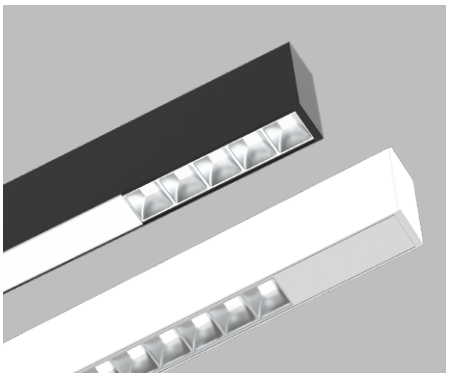
CLUSTERS

SURFACE PARABOLIC COMBINATIONS

Project: _____

Type: _____



CHROMAWERX

DESCRIPTION

Cluster Combinations integrate the Cluster lighting elements into a 1.5" wide x 3.75" high aluminum channel, creating endless possibilities for visually interesting lighting. Parabolic optics in 3-, 5-, or 10-cell configurations and multiple finishes can be arranged in continuous rows or separated by diffusers for general lighting or by blank covers. All LED's used in the combination have consistent color characteristics.
Channel modules are available from 4' to 12' in 1' increments, can be neatly connected together, and install in accessible grid and drywall ceilings. All drivers are mounted in the channel. For configurations other than those shown here, please consult the factory.

We require a drawing illustrating the combination you would like to order - anything from a simple line drawing to elaborate architectural drawings.
Enter the required **TOTAL LUMINAIRE LENGTH**, CRI, Lumens , Color Temperature and Voltage.

Consult pages 2-5 for details before specifying

GENERAL SPECIFICATIONS CODE: CLUCOMSPAR-D-90-PAR

Luminaire ID	Distribution	Total Luminaire Length (MIN 4')				Light Source	CRI	Color Temperature [1]	Voltage
CLUCOMSPAR	D	0	FT	0	IN		90	Choose	Choose

[1] For SW only. Specify NA for SOLA or DUO.

OPTICS	LOUVER FINISH	LIGHT SOURCE
PAR		
PAR - Parabolic	**SPL** - Specular Aluminum Louver **MPL** - Matte Aluminum Louver **WPL** - Matte White Louver **BPL** - Matte Black Louver	**SW** - Static white **SOLA** - Dim to warm single channel control 35K to 22K **DUO** - Tunable white 2 channel control 65K to 27K

OPTICS LIST CODE:

CLUSTER OPTIONS

	Quantity (for actual clusters size see page 2)	Lumen Package Per Unit	LOW	MED	HIGH
☐ **CLU03** - Clusters 3x1		lm	200 lm	365 lm	584 lm
☐ **CLU05** - Clusters 5x1		lm	239 lm	598 lm	957 lm
☐ **CLU10** - Clusters 10x1		lm	474 lm	1185 lm	1896 lm

CONFIGURATION OPTIONS

Optic Length

☐ ***HLO** - High-Efficiency Lambertian Optic — 0 FT — lm/ft — 350 lm-750 lm

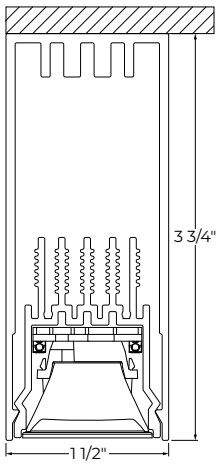
☐ ****BLA** - Blank — 0 FT 0 IN — No minimum length

IMPORTANT

***HLO & CLUSTER CONFIGURATIONS**
1) Minimum individual section 4'
2) Specify in increments of 1'
3) Minimum distance between Clusters is 3'

****BLANK & CLUSTER CONFIGURATIONS**
1) Minimum individual section 4'
2) Minimum distance between Clusters is 2'

CROSS SECTION



ALL OTHER PARTS OF THE CODE:

