

CLUSTER

RECESSED ADJUSTABLE 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 recessed adjustable parabolic is available in 3, 5 and 10 cell configurations and aims 30° in either direction with a wide flood distribution. Precision optics that eliminate multiple shadows, as well as subtle louver treatments, match Cluster parabolic downlights. Nominal light output is 200 lumens per cell.

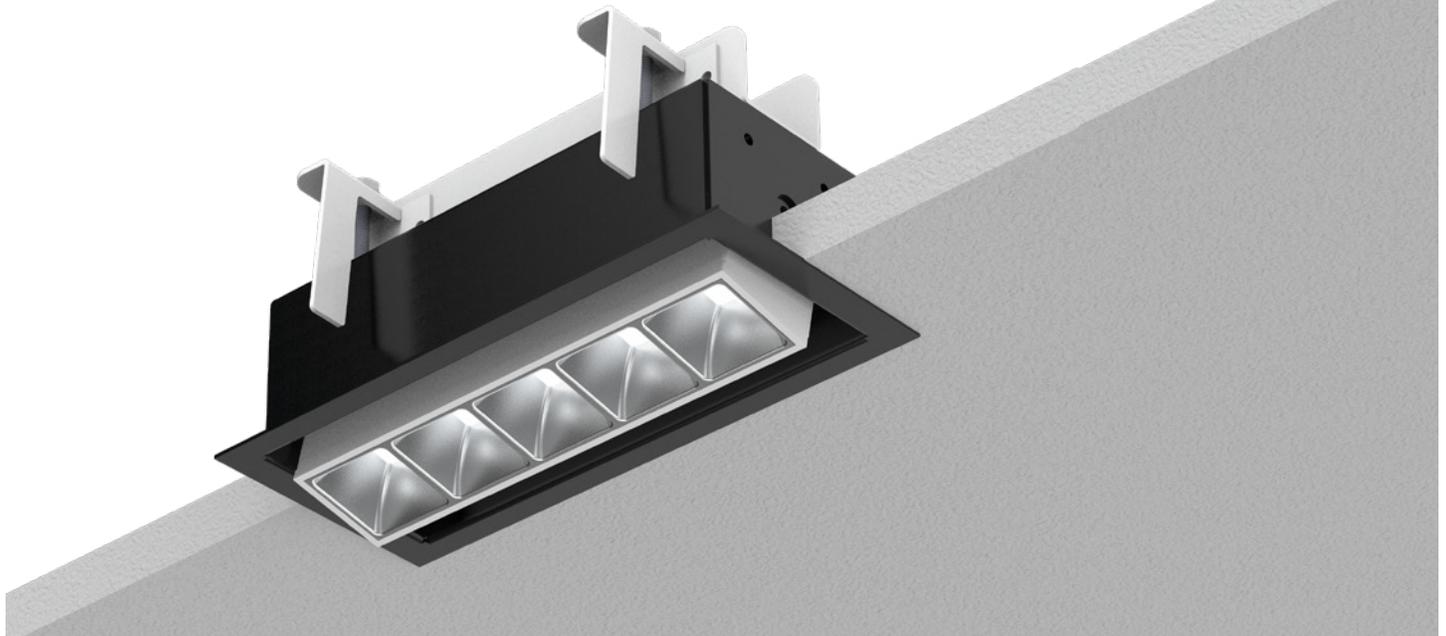
The adjustable optic mounts in an outer housing, which can install in a variety of ceiling types and materials, with either an integral driver or a remote driver that is capable of powering multiple luminaires.

LUMENWERX

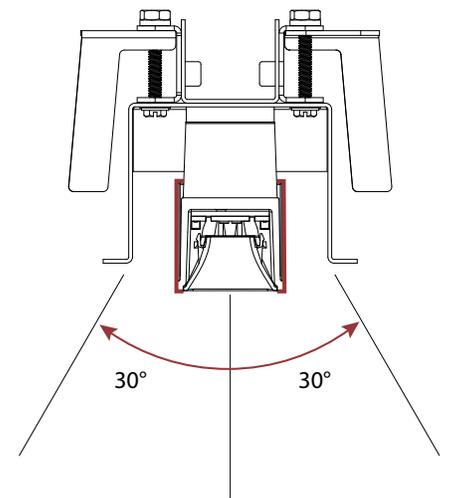
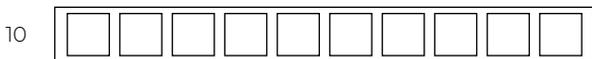
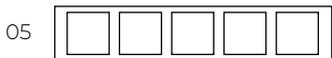
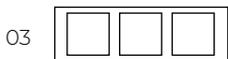
PROJECT: _____

