SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

Type: _____

5 YEAR WARRANTY
5

CCC◄HROMAWERX

Up to 97 lm/W performance

DESCRIPTION

Shell fixtures are sleek, balanced, and well detailed. Remarkably versatile, Shell complements general illumination in working spaces and provides functional illumination over conference tables, in break or lunch rooms, and in circulation spaces. Shell Linear Pendant can offer a subtle uplight for added visual interest. Shell is available with Chromawerx Duo, Sola, and solid colors (red, green and blue), as well as Static White and BIOS. See additional specification sheets for other mounting and shape options.

Shell Linear Pendant - Aircraft cable

Shell Linear Pendant - Stem

cETLus LISTED
Intertek

bios   PoE Power over Ethernet   WELL   WELL

SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

Type: _____

Order Guide

LUMINAIRE ID	LENGTH [1]	OPTICS	LIGHT SOURCE	CRI	LUMEN PACKAGE		
SHELP		**HLO**					
SHELP - Shell Linear Pendant	**4FT** - 4' **8FT** - 8' **12FT** - 12' [1] For installation space requirements, see page 2.	**HLO** - High-Efficiency Lambertian Optic	**SW** - Static white **BIOSST** - Static biologically-optimized lighting **BIOSDY** [2] - Dynamic biologically-optimized lighting **SOLA** - Dim-to-warm single channel control 22K to 35K **DUO** - Tunable white 2-channel control 27K to 65K **RS** - Red solid **GS** - Green solid **BS** - Blue solid [2] Available with Remote Driver Box only.	**80** - 80CRI **90** [3] - 90CRI [3] Not available with BIOS.	SW, BIOSST, BIOSDY, SOLA, DUO		
						Low	Medium [4]	High [4]

(Lumen package table)

	Low	Medium [4]	High [4]
4 feet	**1000lm**	**1600lm**	**2000lm**
8 feet	**2000lm**	**3200lm**	**4000lm**
12 feet	**3000lm**	**4800lm**	**6000lm**

Solid colors (RS, GS, BS)

4 feet	**18W**
8 feet	**36W**
12 feet	**54W**

[4] Not available with BIOS.

COLOR TEMP Do not specify for Sola, Duo and solid colors.	VOLTAGE	DRIVER [7]		ELECTRICAL
				1
27 [5] - 2700K **30** - 3000K **35** - 3500K **40** - 4000K [5] Not available with BIOS.	**120** - 120V **277** - 277V **UNV** - 120V-277V **347** [6] - 347V [6] Available with static white and D1 only.	**SW, BIOS** **D1** - 1% 0-10V **DA** [8] - DALI **LDE1** [8] - Lutron Hi-lume 1% Eco **ELD1** [9] - eldoLED 1% ECOdrive **ELD0** [9] - eldoLED 0.1% SOLOdrive **SOLA** **SD1** - Single 0-10V input [7] PoE (Power-over-Ethernet) compatible. Consult factory for details. [8] On-site commissioning is required. [9] Available with Remote Driver Box only.	**DUO** **DD1** - Dual 0-10V input for CCT/intensity **DMX** [8] - DMX, to specify see pages 8 to 11 **DA** [8] - DALI **PSQ0** [8][9] - Lutron T-Series 1% Tunable White Solid Colors **D1** - 0-10V	**1** - 1 circuit

MOUNTING			FINISH	UP LIGHT GLOW [14]
DRIVER BOX	**CANOPY FINISH**	**STEM/CABLE** (Specify length (#) in inches)	**W** - Matte white **AL** - Aluminum **B** - Matte black **RAL1028** - Yellow **RAL2004** - Orange **RAL3020** - Red **RAL4010** - Magenta **RAL5002** - Blue **RAL6018** - Green **CF#** - Custom finish specify RAL#	**WHS** - White glow **BLS** - Blue glow **RES** - Red glow **GRS** - Green glow **ORS** - Orange glow **##S** - Custom glow **NG** - No glow
SCD [10][11] - Square Canopy Driver Box **RDB** - Remote Driver Box [10] Not available with ELD1, ELD0, and PSQ0 driver options. [11] Not available with BIOSDY.	**W** - Matte white **AL** - Aluminum **B** - Matte black **CF#** - Custom finish specify RAL#	**SSW#** [12] - Stem, 18" standard, max. 48" **SPW#** [13] - Aircraft cable with power cord, 36" standard [12] Stem color matches fixture. [13] Power cord is white. For other colors, consult factory.		[14] For solid colors, glow will be the same color as the specified solid color.