DRIVER	ELECTRICAL	MOUNTING	FINISH
D1 - 1% 0-10V **ELV** [2] - ELV 120V **TRI** [2] - TRIAC 120V **DA** [3] - DALI **LDE1** [3] - Lutron Hi-lume 1% Eco **ELD1** - eldoLED 1% ECOdrive 0-10V **ELD0** - eldoLED 0.1% SOLOdrive 0-10V [2] Available with 120V only. [3] On-site commissioning is required.	**1** - 1 circuit **2** - 2 circuits **+#EM** - Emergency light circuit **+#NL** - Night light circuit	**GRD** - Grid ceiling **DRC** - Drywall ceiling	**W** - Matte white **B** - Matte black **CF#** - Custom finish, specify RAL#

SOLA
SD1 - Single 0-10V input

DUO
DMX [3] - DMX to specify see pages 6 to 8
DDA [3] - DALI DT6
DDA8 [3] - DALI DT8
DD1 - Dual 0-10V input for CCT/intensity
LD2 [3] - Lutron DALI-2 digital

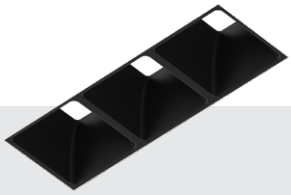
3737 Cote Vertu St-Laurent, Quebec, Canada H4R 2C9
T (514) 225-4304 F (514) 931 -4862
www.lumenwerx.com

CLUSTERS-PARABOLIC-COMBO-SURFACE-SPEC-REV3 November 25, 2024

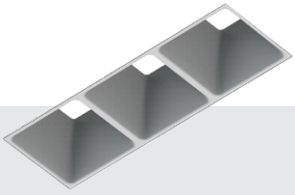
CLUSTERS

SURFACE PARABOLIC COMBINATIONS

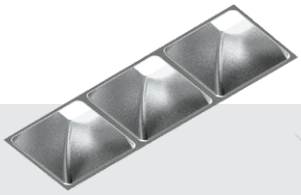
LOUVER OPTIONS



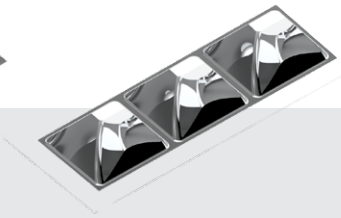
MATTE BLACK



MATTE WHITE

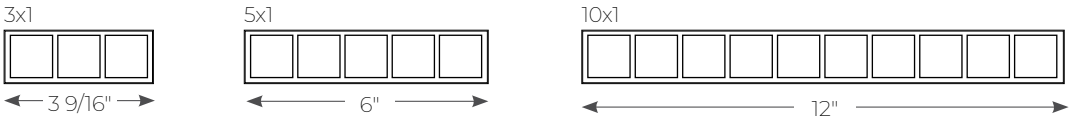


MATTE ALUMINUM



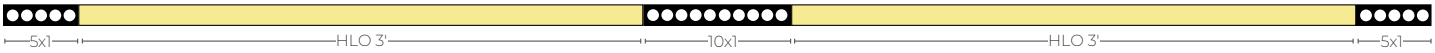
SPECULAR ALUMINUM

AVAILABLE CLUSTER SIZES

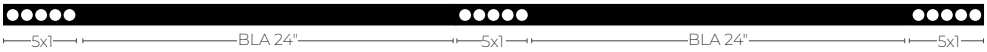


CONFIGURATION WITH CLUSTER DOWNLIGHTS (HLO & BLANK)

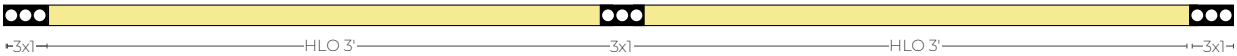
Configuration A - OPTIC CODE: 2xCLU05 - 1x CLU10 - HLO6FT



