

# CLUSTER

## PENDANT PLANAR PARABOLIC

### DESCRIPTION

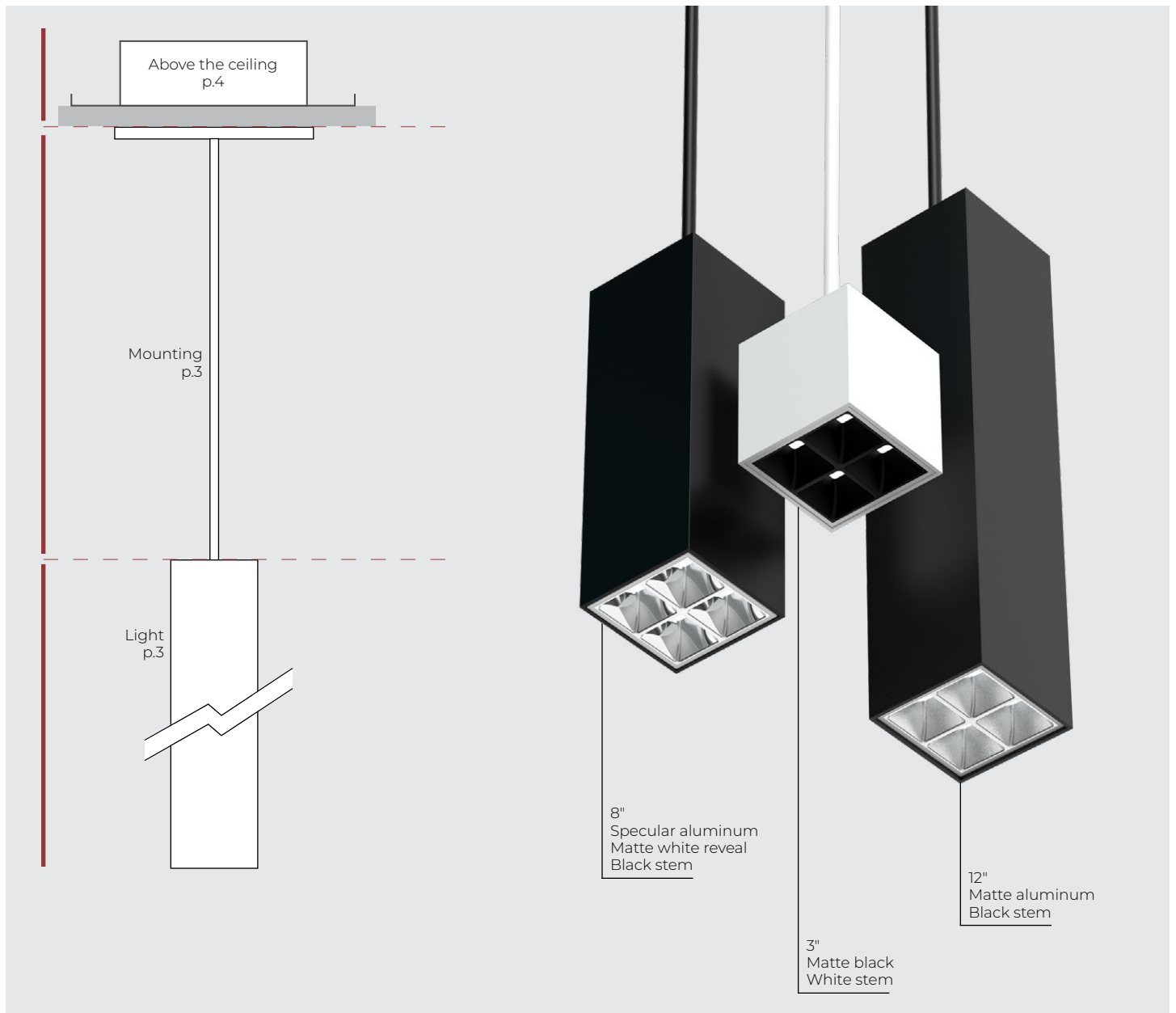
Cluster is the precise, and scalable family of downlights, wall washers, and adjustables, available in both linear and planar configurations and for recessed, pendant, and surface mounting. Based on a fundamental 1.2" square cell, Cluster delivers lighting that is optically sophisticated and aesthetically refined. Cluster pendant planar parabolic downlights is available in 2x2 cell configurations, all with precision optics that eliminate multiple shadows, as well as subtle louver treatments. Surface downlights fit a choice of 3", 8" or 12" deep cuboid enclosures. Nominal light output is 200 lumens per cell. With our remote driver, Chromawerx Duo and Sola are available for tunable white lighting control. Pendant Cluster can be suspended using stems. A canopy for conduit connection is available. Driver is either integral or remote, which is capable of powering multiple luminaires.

