

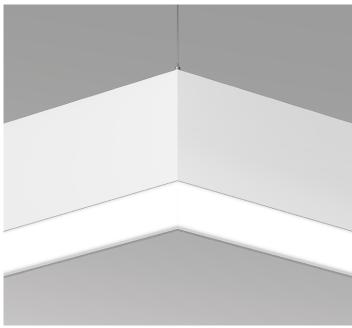
DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO





DESCRIPTION

Our elegant, flexible Via family is composed of linear, pendant, surface, recessed, and wall mounted luminaires. Each lighting fixture can be installed as a discrete luminaire or in continuous runs or patterns in which a combination of luminaires forms part of a custom design that can also incorporate less conventional acute and obtuse angles. Via 3 Pendant is offered with Lambertian, asymmetric, widespread, or wall wash optics.



Leveled corner

DIRECT OPTICS



HLO High-Efficiency Lambertian Optic



ARO2 Asymmetric Refractive



WRO2 Wall Wash Refractive Optic

INDIRECT OPTICS



WIO2 Widespread Indirect Optic



TIO¹
Translucent Indirect
Optic



WAI2 Widespread Asymmetric Indirect Optic



HLO ² High-Efficiency Lambertian Optic



ARO2 ² Asymmetric Refractive Optic



¹Available only with Direct/Indirect

²Not available with Direct/Indirect.

Lumenwerx

DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

Project:	
Туре:	

Order Guide

A drawing of your pattern is required - anything from a line drawing to an architectural drawing.

LUMINAIRE ID	DISTRIBUTION	DIRECT OPTIC Specify NA for Indirect fixture	LENS POSITION Specify NA for Indirect fixture	INDIRECT OPTIC Specify NA for Direct fixture	LIGHT SOURCE 4
VIA3PPAT					
VIA3PPAT - Via 3" Pendant Pattern	DI - Direct/ Indirect D - Direct I - Indirect	HLO - High-Efficiency Lambertian Optic ARO2 - Asymmetric Refractive Optic WRO2 - Wall Wash Refractive Optic NA - Not applicable	FH¹- Flush 0.5D¹- 0.5" drop 1.0D¹- 1.0" drop NA¹- Not applicable ¹- For HLO, specify FH, 0.5D, or 1.0D For ARO2 and WRO2, specify FH For an Indirect fixture, specify NA.	WIO2 - Widespread Indirect Optic TIO ² - Translucent Indirect Optic WAI2 - Widespread Asymmetric Indirect Optic HLO ³ - High-Efficiency Lambertian Optic ARO2 ³ - Asymmetric Refractive Optic NA - Not applicable ² Available only with Direct/Indirect. ³ Not available with Direct/Indirect.	SOLA - Dim-to-warm single channel control 35K to 22K DUO - Tunable white 2-channel control 65K to 27K *Static white, BIOS, and Chromawerx QUADRO also available. Consult other spec sheets.

CRI	DIRECT LUMEN PACKAGE Specify NA for Indirect fixture	INDIRECT LUMEN PACKAGE Specify NA for Direct fixture	PATTERN LENGTH	CORNER TYPE 8
80CRI - 80+ CRI 90CRI - 90+ CRI	350LMF ⁵ - Hypo output 350 lm/ft 500LMF - Low output 500 lm/ft 750LMF - Medium output 750 lm/ft 1000LMF - High output 1000 lm/ft 1200LMF ⁶ - Hyper output 1200 lm/ft NA - Not applicable ⁵ Minimum 3' fixture. ⁶ Fixture will be very bright. Use in suitable app	350LMF - Hypo output 350 lm/ft 500LMF - Low output 500 lm/ft 750LMF - Medium output 750 lm/ft 1000LMF - High output 1000 lm/ft 1200LMF ⁶ - Hyper output 1200 lm/ft NA - Not applicable	##FT##IN(#X#FT#IN- #X#FT#IN) ? - ##FT##IN: total nominal length of pattern in feet and/or inches #X: quantity of each section #FT#IN: nominal length of each section in feet and/or inches Continuous runs: lengths over 12' 7- Minimum 2' for Direct or Indirect Minimum 3' for Direct/Indirect Minimum 4' for DMX.	#LEV2C(A##) - 2-way leveled corner #LEV3C(A##) 9.10 - 3-way leveled corner #LEV4C(A##) 9.10 - 4-way leveled corner *Specify quantity (#) and angle (A##) in Custom *Specify quantity (#) and angle (A##) for each required corner type. *Separate angles with a "+" if more than one type is required, eg. 1LEV4C(A60+A120). *Not available with ARO2/WRO2. *Minimum angle is 45°. For ARO2/WRO2, minimum angle is 75°.