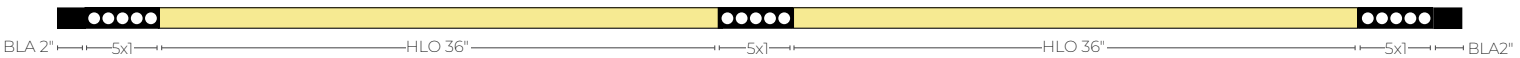
Configuration B - OPTIC CODE: 3xCLU05 -BLA4FT



Configuration C - OPTIC CODE: 3xCLU03 - HLO6FT



Configuration D - OPTIC CODE: 3xCLU05 - HLO6FT - BLA4IN



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

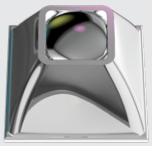
CLUSTERS-PARABOLIC-COMBO-SURFACE-SPEC-REV3 November 25, 2024

LIGHT

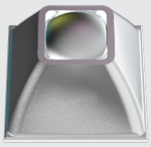
OPTICS

PL -
Parabolic louver

LOUVER FINISH - Louver is injection molded with integral texture and color



SPL -
Specular aluminum



MPL -
Matte aluminum

WPL -
Matte white

BPL -
Matte black

OPTICS

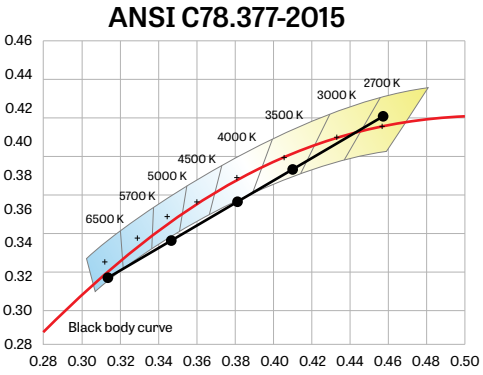
Parabolic Louvers (SPL, MPL, WPL, BPL) - Parabolic louver optics provide excellent shielding and a pleasing crisp visual texture. The precisely molded louvers consist of 1" deep blades and side reflectors with shielding of 50° lengthwise and 45°cross wise.

The parabolic contour of the blades and side reflectors direct light into a comfortable downlight distribution with a spacing criterion of 1.1, while minimizing shadows from the LED array above each cell.
Four finishes are available. Specular aluminum (SPL) provides higher efficacy, sharper cut-off, and an ultra-quiet appearance at shallow viewing angles. matte aluminum (MPL) offers a softer appearance, a wider beam spread, and gentle brightness transition at cut-off. Matte white (WPL) creates the highest louver brightness, while matte black (BPL) provides a dark appearance with slightly reduced beam spread.

LIGHT SOURCE - SW

Custom array of mid-flux LEDs mounted onto aluminum-backed circuitry. Available in 2700K, 3000K, 3500K and 4000K with a minimum 90 CRI with elevated R9 value. Color consistency 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.

LIGHT SOURCE - 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, 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.

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

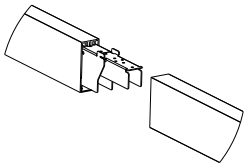
CLUSTERS-PARABOLIC-COMBO-SURFACE-SPEC-REV3 November 25, 2024

CLUSTERS

SURFACE PARABOLIC COMBINATIONS

LUMINAIRE LENGTH

Cluster Combinations is made up of standard 4, 8 and 12 foot sections that may be joined together to create longer continuous run lengths. Exact run length must be noted in the product code. The minimum individual section available is 4 foot.
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.



Joining system

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%.

SD1 (SOLA)

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%.

DD1 (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 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 (DUO only)

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

Fixtures can be mounted directly to T-Bar, drywall and hard surface ceilings, hardware supplied by others. Long runs require a minimum of 6" distance from the vertical wall.