Accessories
Optional, order separately

DMX WALL CONTROLLER [15]
WCW - Wall controller white   **WBW** - Wall controller black   [15] For more information, see pages 8 to 11, or consult factory.

SECTION VIEW
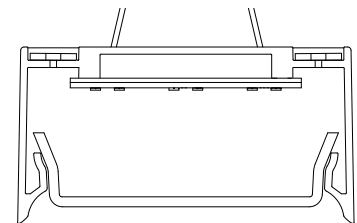
SHELP - Aircraft cable

ETL Listed Intertek

bios   PoE Power over Ethernet   WELL   WELL
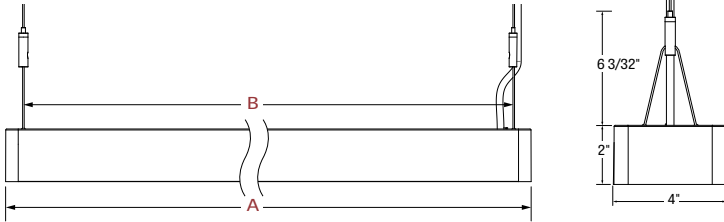
SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

Type: _____

Dimensions

SHELP - Shown with aircraft cable and power cord

Mounting Dimensions

| NOMINAL LENGTH	A FIXTURE LENGTH	B BETWEEN MOUNTING POINTS (CENTER TO CENTER)	
		Aircraft cable	Stem
4' [1]	48"	46 19/32"	45 13/32"
8' [2]	95 19/32"	94 13/16"	93 13/32"
12' [2]	143 1/8"	141 13/16" [3]	141 1/16" [3]

[1] For Shell 4FT, a minimum 50" of clearance space is required on one end for the installation.

[2] For Shell 8FT & 12FT, a minimum 50" of clearance space is required on both ends for the installation.

[3] For Shell 12FT there is a 3rd mounting point in the center of the fixture.

Photometrics
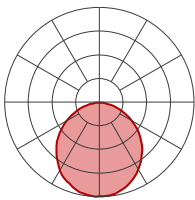
Performance for 4 Feet - Delivered Lumens at 35K at 80 CRI

LED OUTPUT	LUMENS PER FOOT	TOTAL LUMENS PER 4FT	INPUT WATTAGE	EFFICACY LPW
Low output	250	1000	10.3	97
Medium output	400	1600	16.9	95
High output	500	2000	21.6	93
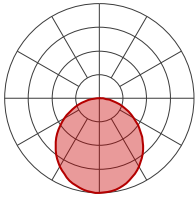
Performance for 8 Feet - Delivered Lumens at 35K at 80 CRI

LED OUTPUT	LUMENS PER FOOT	TOTAL LUMENS PER 8FT	INPUT WATTAGE	EFFICACY LPW
Low output	250	2000	20.5	97
Medium output	400	3200	33.7	95
High output	500	4000	43.2	93
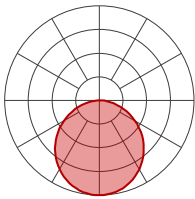
Performance for 12 Feet - Delivered Lumens at 35K at 80 CRI

LED OUTPUT	LUMENS PER FOOT	TOTAL LUMENS PER 12FT	INPUT WATTAGE	EFFICACY LPW
Low output	250	3000	30.8	97
Medium output	400	4800	50.6	95
High output	500	6000	64.8	93

Multiplier - CCT/CRI

CCT (K)	WATTS		LPW	
	CRI80	CRI90	CRI80	CRI90
2700	1.05	1.13	0.95	0.88
3000	1.01	1.09	0.99	0.92
3500	1	1.08	1	0.93
4000	1	1.08	1	0.93