VOLTAGE	DRIVER 12	ELECTRICAL	MOUNTING 15	FINISH	OPTIONS 17
		1C			
120V - 120V 277V - 277V UNV - 120V-277V	SOLA SD1 - Single 0-10V input DUO DMX ^{13, 14} - DMX DDA ¹⁴ - DALI DT6 DDA8 ¹⁴ - DALI DT8 DD1 - Dual 0-10V input for CCT/intensity LD2 ¹⁴ - Lutron DALI-2 digital ¹² PoE (Power-over-Ethernet) compatible. Consult factory for details. ¹³ For more information, see pages 9 to 14. ¹⁴ On-site commissioning is required.	1C - 1 circuit	ACS - Aircraft cable, standard STS ¹⁶ - Stem, standard ACC() - Aircraft cable, custom STC() ¹⁶ - Stem, custom ¹⁶ Standard canopies are black for black fixtures, and white for all other finishes. See page 3 for full details on standard and custom options. ¹⁶ Not available with DMX.	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL#	FU120 - Fuse 120V FU277 - Fuse 277V CTB9 18 - T-bar caddy clip, 9/16" CTB15 18 - T-bar caddy clip, 15/16" CTG9 18 - Tegular caddy clip, 9/16" CTG15 18 - Tegular caddy clip, 15/16" CST 18 - Screw slot caddy clip NA - None 7" Separate codes with a "+" if more than one is specified. 18 Available with aircraft cable only.

Accessories

2/15

Optional, order separately

WALL CONTROLLER	
DMX	DDI
WCW ¹⁹ - DMX wall controller white WCB ¹⁹ - DMX wall controller black	TWCW ²⁰ - Dual 0-10V wall controller white TWCB ²⁰ - Dual 0-10V wall controller black
¹⁹ Available with DMX only. For more information, see pages 9 to 14, or consult factory.	²⁰ Available with DD1 only. For more information, see page 15, or consult factory.









DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

Pendant Mounting Code

Standard

For a standard mounting, please refer to the information below.

MOUNTING	
ACS - Aircraft cable, standard	STS - Stem, standard
$\cdot \varnothing$ 5" for power canopy $\cdot \varnothing$ 3" for non-power canopy $\cdot \text{Canopies are black for black fixtures, and white for all other fixture finishes}$ $\cdot \text{Power cord is black for black fixtures, and white for all other fixture finishes}$ $\cdot \text{Aircraft cable length is 36"}$	 Ø 5" for power canopy Ø 5" for non-power canopy Canopies are black for black fixtures, and white for all other fixture finishes Stem finish is the same color as fixture Stem length is 18" Stem is not field adjustable

Custom

MOUNTING

Aircraft Cable

For a custom mounting, specify the options in the parentheses.

Example: ACC(3NPC-72IN-W-PCB-NA)

ACC()					
	NON-POWER CANOPY SIZE	AIRCRAFT CABLE LENGTH	CANOPY FINISH	POWER CORD COLOR	OPTION
ACC	3NPC - Ø 3" non-power canopy 5NPC - Ø 5" non-power canopy	36IN - 36" 72IN - 72" 120IN - 120" #IN 1 - Other lengths, specify in inches	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish, specify RAL#	PCW - White PCB - Black	SEM ² - Seismic mounting SLC ² - Sloped ceiling for aircraft cable NA - None ² Not available with the Ø 3° non-power canopy size.
		¹ Maximum length is 288". For longer lengths, please consult factory.			