FINISH

Interior - 95%, reflective matte powder coated white paint
Exterior - Matte white or matte black powder coating
Louver - Reflective white or reflective black

CONSTRUCTION

Housing - Extruded aluminum (0.095" nominal) up to 90% recycled content
Interior channel - Extruded aluminum (0.095" nominal) up to 90% recycled content
Joining system - 16 gauge galvanized sheet metal
End caps - Die cast aluminum (0.95" nominal)
Louver optics - Polycarbonate

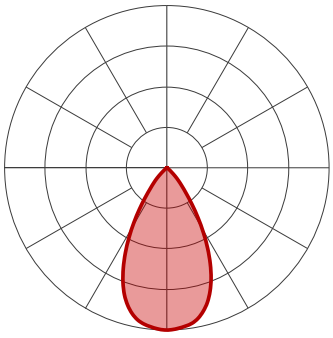
CERTIFICATIONS

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

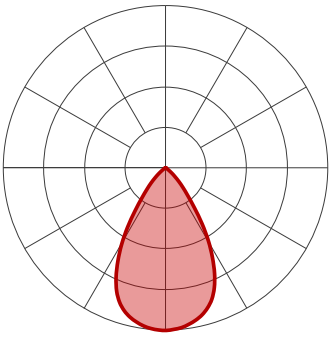
WARRANTY

Lumenwerx provides a five-year limited warranty 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.

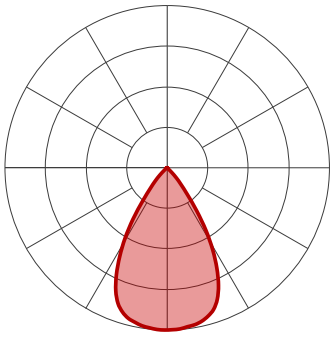
PARABOLIC LOUVERS



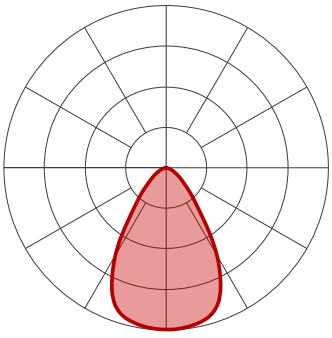
SPL - Specular parabolic louver



MPL - Matte parabolic louver



BPL - Black parabolic louver



WPL - White parabolic louver

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

CLUSTERS-PARABOLIC-COMBO-SURFACE-SPEC-REV3 November 25, 2024

DRIVER

Static white, DUO & SOLA

The driver can power several lighting units, depending on their total power. The minimum and maximum number of lighting units and driver type are shown in the table below and must be observed.

OPTIC MULTIPLIER TABLE

SPL	MPL	BPL	WPL
1	0.853	0.606	0.996

LUMEN PACKAGE [1] (AT 3500K, SPL) Use the optic multiplier table to calculate the lumen package for other optics

LUMINAIRE ID	LUMEN PACKAGE			VOLTAGE	DRIVER		NUMBER OF LIGHTING UNITS PER DRIVER
	LOW	**MEDIUM**	**HIGH**	**120** - 120V	**D1** - 1% 0-10V	**SOLA**	See table below for maximum and minimum possible number of lighting units per each driver.
CLU03	200 lm	365 lm	584 lm	**277** - 277V	**ELV** [2] - ELV 120V	**SD1** - Single 0-10V input	
CLU05	239 lm	598 lm	957 lm	**UNV** - 120V-277V	**TRI** [2] - TRIAC 120V		
CLU10	474 lm	1185 lm	1896 lm		**DA** [3] - DALI	**DUO**	
					LDE1 [3] - Lutron Hi-lume 1% Eco	**DMX** [3,4] - DMX	
					ELD1 - eldoLED 1% ECOdrive 0-10V	**DDA** [3] - DALI DT6	
					ELD0 - eldoLED 0.1% SOLOdrive 0-10V	**DDA8** [3] - DALI DT8	
						DD1 - Dual 0-10V input for CCT/intensity	
						LD2 [3] - Lutron DALI-2 digital	

[2] Available with 120V only.
[3] On-site commissioning is required.
[4] To specify see pages 6 to 8.