ETL LISTED Intertek

bios   PoE Power over Ethernet   WELL   WELL

SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

Type: _____

MOUNTING OPTIONS

SQUARE CANOPY DRIVER BOX
Shown with stem option
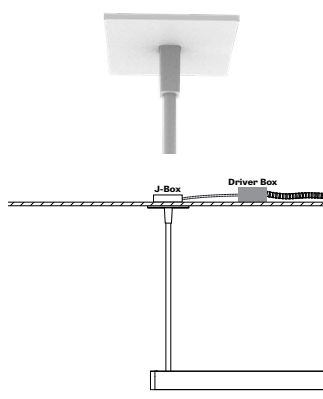
REMOTE DRIVER BOX
Shown with stem option
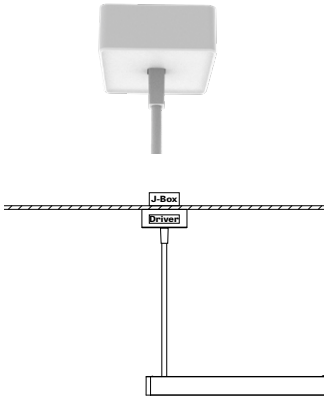
SCD - Square Canopy Driver Box - driver is surface-mounted in a 5 3/32" x 5 3/32" x 2 3/8" enclosure. Shell 4' and Shell 8' feature one driver box canopy, and one flat canopy. Shell 12' requires two driver box canopies, and a third flat canopy. Canopy supports power cord or stem. Enclosure is available in standard or custom finishes (see ordering code).
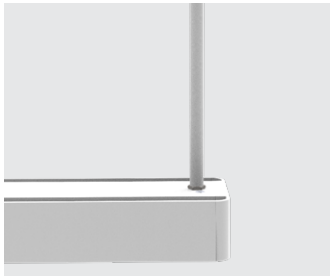
RDB - Remote Driver Box - driver is recessed with brackets for mounting to ceiling joists or other supporting members. A 5 1/2" x 5 12" x 2 3/8" square canopy supports power cord or stem. Canopy is available in standard or custom finishes (see ordering code).

STEM (SSW)

AIRCRAFT CABLE (SPW)

18" long x 1/2" diameter steel stem is available for all driver mounting options. Longer stems up to 48" are available. Stems cannot be cut in the field. Finished to match housing.
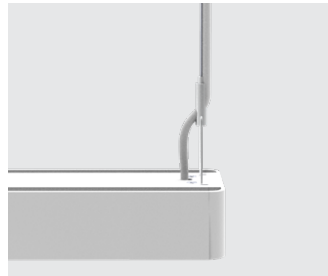
Standard 36" long x 1/16" braided stainless steel aircraft cable and 5-conductor white cord is available for all driver mounting options.

ETL LISTED c US
Intertek

SHELL-LINEAR-PENDANT-SPEC-REV2   February 14, 2024

bios PoE Power over Ethernet WELL WELL

SHELL

LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Technical Specifications

OPTICS

High-Efficiency Lambertian Optic (HLO) - Shielding of 0.1" thick, thermoformed diffusing acrylic with up to 70% transmission and excellent source obscuration. Vertical return edge illuminates inside of housing. Luminaire brightness is controlled by the flux-to-shielding area ratio.

LIGHT SOURCE - STATIC WHITE

Custom array of mid-power LEDs mounted directly to the fixture housing for optimal thermal performance. Available in 2700K, 3000K, 3500K and 4000K with a minimum 80 CRI and an option for 90 CRI with elevated R9 value. Color consistency is maintained to within 3 SDCM. LEDs operate at a reduced drive current to optimize efficacy and lumen maintenance. All LEDs have been tested in accordance with IESNA LM-80-08 and results have shown L80 lumen maintenance is greater than 60,000 hours. Absolute product photometry is measured and presented in accordance with IESNA LM-79, unless otherwise indicated.

LIGHT SOURCE - SOLA / DUO

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 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 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.

BIOS SkyBlue™ Technology is designed to provide the specific circadian stimulus to improve overall sleep quality, recovery during the night, and overall feelings of well-being.

The non-visual light signals that stimulate our circadian system have peak intensity in the "sky blue" region. As the diagram below illustrates, BIOS SkyBlue technology shifts the peak LED spectral intensity (460 nm) to align better with the peak response of circadian stimulus. Also note the enhanced deep-red (near 660 nm) spectrum.

