

# NOVA 2x2 LED

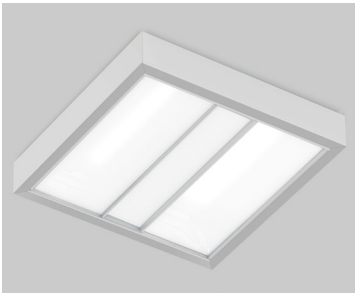
SURFACE



**LUMENWERX**  
WWW.LUMENWERX.COM

## 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**



Shown with a Nova flat lens



Shown with a Nova Slope lens

PROJECT: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

SIGNATURE: \_\_\_\_\_

### DESCRIPTION

**Nova** is an efficient architectural LED troffer with a distinctive luminous shielding that distributes gentle brightness from the sides of its central optical element. Using advanced LED engines, Nova provides highly efficient illumination and offers comprehensive ceiling, electrical, and controls options in 2x2, 1x4, and 2x4 sizes. Nova is available with both Flat and Slope side diffusers. Nova is an ideal vehicle for ChromaWerx white tuning in education, office, and healthcare applications where modular luminaires are used. See separate spec sheets for other available mountings.



**up to 117 lm/w performance**

### ORDER GUIDE

	22	PMO	HLO	LED			
LUMINAIRE ID	SIZE	CENTER OPTICS	SIDE OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGES	CHROMAWERX
<b>NOVSF</b> - nova surface flat	<b>22</b> - 2'x2'	<b>PMO</b> - Precision Micro-Prism Optic	<b>HLO</b> - High-Efficiency Lambertian Optic	<b>LED</b> - high performance LED	<b>80</b> - 80CRI <b>90</b> - 90CRI	<b>2300</b> - min. low output 2300lm <b>3200</b> - medium output 3200lm <b>4200</b> - max. high output 4200lm <b>####</b> - other required lm	<b>DUO</b> - tunable white 2 channel control 27k to 65k <b>SOLA</b> - dim to warm single channel control 22k to 35k
<b>NOVSS</b> - nova surface slope							

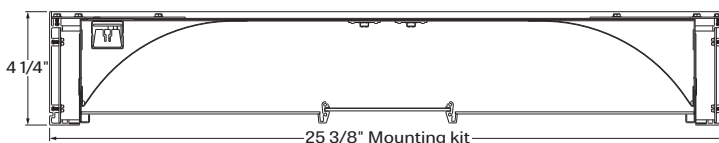
		1	SUR		
VOLTAGE	DRIVER	ELECTRICAL	MOUNTING	FINISH	OPTIONS
<b>120</b> - 120V <b>277</b> - 277V	<b>DMX</b> - to specify see pages 5 to 10 <b>DA</b> - Dali (duo only) local on-site commissioning is required <b>0-10</b> - Single 0-10V input (Sola) or dual 0-10V input for CCT/Intensity (Duo) <b>PSQ0</b> - Lutron T-Series 1% Tunable White	<b>1</b> - 1 circuit	<b>SUR</b> - surface mount kit	<b>W</b> - matte white <b>CF#</b> - custom finish specify RAL#	<b>FU</b> - fuse <b>CU</b> - custom