[1] Watts and lumen per watts will vary based on the number of lighting units per remote driver as well as on the type of driver selected.

NUMBER OF LIGHTING UNITS PER DRIVER - MINIMUM AND MAXIMUM

Static white	3x1	5x1	10x1
RD1	1-12	1-6	1-3
RELV	1-6	1-3	1
RTRI	1-6	1-3	1
RDA	1-11	1-6	1-3
RLDE1	1-11	1-6	1-3
RELD1	1-11	1-6	1-3
RELD0	1-11	1-6	1-3

For any quantities of lighting units per driver that fall outside the minimum and maximum listed above, please consult factory.

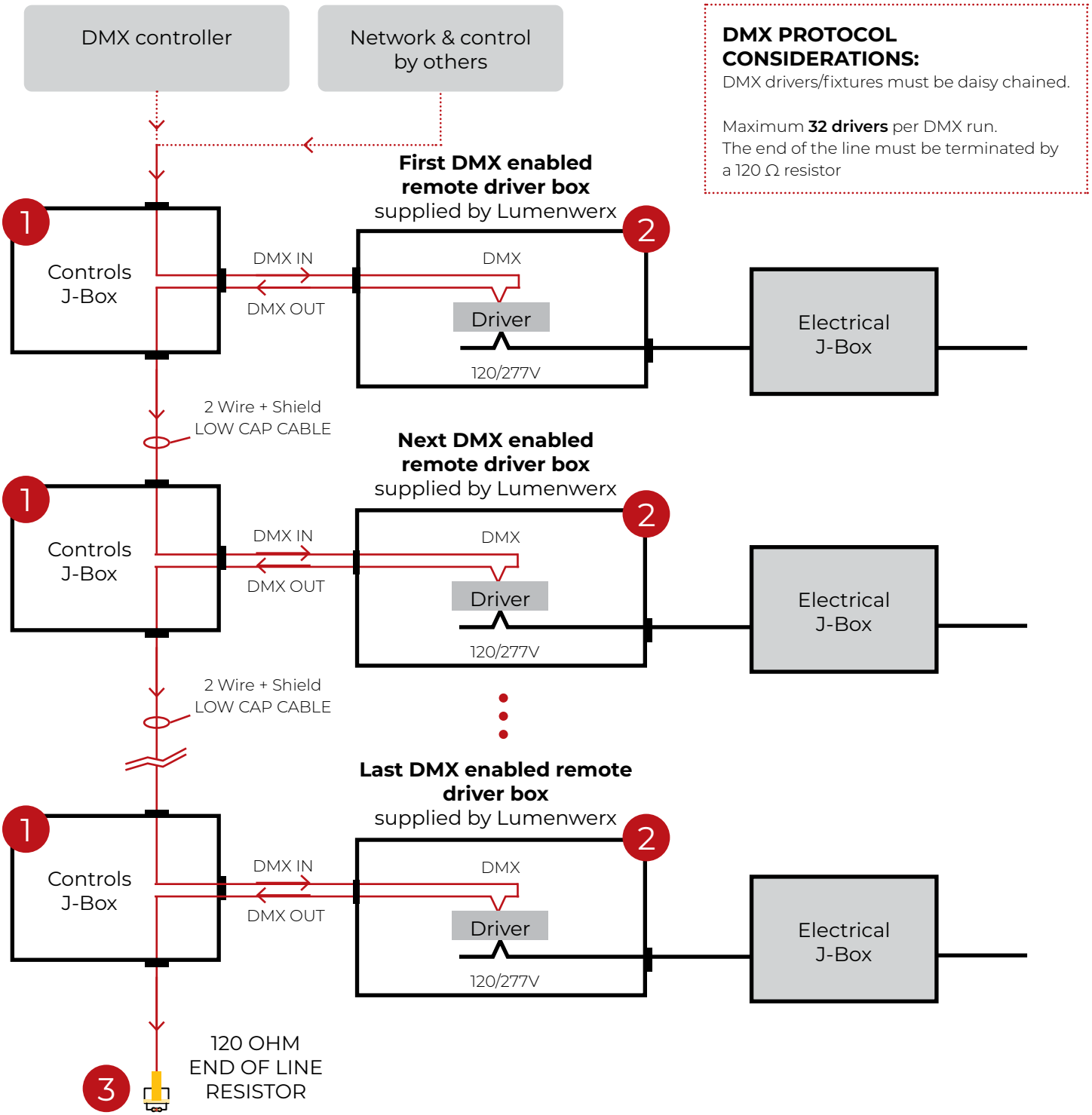
SOLA	3x1	5x1	10x1
RSD1	1-7	1-4	1-2

DUO	3x1	5x1	10x1
RDMX	1-7	1-4	1-2
RDDA	1-7	1-4	1-2
RDDA8	1-7	1-4	1-2
RDD1	1-7	1-4	1-2
RLD2	2-7	1-4	1-2

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

DUO GENERIC DMX NETWORK ARCHITECTURE

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.**