BIOS 3500K

WELL for Light - The WELL building standard focuses on light quality in several features. There are three categories that are fully attributed to the constriction 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 BIOS LED or Duo is selected
- Feature 55 or L04 meets WELL glare category (c-d)
- Feature 58 or L07 when 90CRI 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.
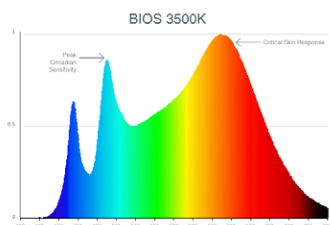
WELL for Mind -This luminaire meets WELL for mind as it is a human centric luminaire offering quality light, excellent color, and smooth optics. If any of these features are incorporated in a luminaire, it can improve the ability to focus, concentrate, and persist longer on a given task. This fixture harmoniously operates in a space to assist the mind.

For more information please contact well@lumenwerx.com.

SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

_____

Type: _____

CHROMAWERX

A custom array of alternating color temperature LEDs mounts directly to the housing for optimal thermal performance. Mid-flux LEDs operate at reduced drive current to optimize efficacy and lumen maintenance.
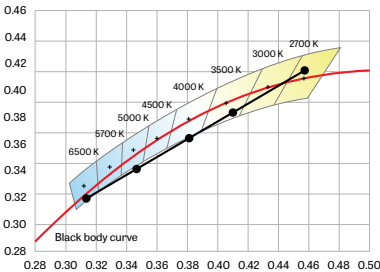
Chromawerx Sola

Chromawerx Sola dims output while warming the color temperature in a pre-determined relationship. Dimming range is programmable, but the default option runs from 3500K at 100% full power to 2200K at 5% full power.

Chromawerx Duo

Chromawerx Duo enables the user to set color temperature and light output independently. Commonly called "tunable white", Chromawerx Duo provides the range from warm to cool color that can be useful for helping to entrain circadian rhythms, stimulate alertness, 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.

ANSI C78.377-2015

Chromawerx Solid colors

For dramatic coloration, Shell offers Chromawerx options for solid colors like red, green, or blue. Consult Lumenwerx for implementations of Chromawerx Duo with white and solid color LEDs, enabling muted colors or the ability to switch between white and colored light
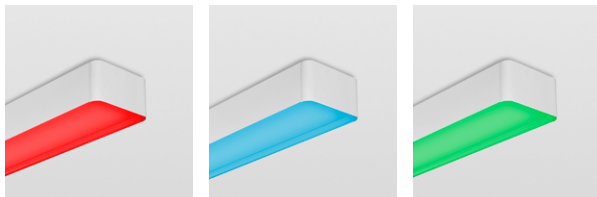
RS - Red solid   **BS** - Blue solid   **GS** - Green solid

ELECTRICAL

Factory-set, adjustable output current LED driver with universal (120-277VAC) input. Dimmable from 100% to 1% with 0-10V dimming control. Rated life (90% survivorship) of 50,000 hours at 50°C max. ambient (and 70°C max. case) temperature. At maximum driver load: Efficiency>84%, PF>0.9, THD<20%. Other specifiable options include Lutron Hi-Lume 1% (specify 2-wire, or Ecosystem Dim-to-Off), Lutron 5-Series (5% Ecosystem), DMX (RDM compatible), eldoLED 1% ECOdrive, eldoLED 0.1% SOLOdrive, and DALI protocol drivers. All of our standard 0-10V drivers are NEMA 410 compliant.

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.

FINISH

Interior - 95% reflective, matte white powder coating.
Exterior - powder coating in a range of vibrant colors.