### DMX WALL CONTROLS

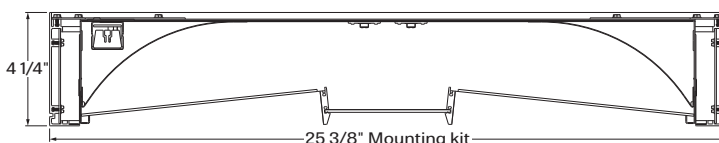
To specify see pages 5 to 10

### CROSS SECTION

See page 2 for ordering code detailed information

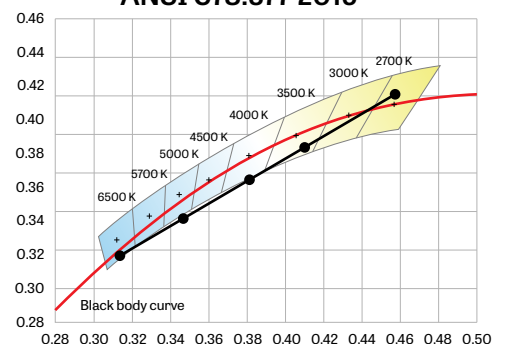


**NOVSF** - nova flat surface mount kit



**NOVSS** - nova slope surface mount kit

### ANSI C78.377-2015



## CHROMAWERX TUNABLE WHITE AND DIM TO WARM

## OPTICS

**CENTER LENS - PRECISION MICRO-PRISM-OPTIC (PMO)** - utilizes a specially designed catadioptric lens that combines refraction and internal reflection. The square-base prism is 24% the size of those used in a high-performance fluorescent lens. The exclusive two-dimensional array of prisms is designed to eliminate the glare found at higher viewing angles and as such, enables a glare cut-off at a 45° viewing angle.

The acrylic material itself is untinted, relying entirely on catadioptric control for effective source obscuration. A highly efficient TIR process at the acrylic-air interface on the prism surfaces redirects incident light with less than a 0.1% loss per reflection. As a result, these LumenWerx optics attain a high optical efficiency greater than 90%, while maintaining visual comfort at normal viewing angles and presenting a pleasing luminous appearance.

**SIDE LENS - HIGH EFFICIENCY LAMBERTIAN OPTIC (HLO)** - shielding of diffusing 0.075" thick acrylic with up to 88% transmission and good source obscuration.

## LIGHT SOURCE - LED

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	4000K	20	2300	117
medium output	4000K	29	3200	112
high output	4000K	38	4200	110

## Lumen Adjustment Factors

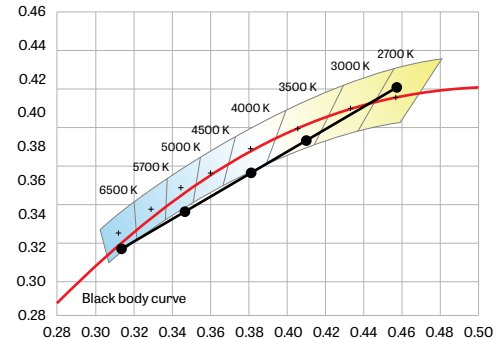
2700K	0.917
3000K	0.959
3500K	0.988
4000K	1.000
6500K	1.053

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

## ANSI C78.377-2015



**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.

# NOVA 2x2 LED

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## CHROMAWERX TUNABLE WHITE AND DIM TO WARM

### ELECTRICAL

#### **DMX (Duo only)**

Factory-set, adjustable output current, multi-channel LED driver with universal (120-277VAC) input. Using DMX wall controls (optionally supplied by LumenWerx) or an existing DMX control system, two channels of LEDs (warm-white & cool-white) are independently adjustable. Each DMX driver has multiple output channels that can be independently addressed at the factory or on-site using built-in RDM (Remote Device Management) functionality. Dimming range from 100%-0%. At maximum driver load, efficiency<89%, PF>0.9, THD<20%.

#### **Dali (Duo Only)**

Factory-set, adjustable output current LED driver with universal (120-277VAC) 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 range from 100%-0%. At maximum driver load, efficiency<86%, PF>0.9, THD<20%.

#### **0-10V (Solo)**

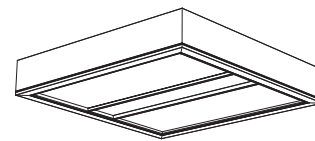
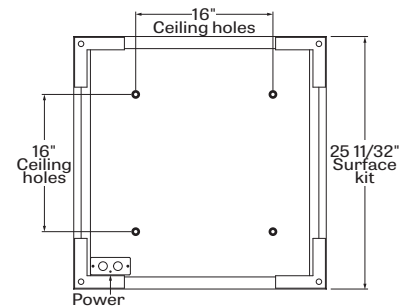
Factory-set, adjustable output current LED driver with universal (120-277VAC) input. Using a single 0-10V control signal, the light output warms in color temperature as it dims down to 1% and 2200K. At maximum driver load, efficiency<86%, PF>0.9, THD<20%.

#### **0-10V (Duo)**

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.

### MOUNTING OPTIONS

A separate kit for mounting fixtures directly to the ceiling surface. Kit is compatible with T-Bar, hard surface and drywall ceilings.



DF - drywall kit

### 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.

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

**Side lenses** - Frost impact acrylic lens 88% transmissive.

**Surface kit** - Extruded Aluminum 0.07" nominal, matte white or aluminum powder coating. Custom finishes are also available.