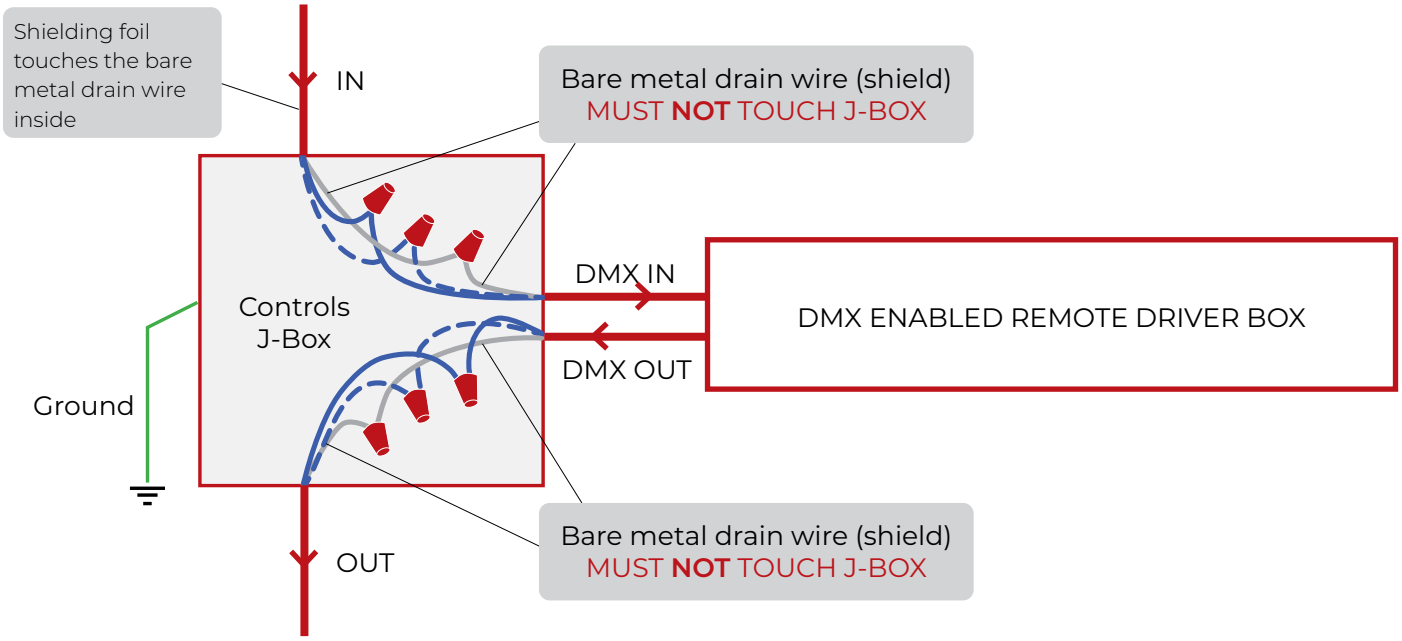


3737 Cote Vertu St-Laurent, Quebec, Canada H4R 2C9
T (514) 225-4304 F (514) 931 -4862
www.lumenwerx.com

CLUSTERS-PARABOLIC-COMBO-SURFACE-SPEC-REV3 November 25, 2024

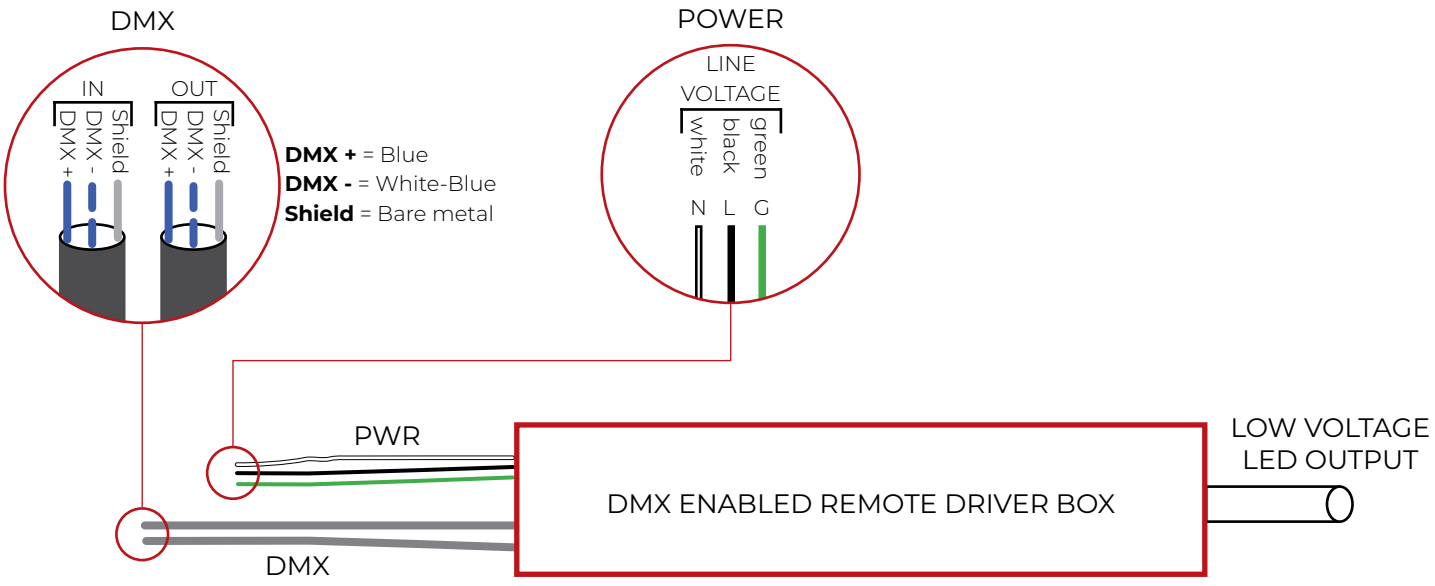
1 J-BOX DMX DAISY CHAIN DETAIL

Low capacitance DMX cable from previous fixture



Low capacitance DMX cable to next fixture