Stem

For a custom mounting, specify the options in the parentheses.

Example: STC(5NPC-36IN-W-STW-SLS)

MOUNTING					
STC()					
	NON-POWER CANOPY SIZE	STEM LENGTH	CANOPY FINISH	STEM COLOR	OPTION
STC	5NPC - Ø 5" non-power canopy	18IN - 18" 36IN - 36" #IN ³ - Specify length in inches	W - Matte white AL - Aluminum B - Matte black CF# - Custom finish,	STW - Matte white STAL - Aluminum STB - Matte black STCF# - Custom finish,	SLS - Sloped ceiling for stem NA - None
		³ Minimum length is 6". Maximum length is 72". Stem is not field adjustable.	specify RAL#	specify RAL#	

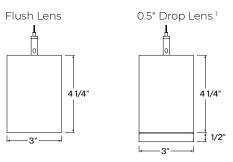




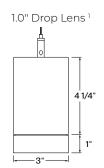


DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

Dimensions

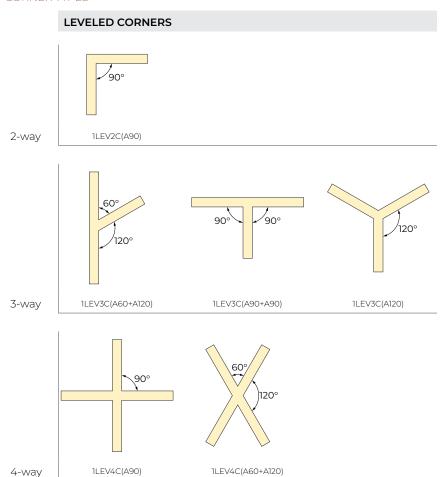


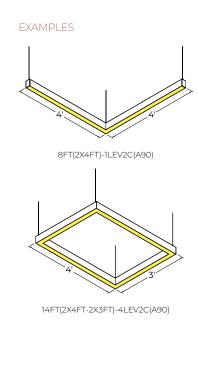




Pattern Layout

CORNER TYPES









DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

Photometrics

Values calculated based on a 4' fixture at 3500K and 80+ CRI for all optics.

DIRECT OPTICS





LM/FT	W/FT	LM/W
350	2.8	125
500	4.1	123
750	6.3	119
1000	8.6	116
1200	10.6	113



LM/FT	W/FT	LM/W
350	3.0	116
500	4.4	113
750	7.0	107
1000	9.7	103
1200	12.1	99



LM/FT	W/FT	LM/W
350	3.0	116
500	4.4	112
750	7.0	107
1000	9.8	102
1200	12.1	99

INDIRECT OPTICS

WIO2

LM/FT	W/FT	LM/W
350	2.4	146
500	3.5	142
750	5.5	137
1000	7.6	132
1200	9.4	128

LM/FT	W/FT	LM/W
350	2.7	127
500	4.0	124
750	6.3	119
1000	8.8	114
1200	10.9	110



LM/FT	W/FT	LM/W
350	2.5	139
500	3.7	135
750	5.8	130
1000	8.0	125
1200	10.0	120



LM/FT	W/FT	LM/W
350	2.8	125
500	4.1	123
300	4.1	123
750	6.3	119
1000	8.6	116
1000	0.0	110
1200	10.6	113



LM/FT	W/FT	LM/W
350	3.0	116
500	4.4	113
750	7.0	107
1000	9.7	103
1200	12.1	99

DIRECT/INDIRECT - LPW CALCULATION

For Direct/Indirect performance values, follow the formula.