### WEIGHT

**Nova 2x2:** 16.52lbs. + 5.51lbs. - 7.5kg + 2.5kg

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## CHROMAWERX TUNABLE WHITE AND DIM TO WARM

### CERTIFICATIONS

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

### 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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## 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.

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

Driver  
1x driver

Direct only

per 4' fixture

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](mailto: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](mailto:controls@lumenwerx.com). Additional cost and equipment will be required. ✓

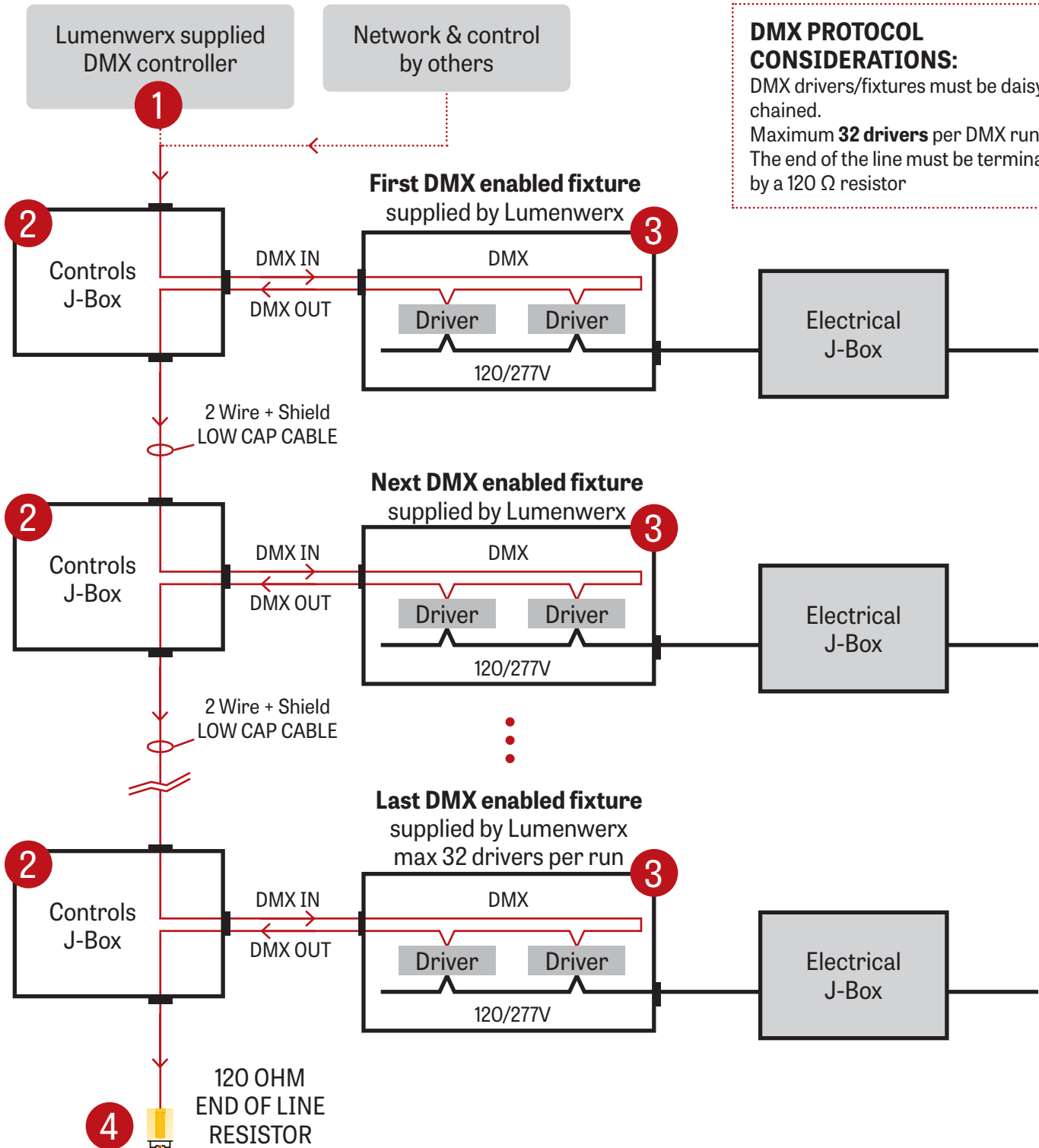
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## CHROMAWERX TUNABLE WHITE