## LUMENWERX

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

TYPE: \_\_\_\_\_

NOTES: \_\_\_\_\_



# CLUSTER

## PENDANT PLANAR PARABOLIC

# LUMENWERX

## LIGHT + MOUNTING

Consult pages 3-4 for details before specifying

CLUP22				
LUMINAIRE ID	CUBOID HEIGHT	CUBOID FINISH	LOUVER FINISH	REVEAL FINISH
CLUP22 - Cluster Pendant 2x2	3 - 3" 8 - 8" 12 - 12"	TMW - Textured matte white TMB - Textured matte black CF# - Custom finish, specify RAL#	SPL - Specular Aluminum Louver MPL - Matte Aluminum Louver WPL - Matte White Louver BPL - Matte Black Louver	TMW - Textured matte white TMB - Textured matte black CF# - Custom finish, specify RAL#

	PAR	90					
LIGHT SOURCE	OPTIC	CRI	COLOR TEMP. <sup>2</sup>	DRIVER	VOLTAGE	LUMEN PACKAGE <sup>3</sup>	DIMMING
SW - Static white  DUO <sup>1</sup> - Tunable white 2 channel control 65K to 27K SOLA <sup>1</sup> - Dim-to-warm single channel control 35K to 22K  <sup>1</sup> Available with remote driver only.	PAR - Parabolic	90 - 90 CRI	27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K NA - Not applicable  <sup>2</sup> Specify NA with DUO or SOLA.	INTEGRAL	120 - 120V 277 - 277V	735 - 735 lm (CLUP22)  <sup>3</sup> Lumen packages shown at 3500K, with SPL. For other, see lumen output multipliers on page 5.	D1 - 1% 0-10V ELV <sup>4</sup> - ELV 120V TRI <sup>4</sup> - TRIAC 120V  <sup>4</sup> Available with 120V only.
				REMOTE	FOR FULL REMOTE DRIVER SPECIFICATION, SEE "REMOTE DRIVER" SECTION BELOW.		

CANOPY TYPE	CANOPY FINISH	HANGER	
REG <sup>5</sup> - 4" octagonal junction box INT <sup>6</sup> - Integral driver on junction box CD <sup>7</sup> - Conduit box  <sup>5</sup> Available with remote driver only. <sup>6</sup> Available with integral driver only. <sup>7</sup> Available with remote and integral driver. <sup>8</sup> Available with static white only.	TMW - Textured matte white TMB - Textured matte black CF# - Custom finish, specify RAL#	STEM <sup>9</sup>  WHS - Textured white stem BKS - Textured black stem  <sup>9</sup> Min 18" - max 48".	LENGTH  #IN - Length in inches

## 2 - REMOTE DRIVER OPTIONAL

Consult page 4 for details before specifying

Continue here for full remote driver specifications. Remote driver can be ordered separately.

