

CLUSTER

SURFACE PLANAR PARABOLIC

DESCRIPTION

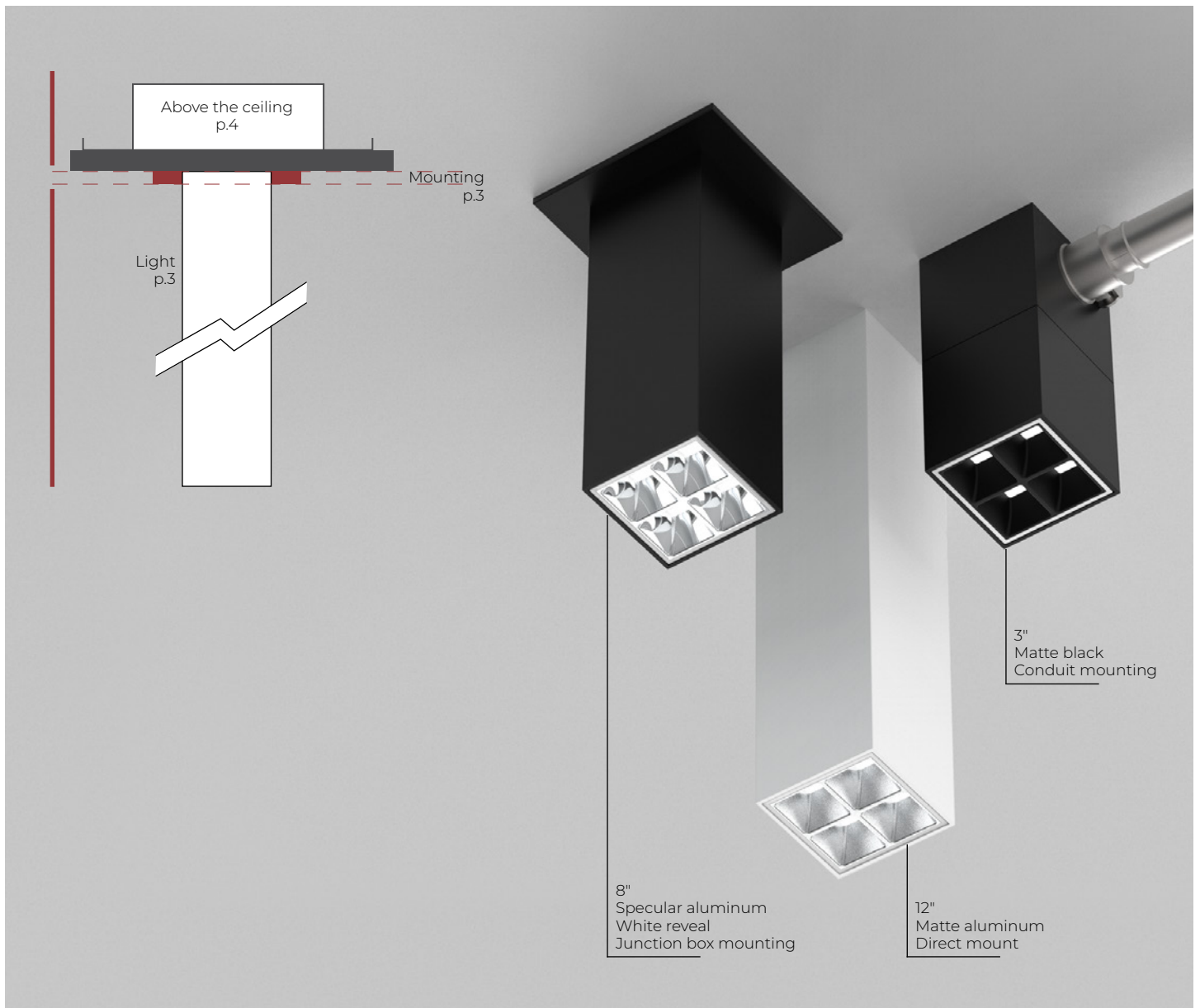
Cluster is the precise, and scalable family of downlights, wall washers, and adjustables, available in both linear and planar configurations and for recessed, pendant, and surface mounting. Based on a fundamental 1.2" square cell, Cluster deliver lighting that is optically sophisticated and aesthetically refined. Cluster surface planar parabolic downlights are 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. Surface Cluster mount using a choice of direct mount, junction box with canopy, and conduit feed with splice enclosure. Driver is either integral or remote, which is capable of powering multiple luminaires.