HOUSING COLOR OPTIONS
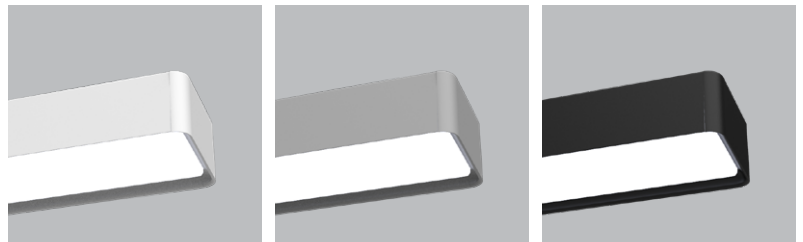
W - Matte white

AL - Aluminum
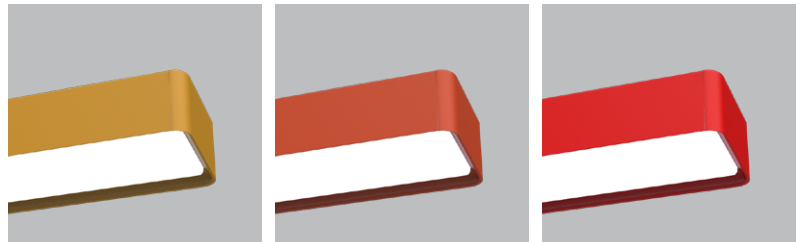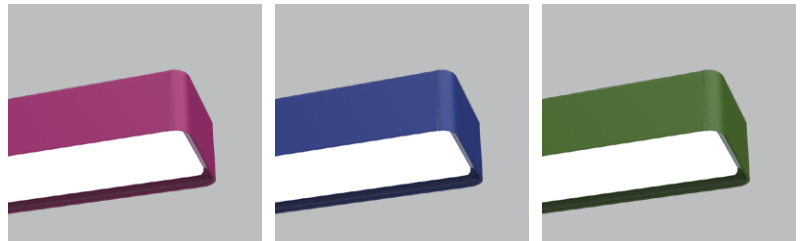
B - Matte black

RAL1028 - Yellow

RAL2004 - Orange

RAL3020 - Red

RAL4010 - Magenta

RAL5002 - Blue

RAL6018 - Green

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

ETL LISTED Intertek

bios   PoE   WELL   WELL

SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

_____

Type: _____

CONSTRUCTION

Housing - Die-cast aluminum ring with light-weight die-cast backplate
Canopy (SCD) - Die-cast aluminum
Canopy (RDB) - Sheet metal
Diffuser - High-Efficiency Lambertian Optic, thermoformed acrylic

UP LIGHT GLOW

Subtle up light glow is emitted at the upper edge of the housing.
Optional acrylic filters add a touch of color.

WHS - White glow
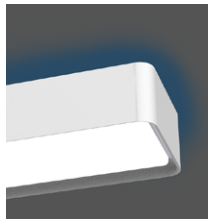
BLS - Blue glow
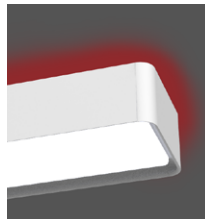
RES - Red glow
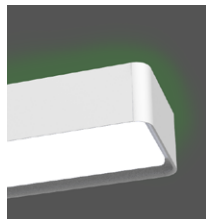
GRS - Green glow
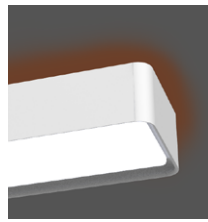
ORS - Orange glow

WEIGHT

SHELP 4' - 7 lbs
SHELP 8' - 14 lbs
SHELP 12' - 20.75 lbs

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

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.

bios   PoE   WELL   WELL

SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

_____

Type: _____

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 fixture

1 x Driver / **50W per side**

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 costs and equipment will be required. ✓

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

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

Lumenwerx reserves the right to modify product specifications without notification.
© Lumenwerx, ULC. All rights reserved.
SHELL-LINEAR-PENDANT-SPEC-REV2   February 14, 2024

Intertek

bios PoE WELL WELL

SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

Type: _____

GENERIC DMX NETWORK ARCHITECTURE

Lumenwerx supplied DMX controller

Network & control by others

(1)