		CLUP22			
REMOTE DRIVER <sup>10</sup>	LUM. QTY. <sup>11</sup>	LUM. ID	VOLTAGE	LUMEN PACKAGE <sup>12</sup>	DIMMING <sup>13</sup>
RDB# - Remote driver  <sup>10</sup> If multiple driver boxes needed, specify a line number for each driver type used. (e.g. RDB1-6X-CLUP22-...-RD1 RDB2-2X-CLUP22-...-RD1 ...)	#X - Number of luminaires  <sup>11</sup> Specify number of luminaires per remote driver. (e.g. 3X)	CLUP22 - Cluster Pendant 2x2	120 - 120V 277 - 277V UNV - 120V-277V	### - Low 184 lm - Med 460 lm - High 735 lm (CLUP22)  <sup>12</sup> Watts and lumen per watts will vary based on the number of light units per remote driver as well as on the type of driver selected.	STATIC WHITE RD1 - 1% 0-10V RDA <sup>14</sup> - DALI RLTEA2W <sup>15</sup> - Lutron 1% - 2 wire FP 120V RLDE1 <sup>14</sup> - Lutron Hi-lume 1% Eco  <sup>13</sup> For configurations involving different cluster sizes on a remote driver, please consult factory. <sup>14</sup> On-site commissioning is required. <sup>15</sup> Available with 120V only.  DUO RDMX <sup>16</sup> - DMX, to specify see pages 7 to 9 RDA <sup>14</sup> - DALI RDD1 - Dual 0-10V input for CCT/Intensity  SOLA RSD1 - Single 0-10V input

## EXAMPLE ORDER CODES

WHEN SPECIFYING WITH INTEGRAL DRIVER	
LIGHT + MOUNTING	CLUP22-3-TMW-SPL-TMW-SW-PAR-90-35-INTEGRAL-120-735-D1-INT-TMW-WHS-18IN
REMOTE DRIVER	N/A

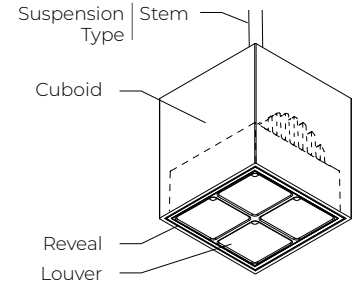
WHEN SPECIFYING WITH REMOTE DRIVER <sup>16</sup>	
LIGHT + MOUNTING	CLUP22-3-TMW-SPL-TMW-SW-PAR-90-35-REMOTE-REG-TMW-WHS-18IN
REMOTE DRIVER	RDB1-6X-CLUP22-120-460-RD1 RDB2-2X-CLUP22-120-460-RD1

<sup>16</sup> When specifying with multiple remote driver boxes, each driver used needs to be on a separate line and be numbered for the ordering codes.