LUMENWERX

PROJECT: _____

TYPE: _____

NOTES: _____



LIGHT

Consult pages 3-4 for details before specifying

CLUS22					
LUMINAIRE ID	CUBOID HEIGHT ¹	CUBOID FINISH	LOUVER FINISH	REVEAL FINISH	LIGHT SOURCE
CLUS22 - Clusters Surface 2x2	3 - 3" 8 - 8" 12 - 12" ¹ Conduit mounting option will add 3" to total height.	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#	SW - Static white DUO - Tunable white 2 channel control 65K to 27K SOLA - Dim to warm single channel control 35K to 22K

PAR	90		REMOTE		
OPTIC	CRI	COLOR TEMP. ²	DRIVER	MOUNTING TYPE	J-BOX PLATE & CONDUIT FINISH
PAR - Parabolic	90 - 90 CRI	27 - 2700K 30 - 3000K 35 - 3500K 40 - 4000K NA - Not applicable ² Specify NA with DUO or SOLA.	REMOTE - Remote driver FOR FULL REMOTE DRIVER SPECIFICATION, SEE "REMOTE DRIVER" SECTION BELOW.	DM - Direct mount JB - Junction box CD - Conduit box	TMW - Textured matte white TMB - Textured matte black CF# - Custom finish, specify RAL#

REMOTE DRIVER OPTIONAL

Consult page 4 for details before specifying

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

		CLUS22			
REMOTE DRIVER ³	LUM. QTY. ⁴	LUM. ID	VOLTAGE	LUMEN PACKAGE ⁵	DIMMING ⁶
RDB# - Remote driver ³ If multiple driver boxes needed, specify a line number for each driver type used. (e.g. RDB1-4X-CLUS22-...-RD1 RDB2-2X-CLUS22-...-RD1 ...)	#X - Number of luminaires ⁴ Specify number of luminaires per remote driver. (e.g. 3X)	CLUS22 - Clusters Surface 2x2	120 - 120V 277 - 277V UNV - 120V-277V	### - Low 184 lm - Med 460 lm - High 735 lm (CLUS22) ⁵ 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.	STATIC WHITE RDI - 1% 0-10V RDA ⁷ - DALI RLTEA2W ⁸ - Lutron 1% - 2 wire FP 120V RLDEI ⁷ - Lutron Hi-lume 1% Eco ⁶ For configurations involving different clusters sizes on a remote driver, please consult factory. ⁷ On-site commissioning is required. ⁸ Available with 120V only. DUO RDMX ⁷ - DMX, to specify see pages 7 to 9 RDA ⁷ - DALI RDDI - Dual 0-10V input for CCT/Intensity SOLA RSDI - Single 0-10V input

EXAMPLE ORDER CODES

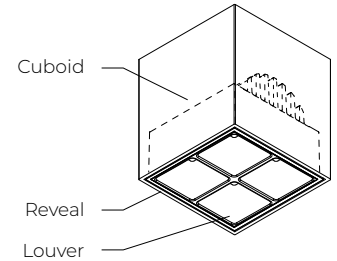
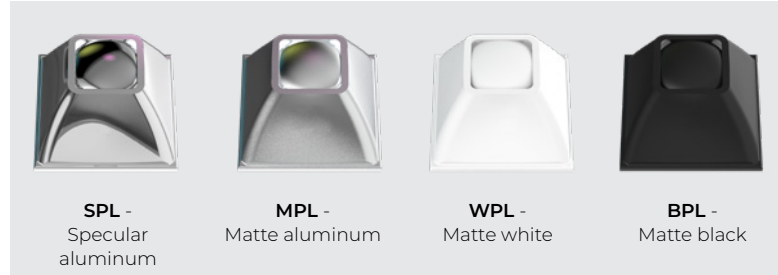
WHEN SPECIFYING WITH REMOTE DRIVER ⁸	
LIGHT	CLUS22-3-TMW-PAR-SPL-TMW-SW-CRI90-35-REMOTE-DM-TMW
REMOTE DRIVER	Remote driver 1: RDB1-6X-CLUS22-120-460-RD1 Remote driver 2: RDB2-2X-CLUS22-120-460-RD1

⁸ When specifying with multiple remote driver boxes, each driver used needs to be on a separate line and be numbered for the ordering codes.