(DIRECT LM/FT	+	INDIRECT LM/FT)	= IPW
(DIRECT W/FT	+	INDIRECT W/FT)	- 21 **

MULTIPLIER TABLES

Use these tables to get results for different color temperatures, CRI, and drop lenses, for all Direct and Indirect photometric tables.

SOLA

сст	WATTS LP1			W
		90+ CRI	80+ CRI	90+ CRI
3500K	1.00	1.19	1.00	0.84

сст	CT WATTS		LP	w
CCI	80+ CRI	90+ CRI	80+ CRI	90+ CRI
2700K	1.05	1.27	0.95	0.79
6500K	1.00	1.14	1.00	0.88

Intertek

Multiplier - Drop lens					
DIRECT LENS WATTS LPW					
Flush lens	1.00	1.00			
Drop lens 0.5"	0.98	1.02			
Drop lens 1.0"	0.96	1.04			

DUO



DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

Technical Specifications

DIRECT OPTICS

High-Efficiency Lambertian Optic (HLO)

The High-Efficiency Lambertian Optic (HLO) uses matte white reflectors to distribute LED output across 0.075" acrylic shielding, providing up to 88% transmission and good obscuration.

Available as a flush lens or as a drop lens, the HLO has a spacing criterion of 110

Asymmetric Refractive Optic (ARO2)

The Asymmetric Refractive Optic (ARO2) uses a sophisticated reflector combined with a matte beam-shaping film to create a smooth, effective downward light component without shadows or hot spots. It provides directional Gaussian light distribution with peak intensity at 20° above nadir and a 55° Full Width at Half Maximum (FWHM) beam angle. Microstructure material applied to the snap-in lens provides the precise refractive power and visual comfort, while achieving a high luminous efficacy.

Wall Wash Refractive Optic (WRO2)

The Wall Wash Refractive Optic (WRO2) delivers smooth vertical illumination with a gentle gradient and soft visual cut-off. Its exacting configuration creates a strong downward light component without shadows or hot spots and provides light distribution with peak intensity at 21° above nadir. Microstructure material applied to the snap-in lens provides the precise refractive power and visual comfort, while achieving a high luminous efficacy.

INDIRECT OPTICS

Widespread Indirect Optic (WIO2)

The Widespread Indirect Optic (WIO2) is a horizontal LED array with a widespread indirect micro prismatic optic that offers an impressive 160° spread. WIO2 creates an even illumination for smooth brightness on the ceiling that can achieve uniformity ratios of up to 2:1.

Uniformity [max/min]

Based on 18' continuous runs, in a 20' x 40' room, 10' wall height

Mounting height	Spacing (Center to center)			
from ceiling	8'	10'	12'	
12"	5.5	10.0	9.0	
18"	3.5	6.0	6.0	
24"	2.5	4.0	4.5	

Translucent Indirect Optic (TIO)

The Translucent Indirect Optic (TIO) is composed of a horizontal LED array that has a translucent lens to mask pixilation from the diodes. TIO has a 100° spread in the indirect that is ideal when the fixture is mounted farther away from the ceiling.

Widespread Asymmetric Indirect Optic (WAI2)

The Widespread Asymmetric Indirect Optic (WAI2) offers an upward grazing effect with a 45° forward throw. It softly highlights the ceiling in the up-light while distributing the required illumination of the rest of an interior space. For avoiding glare and enjoying visual comfort, WAI2 is an ideal solution.

High-Efficiency Lambertian Optic (HLO)

The High-Efficiency Lambertian Optic (HLO) uses matte white reflectors to distribute LED output across 0.075" acrylic shielding, providing up to 88% transmission and good obscuration. HLO has a spacing criterion of 1.10.

Asymmetric Refractive Optic (ARO2)

The Asymmetric Refractive Optic (ARO2) uses a sophisticated reflector combined with a matte beam-shaping film to create a smooth, effective downward light component without shadows or hot spots. It provides directional Gaussian light distribution with peak intensity at 20° above nadir and a 55° Full Width at Half Maximum (FWHM) beam angle. Microstructure material applied to the snap-in lens provides the precise refractive power and visual comfort, while achieving a high luminous efficacy.