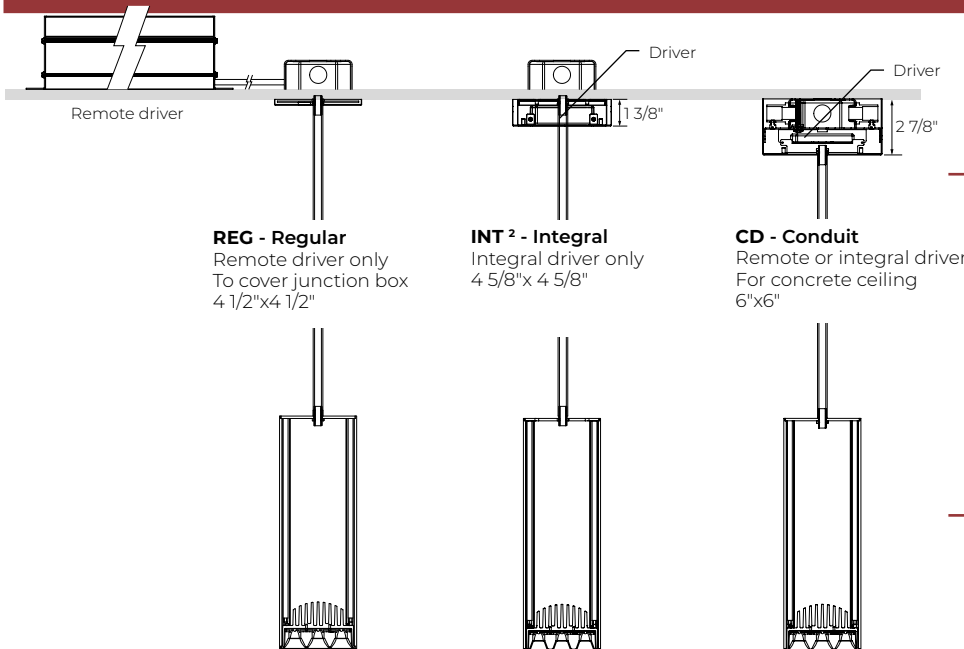
## LIGHT

### OPTICS

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



## MOUNTING <sup>1</sup>



### CANOPY

Regular **REG**  
Integral **INT**  
Conduit **CD**

### Finish

Textured matte white **TMW**  
Textured matte black **TMB**  
Custom finish **CF#**

### HANGER

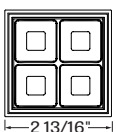
Stem  
Textured white stem **WHS**  
Textured black stem **BKS**

**Stem**  
Min 18" - max 48"  
#IN specify length <sup>2</sup>

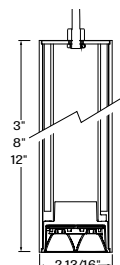
<sup>1</sup> Canopies can be specified with any suspension type. Not interchangeable on site.

<sup>2</sup> To specify, replace # with requested length. (e.g. 18IN)

### BOTTOM VIEW



### CROSS SECTION



See linear  
spec sheet for more sizes

## DRIVER

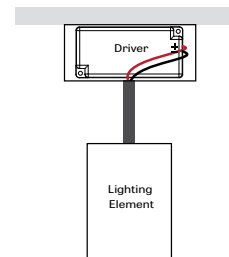
### INTEGRAL CANOPY DRIVER STATIC WHITE ONLY

The integral driver is sized to the lighting element and is connected directly with Class 2 wiring and quick-splice connectors. The driver is accessible for service through the canopy.

#### MULTIPLIER

LUMEN PACKAGE MULTIPLIER PER OPTIC

2700K				3000K				3500K				4000K			
SPL	MPL	BPL	WPL	SPL	MPL	BPL	WPL	SPL	MPL	BPL	WPL	SPL	MPL	BPL	WPL
0.94	0.81	0.58	0.94	0.97	0.83	0.6	0.97	1	0.86	0.62	1	1.02	0.88	0.63	1.02



LUMEN PACKAGE (AT 3500K, SPL) - INTEGRAL DRIVER

LUMINAIRE ID	LUMEN OUTPUT	WATTS	EFFICACY LM/W
CLUP22	735 lm	9.5 W	78 lm/W

LUMEN PACKAGE	VOLTAGE	INTEGRAL DRIVER
Use the multiplier tables to calculate the lumen package	120 - 120V 277 - 277V	D1 - 1% 0-10V ELV <sup>1</sup> - ELV 120V TRI <sup>1</sup> - TRIAC 120V  <sup>1</sup> Available with 120V only.

### REMOTE DRIVER STATIC WHITE, DUO & SOLA

The remote driver can power several lighting elements, depending on their total power. The minimum and maximum number for each lighting element and driver type are shown in the table below and must be observed. The remote driver and lighting elements are wired together through connection boxes, which are furnished pre-wired to the driver enclosure. All wiring is Class 2 with quick-splice connectors. The remote driver requires access from above the ceiling (or an access panel).