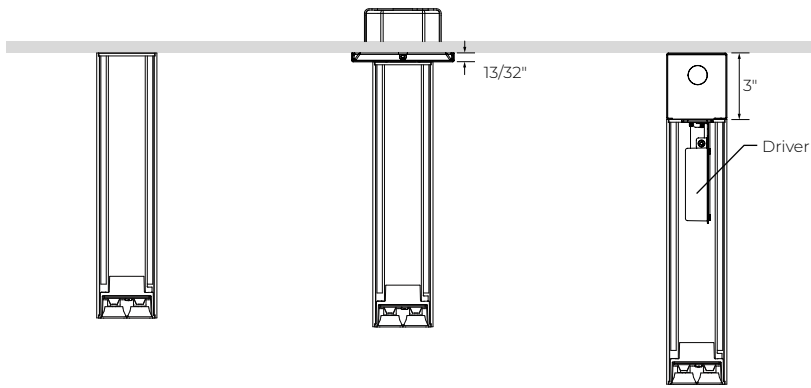
LIGHT

OPTICS

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



MOUNTING



MOUNTING TYPE

Direct mount	DM
Junction box	JB
Conduit	CD

JUNCTION BOX PLATE & CONDUIT FINISH

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

DM - Direct Mount

JB - Junction Box
To be attached on a hexagonal junction box

CD - Conduit
For concrete ceiling
Add 3" to the cuboid length

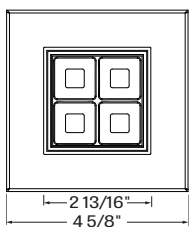
Junction box is covered by the junction box plate

BOTTOM VIEW

CLUS22 - Direct mount

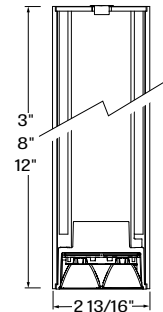


CLUS22 - Junction box



CROSS SECTION

CLUS22



See linear spec sheet for more sizes

DRIVER

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 PACKAGE¹ (AT 3500K, SPL) - REMOTE DRIVER

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

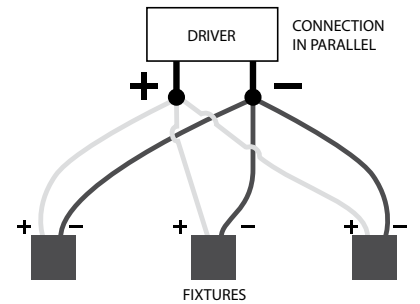
LUMINAIRE ID	LUMEN PACKAGE			VOLTAGE	REMOTE DRIVER	NUMBER OF LIGHTING UNITS PER DRIVER
CLUS22	LOW 184 lm	MEDIUM 460 lm	HIGH 735 lm	120 - 120V 277 - 277V UNV - 120V-277V	STATIC WHITE RDI - 1% 0-10V RDA ² - DALI RLTEA2W ³ - Lutron 1% - 2 wire FP 120V RLDEI ² - Lutron Hi-Lume 1% Eco ² On-site commissioning is required. ³ Available with 120V only.	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.
				DUO RDMX ² - DMX, to specify see pages 7 to 9 RDA ² - DALI RDDI - Dual 0-10V input for CCT/Intensity SOLA RSDI - Single 0-10V input		

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

DRIVER TYPE	CLUS22
SW	
DI - 1% 0-10V	1-6
DA - DALI	1-6
LTEA2W - Lutron 1% - 2 wires FP 120V	1-4
LDEI - Lutron Hi-Lume 1% Eco	1-6
DUO	
DMX - DMX	2-4
DA - DALI	2-3
DDI - Dual 0-10V input for CCT/Intensity	2-4
SOLA	
SDI - 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

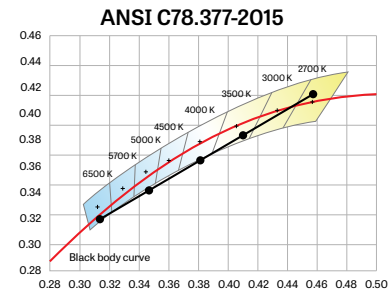
Custom array of mid-flux LEDs mounted onto aluminum-backed circuitry. Available in 2700K, 3000K, 3500K and 4000K with a minimum 90 CRI with elevated R9 value. Color consistency is maintained to within 3 SDCM. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen 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 and PSQ) 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.