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LIGHT SOURCE

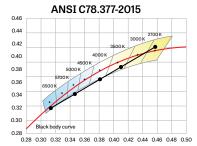
Custom linear array of alternating color temperature mid-flux LEDs are mounted directly to the housing for optimal thermal performance. For the DUO products, a color temperature range from 6500K-2700K is achievable with color points on or below the black body curve. For the SOLA products, a color temperature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

It is a single-channel control that dims output while warming the color temperature in a pre-determined relationship. A simple 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

It is a two-channel control. It uses an analog (0-10V) protocol for separate control of luminaire CCT and intensity or a digital (DMX, DALI, and LD2) 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 cool (6500K) to warm (2700K) 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. When paired with DALI drivers (DDA/DDA8), color tuning follows a linear dimming curve.



PATTERN LENGTH

All individual sections are joined together onsite using the joiner kits provided. Lumenwerx offers joiner kits that are extremely simple to work with in the field and result in a fixture that appears virtually seamless with no light leak at any connection.

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%.

<u>DALI</u>

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%.

<u>DD1</u>

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.







DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

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), QUADRO (RGBW), emergency battery backup, and sensor integration. These must be addressed and evaluated on a case-by-case basis.

MOUNTING

Pendant fixtures can be mounted either with aircraft cable or with stem. See page 3 for details.

FINISH

Interior: 95%, reflective matte powder coated white paint **Exterior**: Matte white, matte black, or aluminum powder coating. Custom finishes are also available.

CONSTRUCTION

Housing: Extruded aluminum, up to 90% recycled content **Interior brackets**: Die-formed cold rolled sheet steel

Joining system: Die-cast zinc

Reflectors: Die-formed cold rolled steel, 95% reflective matte

white painted **Lens**: Acrylic

Drop lens: Extruded with glued end caps

End caps: Die-cast aluminum

Hanger: Chromed griplock securely attached in end caps and/or

joiners with stainless steel hardware

Aircraft cable suspension: Ø 1/16" stainless steel aircraft cable

Stem: Ø 1/2" threaded steel tube

CERTIFICATION

ETL: Rated for indoor dry/damp locations. Conforms to UL Standard 1598 and certified to CAN/CSA Standard C22.2 No. 250.0.

WARRANTY

Lumenwerx provides a five-year limited warranty on 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.

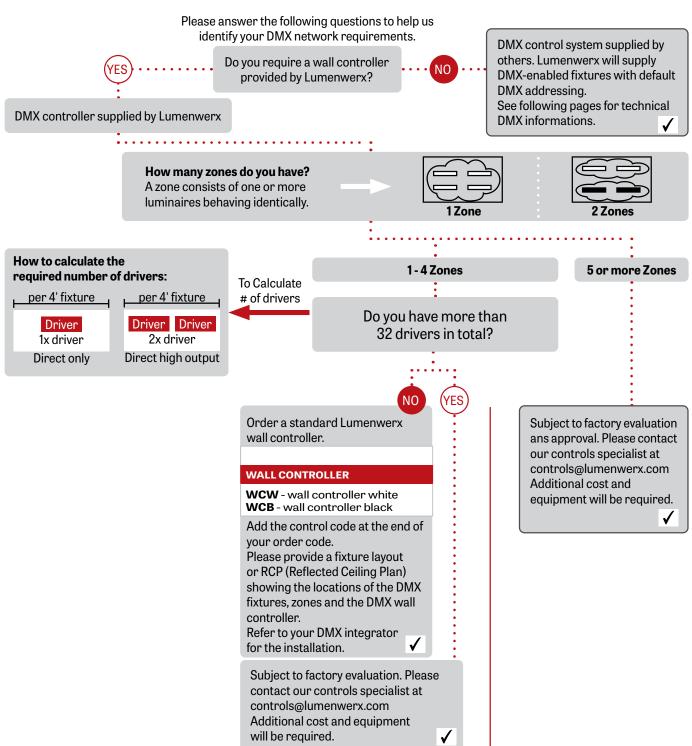




DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

DUO DMX SPECIFICATION the DMX DMX into

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>.





DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

GENERIC DMX NETWORK ARCHITECTURE Lumenwerx supplied Network & control **DMX PROTOCOL** DMX controller **CONSIDERATIONS:** by others DMX drivers/fixtures must be daisy chained. Maximum 32 drivers per DMX run. The end of the line must be terminated First DMX enabled fixture by a 120 Ω resistor supplied by Lumenwerx **DMX IN** DMX Controls J-Box **DMX OUT** Driver Driver Electrical J-Box 120/277V 2 Wire + Shield LOW CAP CABLE **Next DMX enabled fixture** supplied by Lumenwerx **DMX IN** DMX Controls J-Box DMX OUT Driver Driver Electrical J-Box 120/277V 2 Wire + Shield LOW CAP CABLE Last DMX enabled fixture supplied by Lumenwerx max 32 drivers per run **DMX IN** DMX Controls J-Box **DMX OUT** Driver Driver Electrical J-Box 120/277V

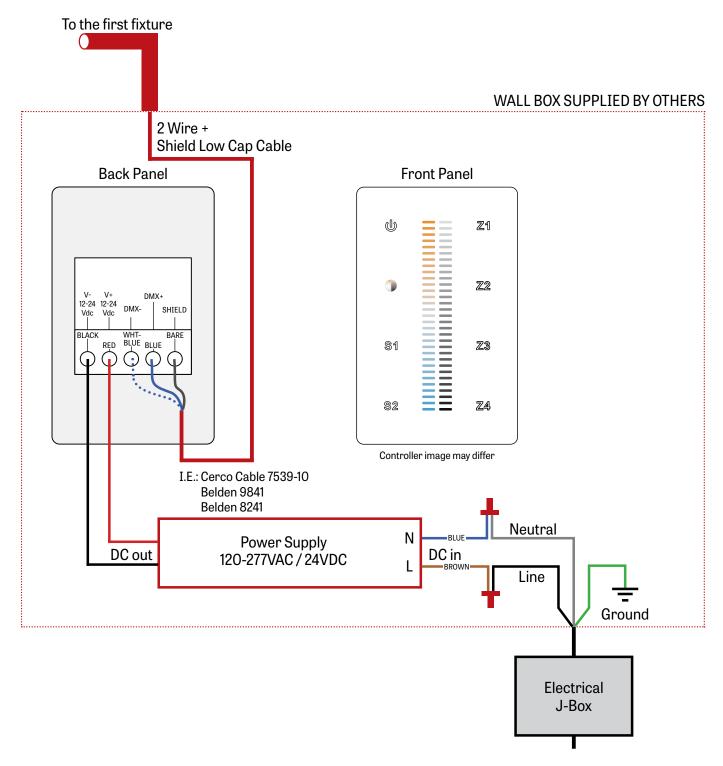


120 OHM END OF LINE RESISTOR



DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

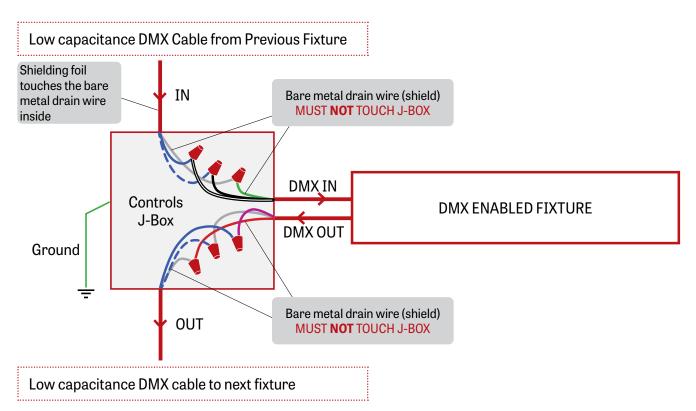
LUMENWERX SUPPLIED DMX CONTROLLER

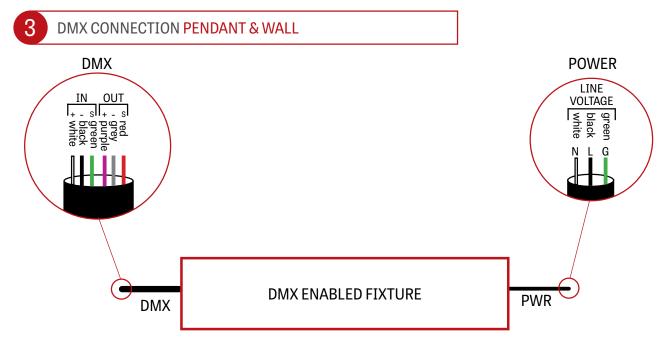