### GENERIC DMX NETWORK ARCHITECTURE



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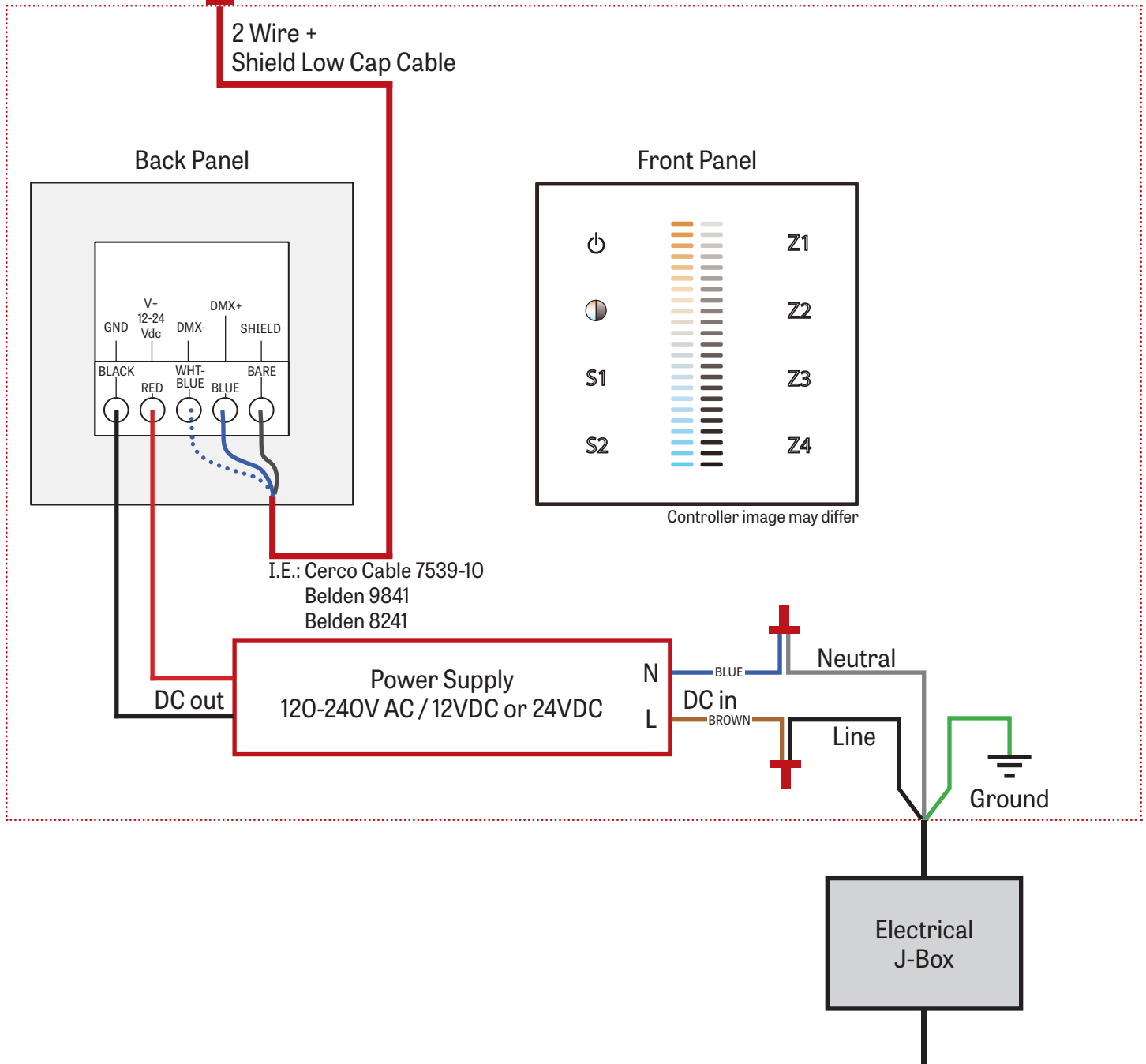
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## CHROMAWERX TUNABLE WHITE