ELECTRICAL

SOLA

SD1

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, 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

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%.

DD1

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

SURFACE PLANAR PARABOLIC

WEIGHT

	BODY		CUBOID 3"		CUBOID 8"		CUBOID 12"	
	Lb	Kg	Lb	Kg	Lb	Kg	Lb	Kg
CLUS22	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 surface** - 16 gauge galvanized steel
- Extension bar** - Galvanized steel

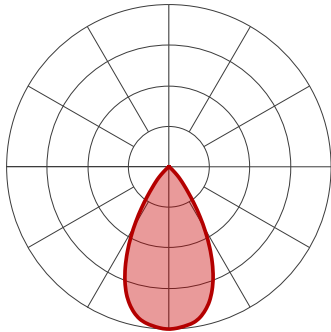
CERTIFICATIONS

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

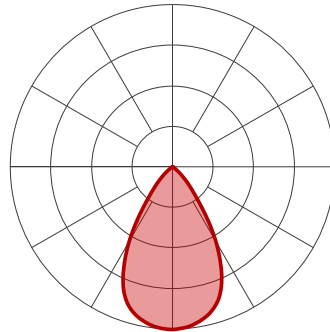
WARRANTY

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.

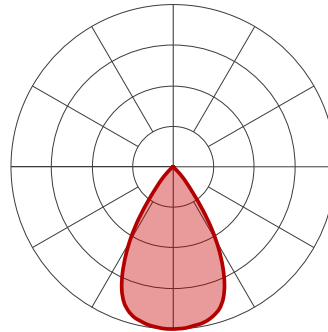
PARABOLIC LOUVERS



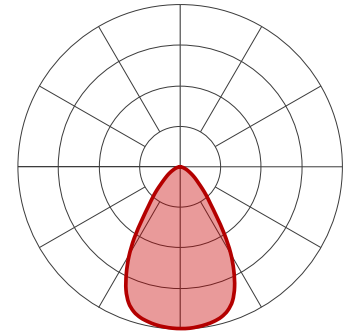
SPL - Specular parabolic louver



MPL - Matte parabolic louver



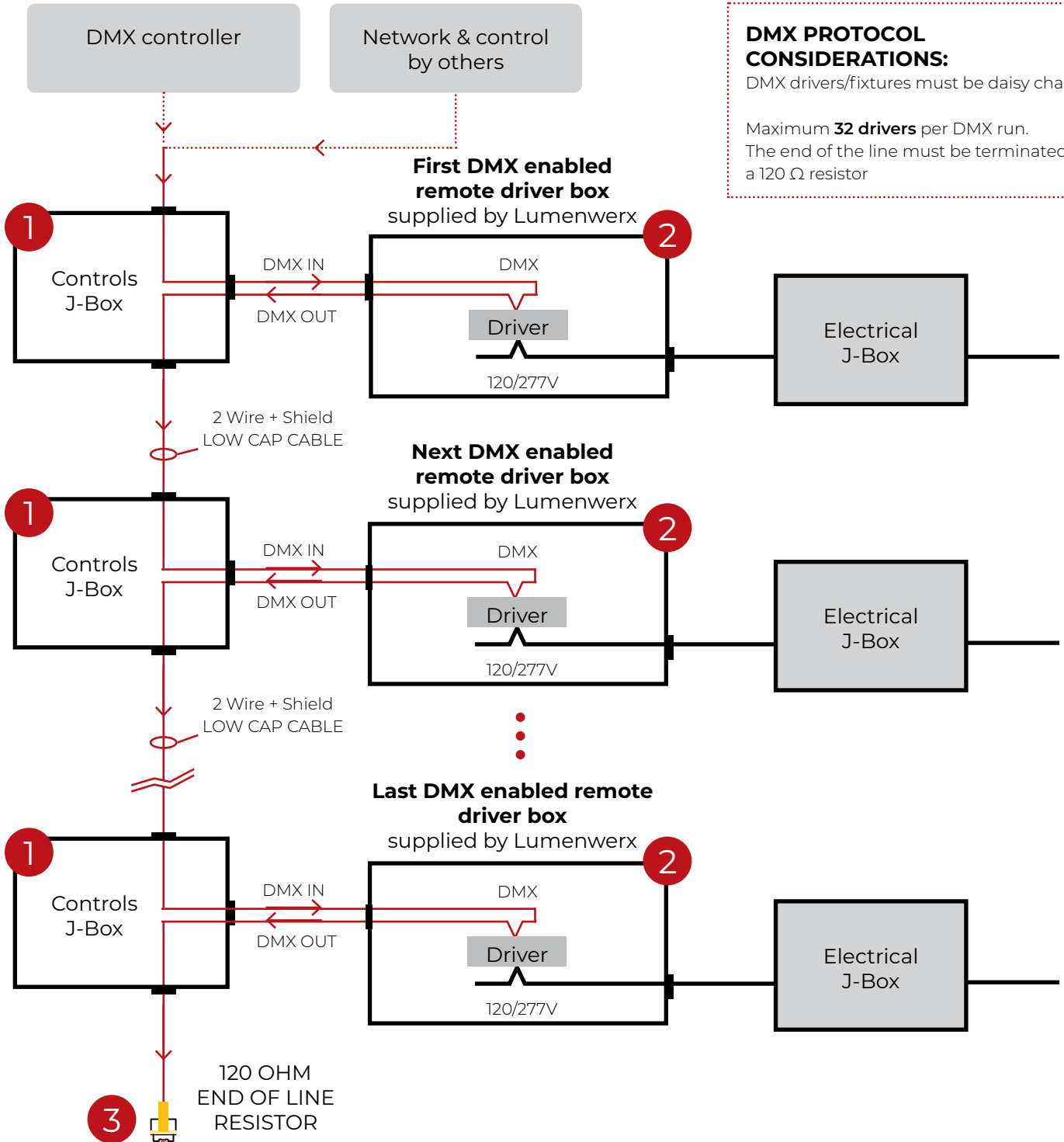
BPL - Black parabolic louver



WPL - White parabolic louver

DUO GENERIC DMX NETWORK ARCHITECTURE

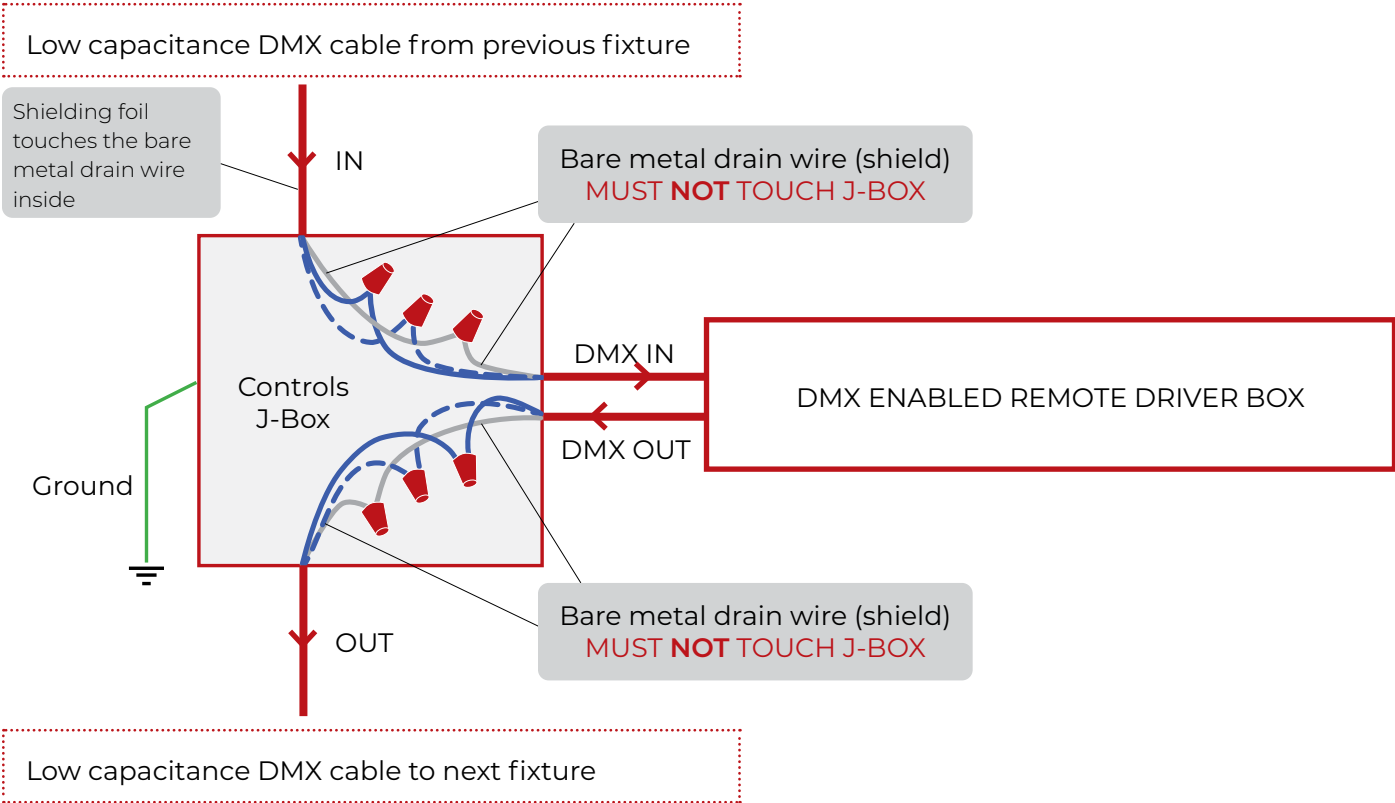
A qualified DMX integrator is required to assure proper installation and commissioning of the DMX network. **When placing the PO, please provide the contact information of your DMX integrator.**



