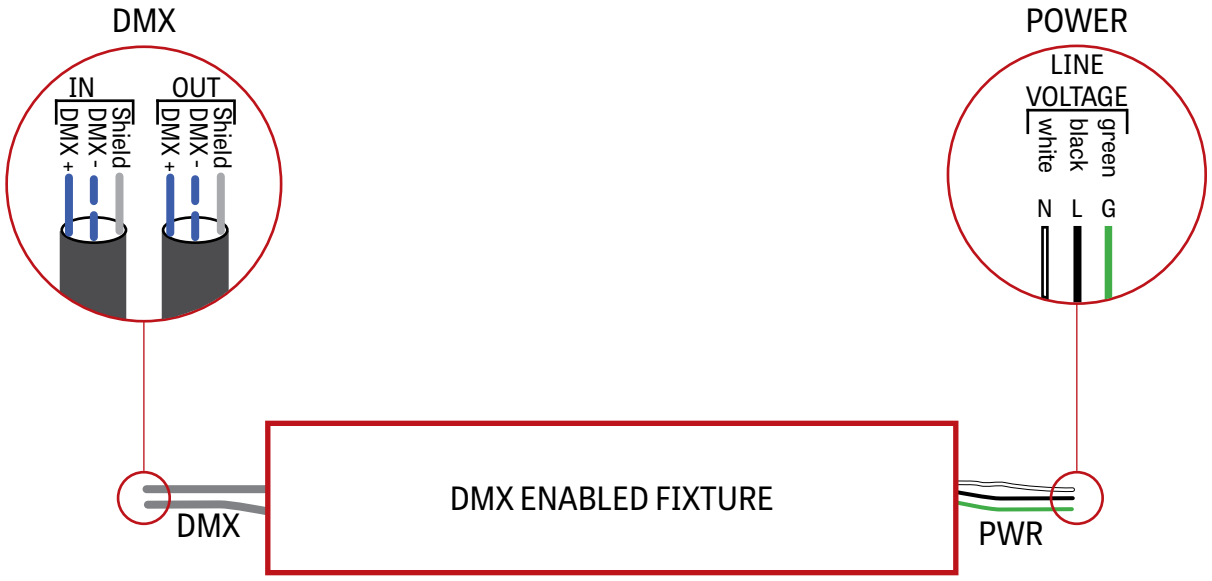
2 J-BOX DMX DAISY CHAIN DETAIL



3 DMX CONNECTION RECESSED & SURFACE



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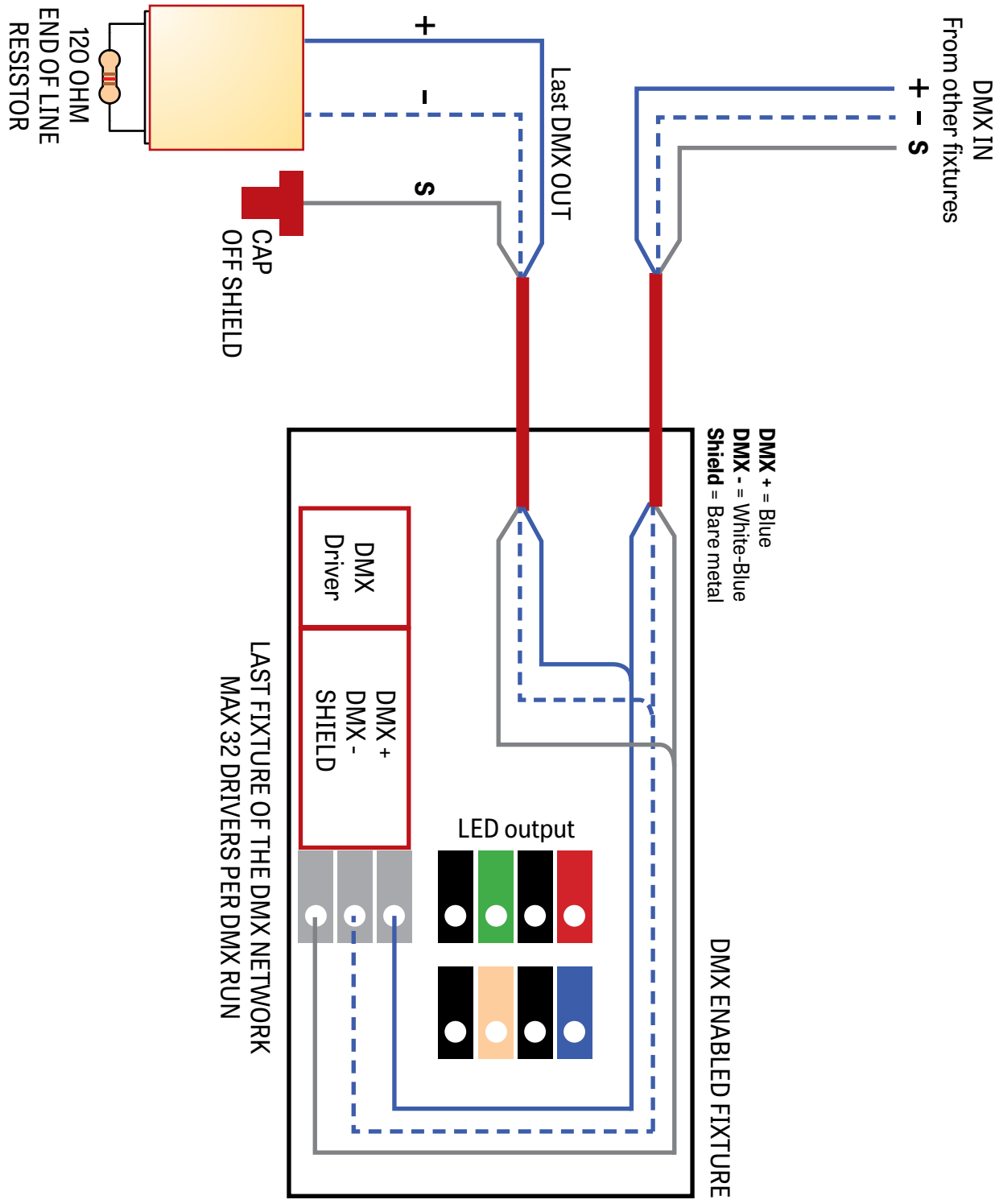
4 DMX LAST FIXTURE DETAIL



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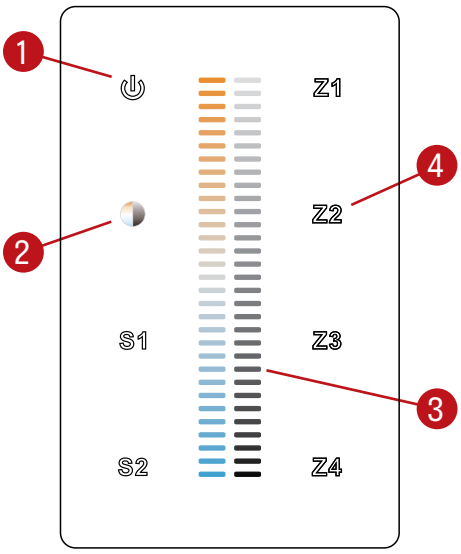
DMX WALL CONTROLLER

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

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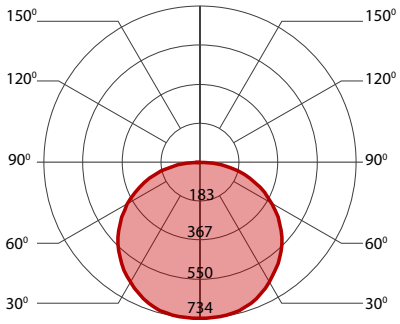
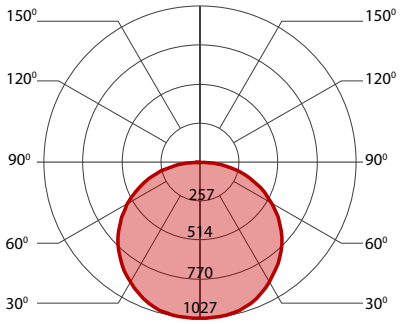
2500 LUMEN AT 80CRI - LOW OUTPUT



PERFORMANCE

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	2700K	23	2500	108
low output	3000K	22.5	2500	111
low output	3500K	21.5	2500	115
low output	4000K	21	2500	118
low output	6500K	20	2500	125

3500 LUMEN AT 80CRI - MEDIUM OUTPUT



PERFORMANCE

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	2700K	33.5	3500	104
medium output	3000K	32.5	3500	107
medium output	3500K	32	3500	110
medium output	4000K	30.5	3500	114
medium output	6500K	29	3500	120

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