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

(2) Controls J-Box

First DMX enabled fixture
supplied by Lumenwerx **(3)**

DMX IN
DMX OUT

DMX
Driver   Driver
120/277V

Electrical J-Box

2 Wire + Shield
LOW CAP CABLE

(2) Controls J-Box

Next DMX enabled fixture
supplied by Lumenwerx **(3)**

DMX IN
DMX OUT

DMX
Driver   Driver
120/277V

Electrical J-Box

2 Wire + Shield
LOW CAP CABLE

(2) Controls J-Box

Last DMX enabled fixture
supplied by Lumenwerx
max 32 drivers per run **(3)**

DMX IN
DMX OUT

DMX
Driver   Driver
120/277V

Electrical J-Box

(4) 120 OHM
END OF LINE
RESISTOR

ETL LISTED
Intertek

bios   PoE Power over Ethernet   WELL   WELL

SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

Type: _____
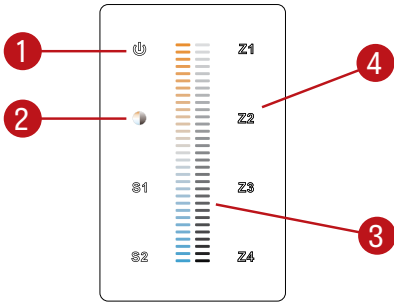

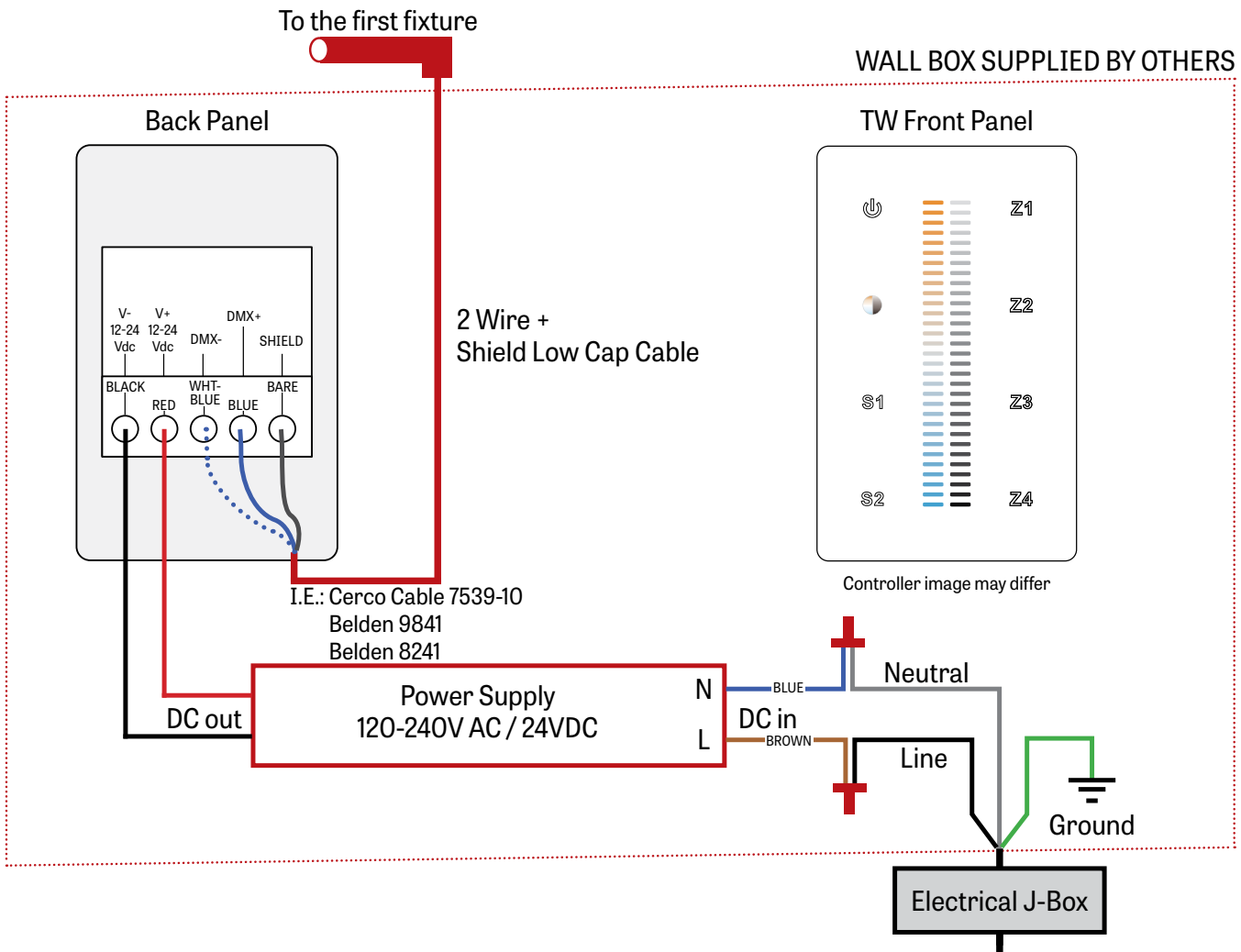## DMX WALL CONTROLLER - TUNABLE WHITE

Default DMX Addresses:

| 1. WARM | 2. COOL |

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.