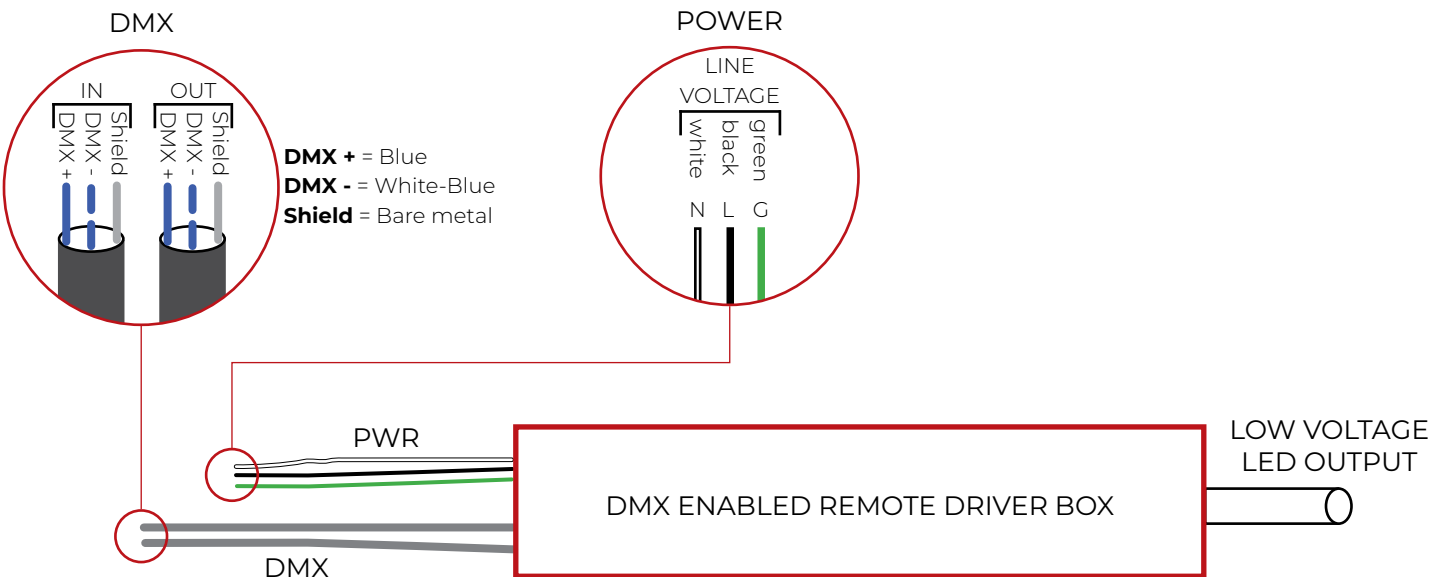
DMX PROTOCOL CONSIDERATIONS:
DMX drivers/fixtures must be daisy chained.

Maximum **32 drivers** per DMX run.
The end of the line must be terminated by a 120 Ω resistor

1 J-BOX DMX DAISY CHAIN DETAIL



2 DMX CONNECTION REMOTE DRIVER



3 LAST DMX CONNECTION DETAIL