2 DMX CONNECTION REMOTE DRIVER

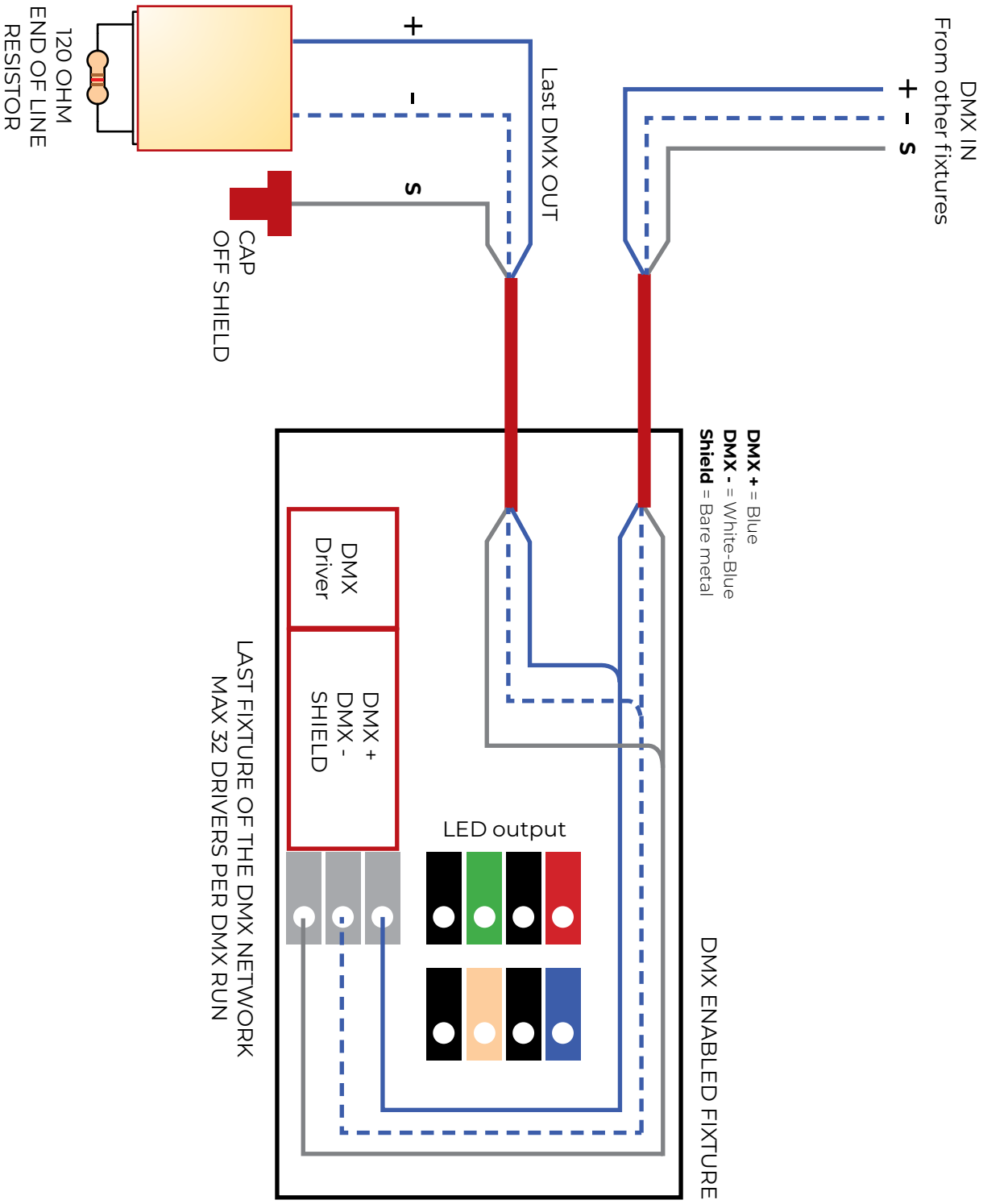


3737 Cote Vertu St-Laurent, Quebec, Canada H4R 2C9
T (514) 225-4304 F (514) 931 -4862
www.lumenwerx.com

CLUSTERS-PARABOLIC-COMBO-SURFACE-SPEC-REV3 November 25, 2024

Lumenwerx

3 LAST DMX CONNECTION DETAIL



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

CLUSTERS-PARABOLIC-COMBO-SURFACE-SPEC-REV3 November 25, 2024