1 LUMENWERX SUPPLIED DMX CONTROLLER

To the first fixture

WALL BOX SUPPLIED BY OTHERS

Back Panel

TW Front Panel

V-
12-24 Vdc
V+
12-24 Vdc
DMX-
DMX+
SHIELD

BLACK
RED
WHT-BLUE
BLUE
BARE

2 Wire +
Shield Low Cap Cable

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

Controller image may differ

Power Supply
120-240V AC / 24VDC

DC out

N   BLUE   Neutral
DC in
L   BROWN   Line

Ground

Electrical J-Box

ETL LISTED
c US
Intertek

bios   PoE   WELL   WELL
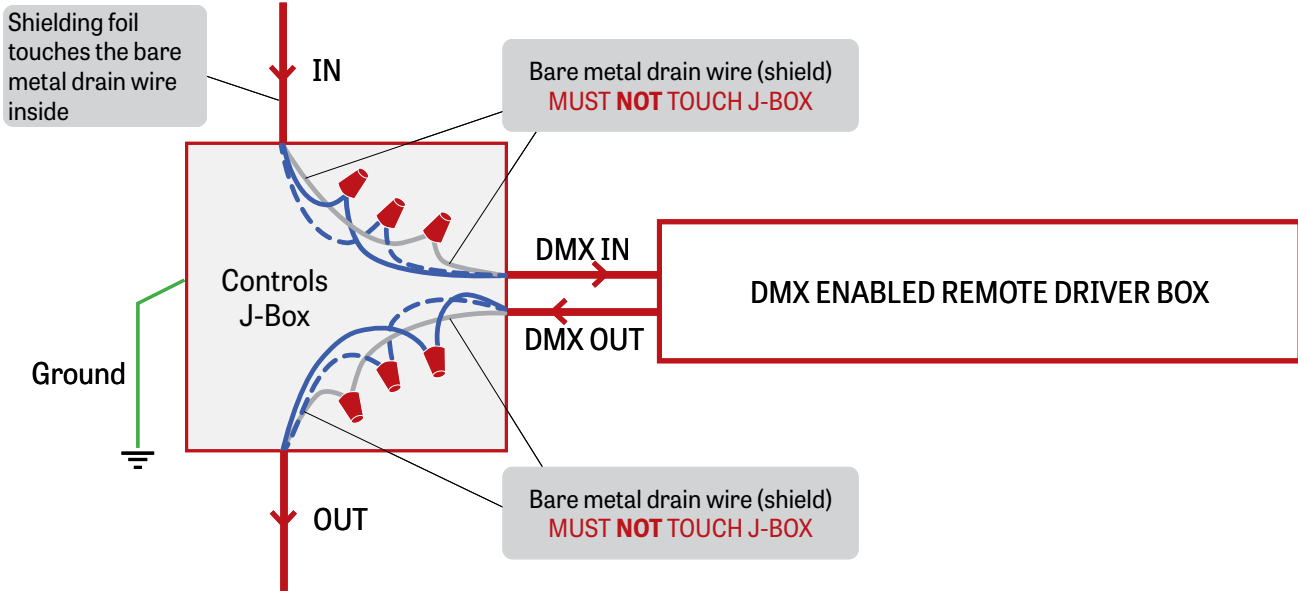
SHELL
LINEAR - PENDANT
STATIC WHITE, BIOS, SOLA, DUO

LUMENWERX

Project: _____

Type: _____

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 OUT

DMX ENABLED REMOTE DRIVER BOX

Ground

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

OUT

Low capacitance DMX cable to next fixture

3   DMX CONNECTION PENDANT & WALL REMOTE DRIVER

DMX

IN   OUT

Shield / DMX - / DMX +   Shield / DMX - / DMX +

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

POWER

LINE VOLTAGE

white / black / green

N   L   G

PWR

LOW VOLTAGE LED OUTPUT

DMX ENABLED REMOTE DRIVER BOX

DMX

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

cETLus LISTED
Intertek

Lumenwerx reserves the right to modify product specifications without notification.
© Lumenwerx, ULC. All rights reserved.
SHELL-LINEAR-PENDANT-SPEC-REV2   February 14, 2024

bios   PoE Power over Ethernet   WELL   WELL