#### OPTIC MULTIPLIER TABLE

SPL	MPL	BPL	WPL
1	0.853	0.606	0.996

LUMEN PACKAGE<sup>1</sup> (AT 3500K, SPL) - REMOTE DRIVER

Use the optic multiplier table to calculate the lumen package for other optics

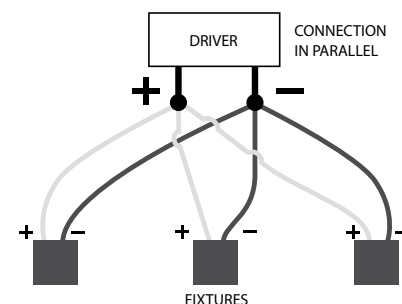
LUMINAIRE ID	LUMEN PACKAGE			VOLTAGE	REMOTE DRIVER	NUMBER OF LIGHTING UNITS PER DRIVER
CLUP22	LOW 184 lm	MEDIUM 460 lm	HIGH 735 lm	120 - 120V 277 - 277V UNV - 120V-277V	<b>STATIC WHITE</b> RD1 - 1% 0-10V RDA <sup>2</sup> - DALI RLTEA2W <sup>3</sup> - Lutron 1% - 2 wire FP 120V RLDE1 <sup>2</sup> - Lutron Hi-lume 1% Eco  <sup>2</sup> On-site commissioning is required. <sup>3</sup> Available with 120V only.  <b>DUO</b> RDMX <sup>2</sup> - DMX, to specify see pages 7 to 9 RDA <sup>2</sup> - DALI RDD1 - Dual 0-10V input for CCT/intensity  <b>SOLA</b> RSD1 - Single 0-10V input	See table below for maximum and minimum possible number of lighting units per each driver.  For configurations involving different cluster sizes on a remote driver, please consult factory.

<sup>1</sup> 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

DRIVER TYPE	CLUP22
<b>SW</b>	
D1 - 1% 0-10V	1-6
DA - DALI	1-6
LTEA2W - Lutron 1% - 2 wires FP 120V	1-4
LDE1 - Lutron Hi-lume 1% Eco	1-6
<b>DUO</b>	
DMX - DMX	2-4
DA - DALI	2-3
DD1 - Dual 0-10V input for CCT/intensity	2-4
<b>SOLA</b>	
SD1 - Single 0-10V input	2-4

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



## Technical Specifications

### 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

#### Static White

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.

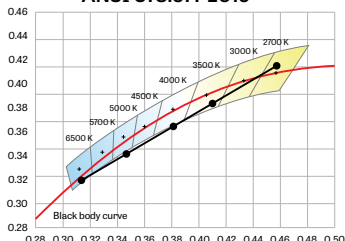
#### Chromawerx SOLA

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) 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 color warm (2700K) 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.

#### ANSI C78.377-2015



### ELECTRICAL

#### SOLA

##### SDI

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%.

#### DUO

##### DMX

Factory-set adjustable output current electronic driver with 120-277V AC 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 120-277V AC 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. 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%.

##### DDI

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.

# CLUSTER

PENDANT PLANAR PARABOLIC

LUMENWERX

WEIGHT

	BODY		CUBOID 3"		CUBOID 8"		CUBOID 12"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
CLUP22	0.70	0.30	0.38	0.17	0.87	0.40	1.27	0.58

CONSTRUCTION

**Housing** - Die-cast aluminum (0.95" nominal)  
**Optics** - Polycarbonate  
**Cuboid** - Aluminum extrusion  
**Cover pendant** - 18 gauge aluminum sheet  
**Extension bar** - Galvanized steel

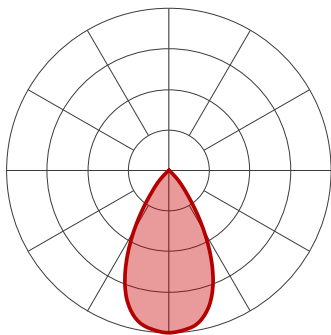
CERTIFICATIONS

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

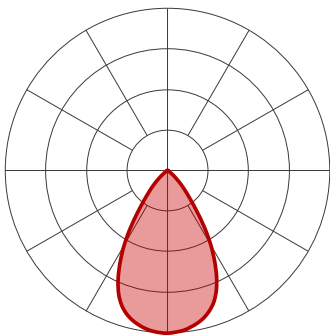
WARRANTY

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.