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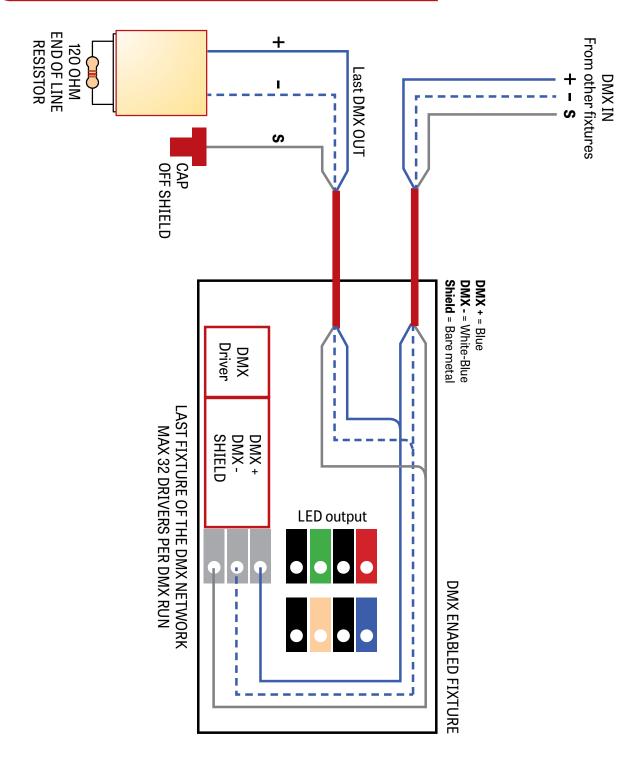






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DIRECT/INDIRECT, DIRECT, INDIRECT CHROMAWERX - SOLA, DUO

DMX WALL CONTROLLER

DUO 1-4 ZONE (J) $\mathbb{Z}1$ 4 $\mathbb{Z}2$ \$1 $\mathbb{Z}3$ **Z**4

(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.

Up to 4 zones can be selected either independently or together. (4) Zone select:

Once selected, the commands will be sent to the zone identified

by a Blue LED.

Default DMX Addresses:

1Warm 2 Cool



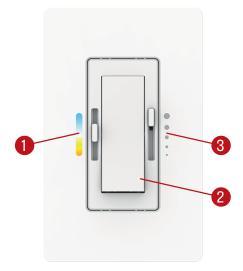




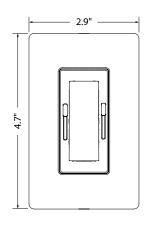
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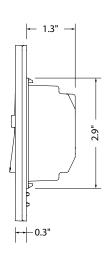
DUAL 0-10V WALL CONTROLLER

Front Panel



Dimensions





Controller image may differ

(1) CCT control: Use this button to adjust the color temperature.
 (2) On/Off switch: Use this button to turn ON or OFF the fixture.

(3) Dimming control: Use this button to adjust the brightness.

Wiring Diagram