### 1 LUMENWERX SUPPLIED DMX CONTROLLER

To the first fixture

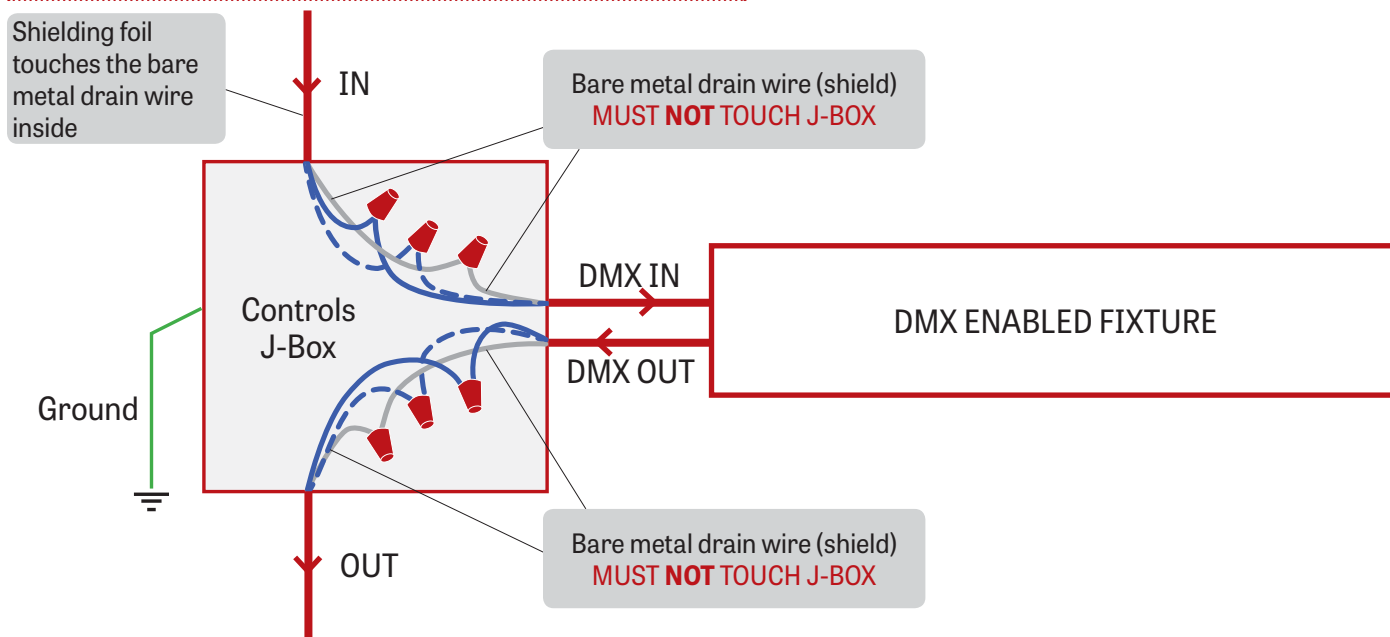
WALL BOX SUPPLIED BY OTHERS



## CHROMAWERX TUNABLE WHITE

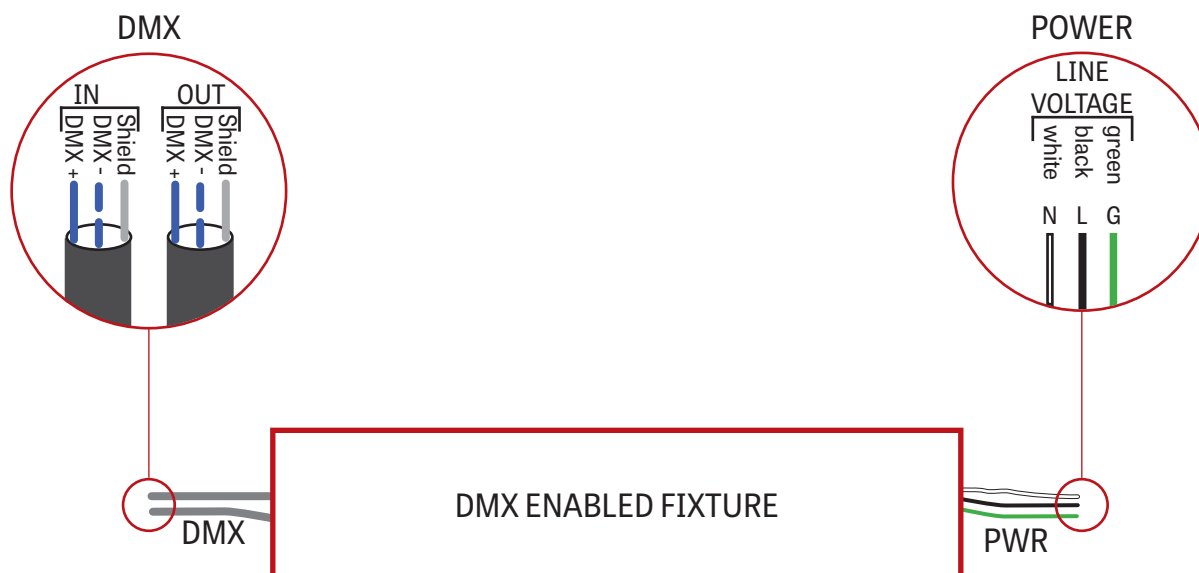
## 2 J-BOX DMX DAISY CHAIN DETAIL

### Low capacitance DMX Cable from Previous Fixture



Low capacitance DMX cable to next fixture

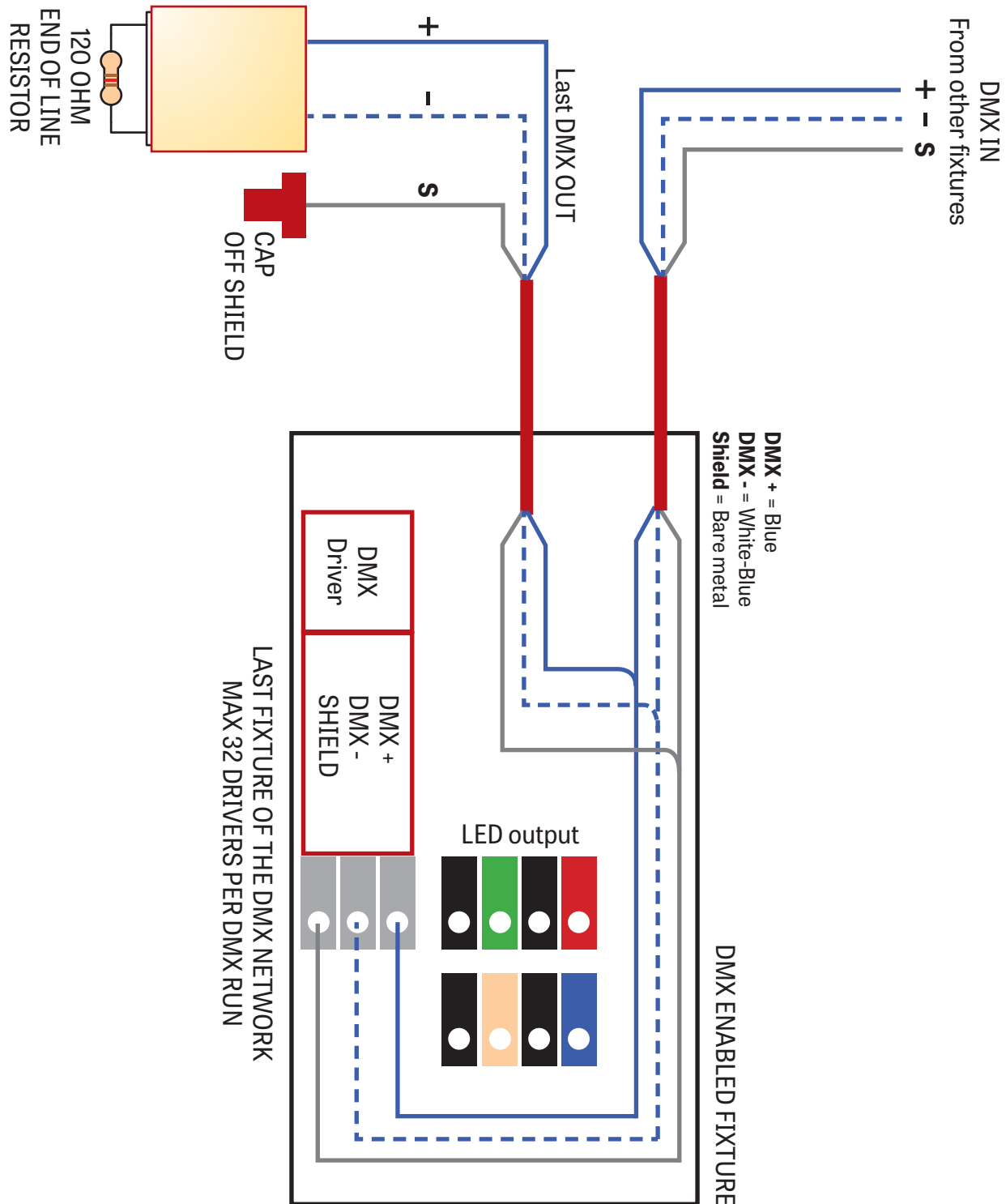
### 3 DMX CONNECTION RECESSED & SURFACE





## CHROMAWERX TUNABLE WHITE

## 4 DMX LAST FIXTURE DETAIL



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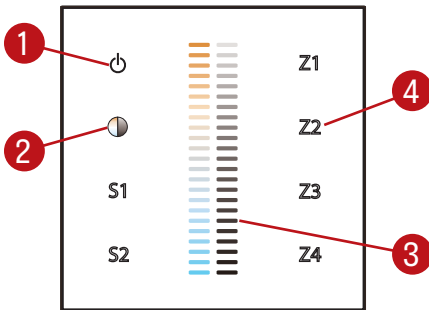
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## CHROMAWERX TUNABLE WHITE