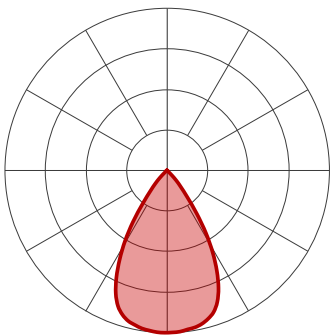
PARABOLIC LOUVERS



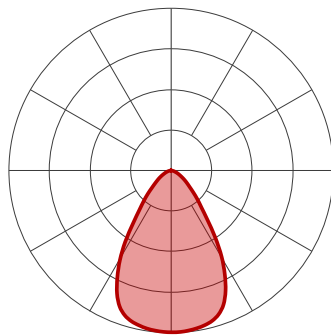
SPL - Specular Parabolic Louver



MPL - Matte Parabolic Louver



BPL - Black Parabolic Louver

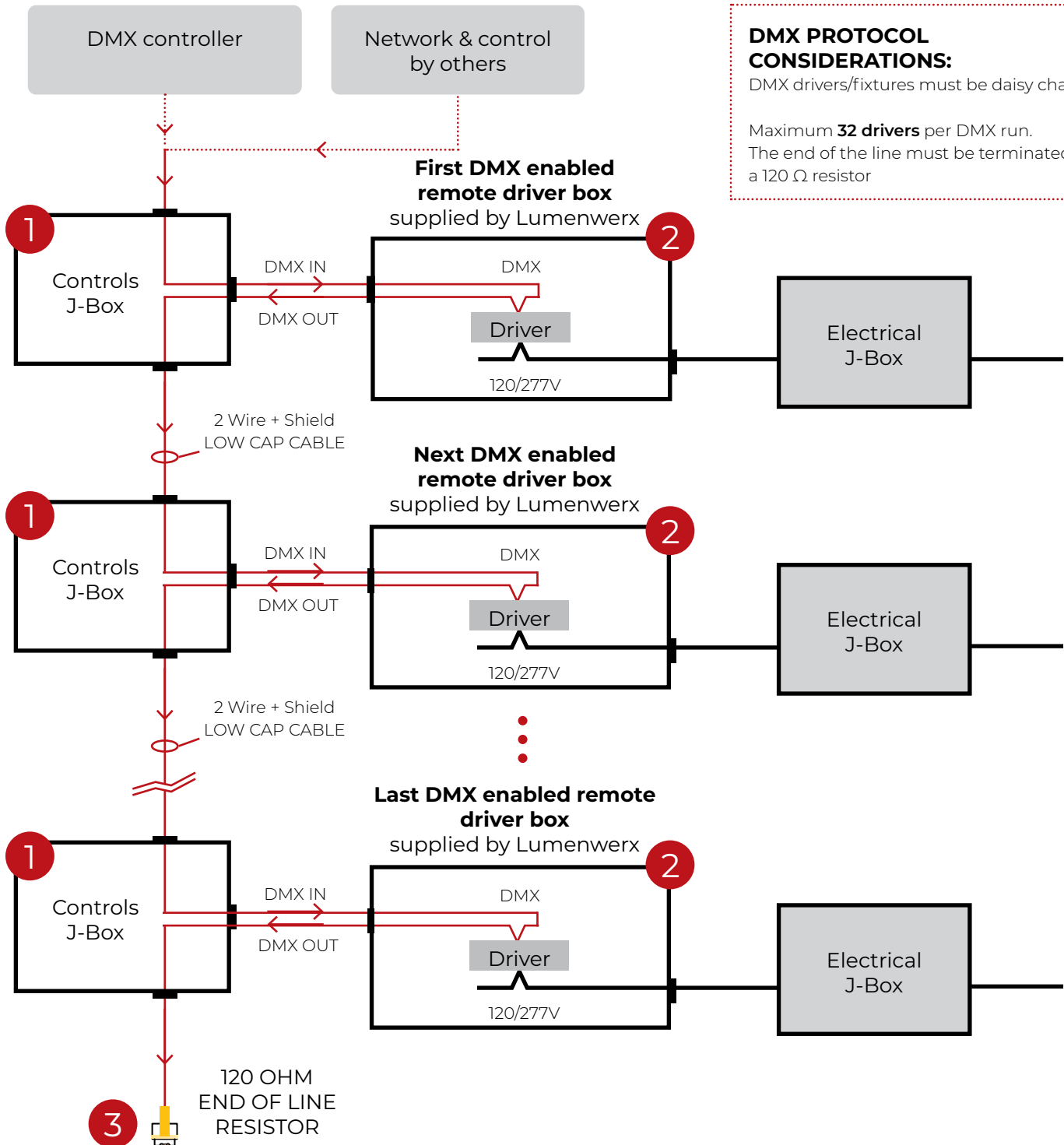


WPL - White Parabolic Louver

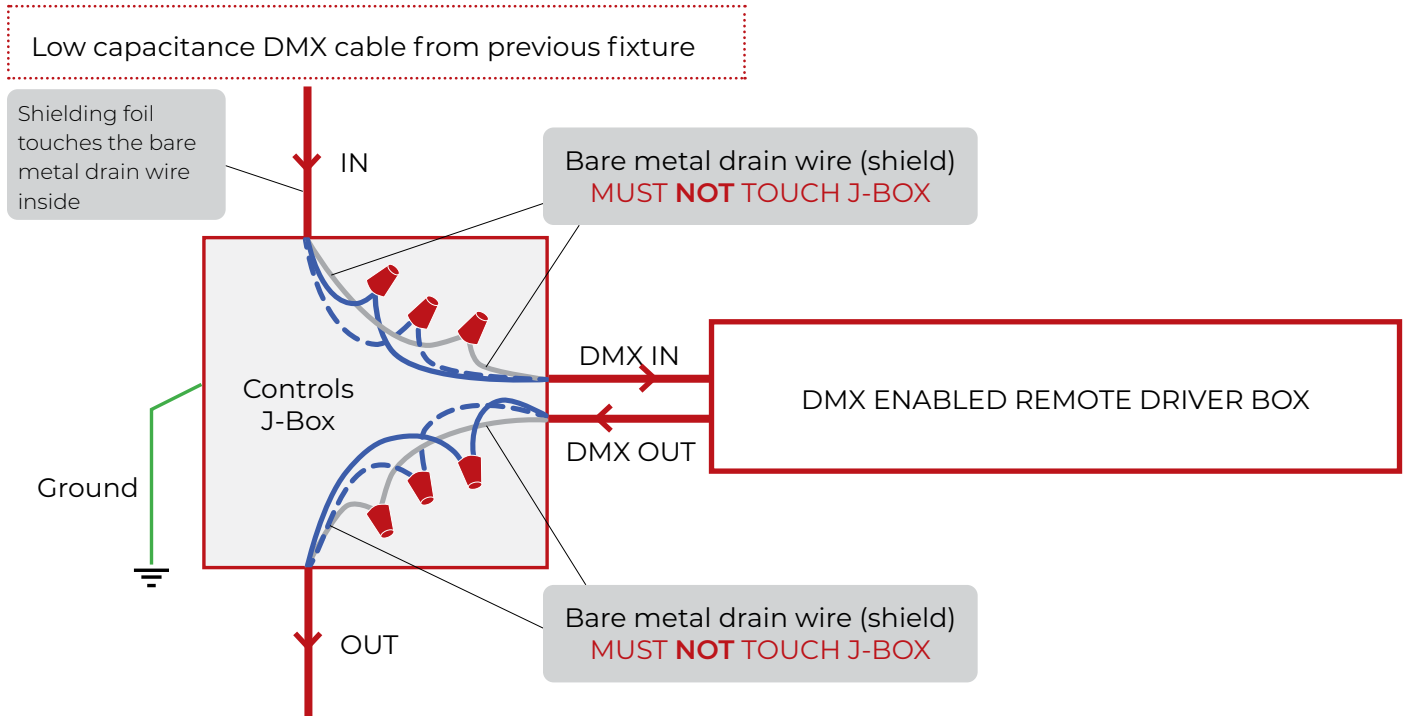


**DUO** GENERIC DMX NETWORK ARCHITECTURE

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.**