### 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 chose between color/brightness. when Blue: brightness is selected, when Yellow: color is selected.
- (3) Slider: Depending on the mode chosen in 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

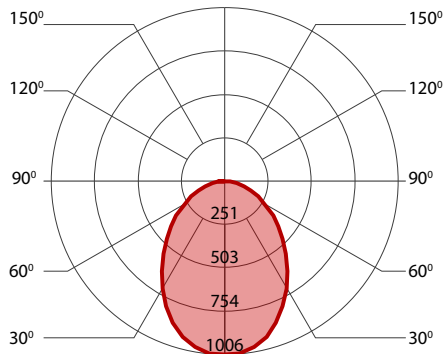
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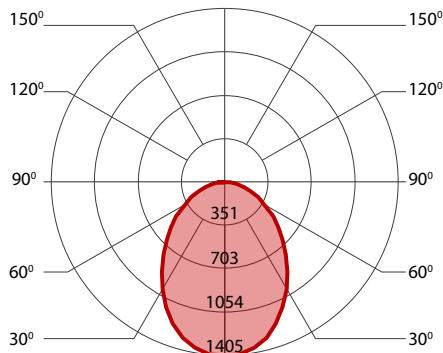
### 2300 LUMEN AT 80CRI - LOW OUTPUT



#### PERFORMANCE

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
low output	2700K	21.5	2300	107
low output	3000K	20	2300	115
low output	3500K	20	2300	115
low output	4000K	20	2300	117
low output	6500K	19	2300	121

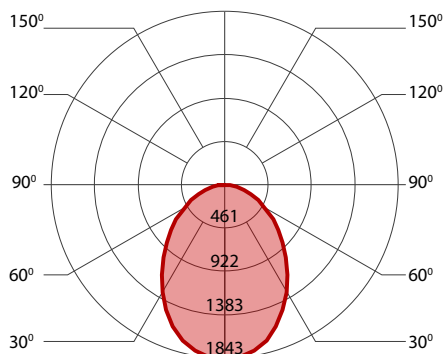
### 3200 LUMEN AT 80CRI - MEDIUM OUTPUT



#### PERFORMANCE

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
medium output	2700K	31	3200	103
medium output	3000K	29	3200	110
medium output	3500K	29	3200	110
medium output	4000K	29	3200	112
medium output	6500K	27.5	3200	117

### 4200 LUMEN AT 80CRI - HIGH OUTPUT



#### PERFORMANCE

LED output	Color Temp	Watts	Nominal Delivered Lumens	Efficacy LPW
high output	2700K	41.5	4200	101
high output	3000K	39	4200	108
high output	3500K	39	4200	108
high output	4000K	38	4200	110
high output	6500K	36.5	4200	115