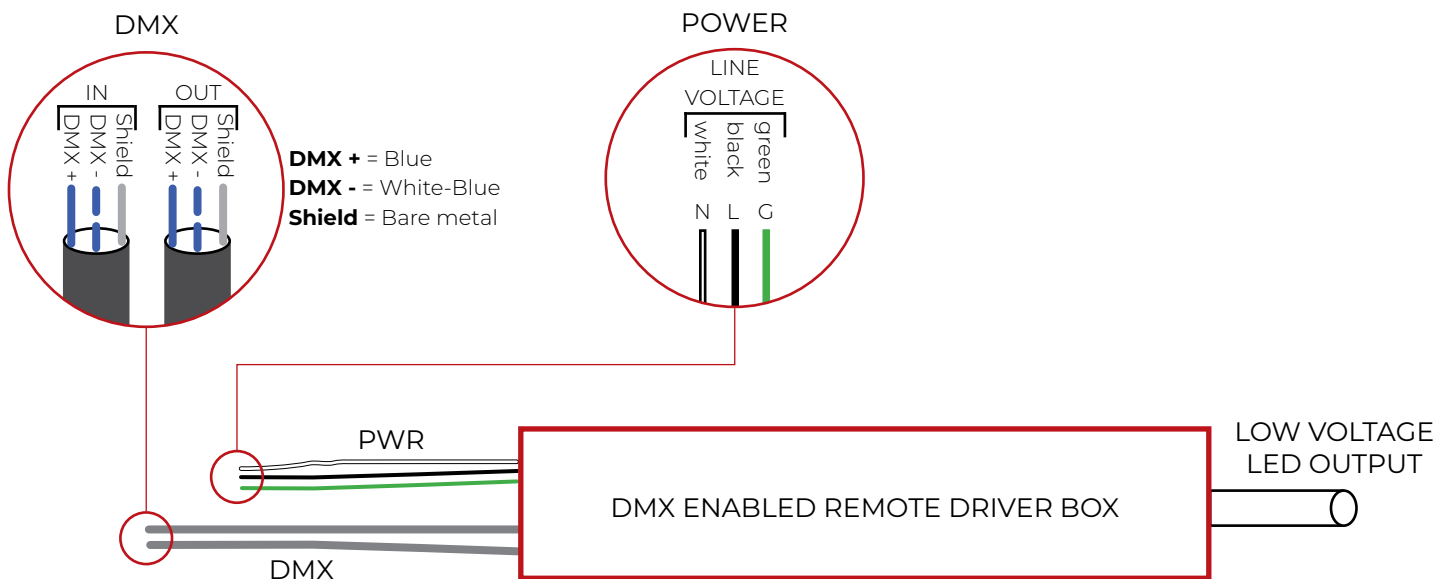


## 1 J-BOX DMX DAISY CHAIN DETAIL



Low capacitance DMX cable to next fixture

## 2 DMX CONNECTION REMOTE DRIVER





3 LAST DMX CONNECTION DETAIL