TYPE: _____

NOTES: _____



SIZES

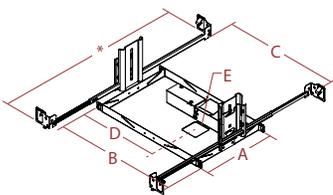


MOUNTING

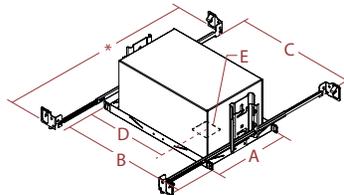
Cluster can be installed in a wide range of ceiling conditions and with various ceiling trim options. Spring clips clamp the lighting unit to the mounting frame (or directly to the ceiling for remodel). Maximum ceiling thickness is 1.25".

| INSTALLATION TYPE | MOUNTING OPTION ^{1,2} | TRIM TYPE |
|---|---|--|
| OF - Open Frame Type Non-IC IC - Type-IC RM - Remodel Type Non-IC CP - Chicago Plenum Type-IC (CCEA) | ASB - Adjustable standard bar hangers FMB - Flush mount bars ACB - Adjustable commercial bar hangers AHC - Adjustable hat channel bars NA - Not applicable | TRM - Flanged trim TLMP - Trimless drywall mudplate |
| ¹ For detailed mounting option dimensions, see page 4. ² Specify NA for remodel (RM) installation type. | | |

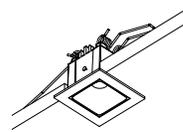
INSTALLATION TYPE ³



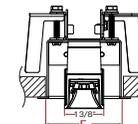
OF
Open Frame



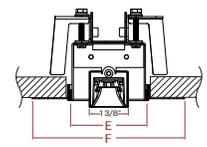
IC or CP
Type-IC/ Chicago Plenum



RM
Remodel



TRM
Flanged trim



TLMP
Trimless drywall mudplate

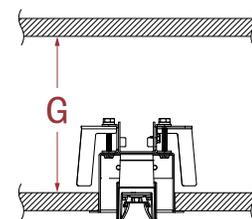
³ Drawings shown with adjustable standard bar hangers.

| | A HOUSING WIDTH | B HOUSING LENGTH | C SPACING BETWEEN BARS | D DISTANCE FROM CUT-OUT |
|-----------------|-----------------------|------------------------|------------------------------|-------------------------------|
| CLUADJ03 | 11" | 12 11/16" | 12 1/8" | 6 3/8" |
| CLUADJ05 | 11" | 13 11/16" | 13 1/8" | 6 7/8" |
| CLUADJ10 | 13" | 15 1/2" | 14 3/8" | 7 7/16" |

| E CUT-OUT DIMENSIONS | F MUDPLATE DIMENSIONS |
|----------------------------|-----------------------------|
| 4 3/8" x 3" | 6 7/8" x 5 3/8" |
| 6 3/4" x 3" | 9 1/4" x 5 3/8" |
| 12 3/4" x 3" | 15 1/4" x 5 3/8" |

PLENUM CLEARANCE DIMENSIONS

| | G PLENUM CLEARANCE HEIGHT | | | |
|-----------------|------------------------------|---------|----------|---------|
| | REMOTE & INTEGRAL | | INTEGRAL | REMOTE |
| | OPEN FRAME | IC / CP | REMODEL | REMODEL |
| CLUADJ03 | 4 13/16" | 5 3/8" | 4" | 3 1/4" |
| CLUADJ05 | 4 13/16" | 5 3/8" | 4" | 3 1/4" |
| CLUADJ10 | 4 13/16" | 5 3/8" | 4" | 3 1/4" |

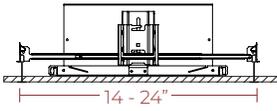


CLUSTER

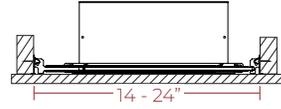
RECESSED ADJUSTABLE PARABOLIC

LUMENWERX

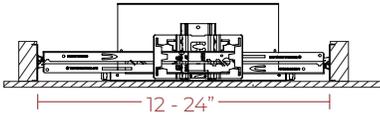
MOUNTING OPTIONS



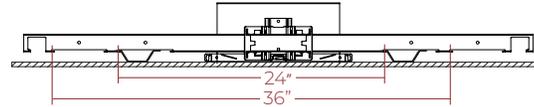
ASB - Adjustable standard bar hangers
Grid ceiling or drywall with variable height
(Commercial applications)



FMB - Flush mount bracket
Drywall/metal/wood frame mounting
(Residential applications)



ACB - Adjustable commercial bar hangers
Grid ceiling, drywall, metal, wood, frame mounting
(Also openings for multiple hanging options such as hat channel, IC channel and metal tubing, supplied by others)



AHC - Adjustable hat channel bars
With adjustable height

FIXTURE DIMENSIONS

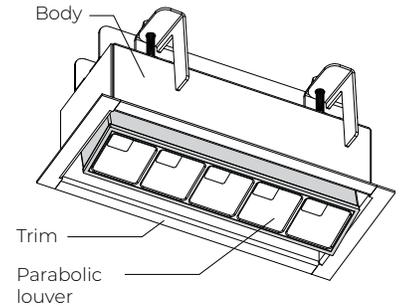
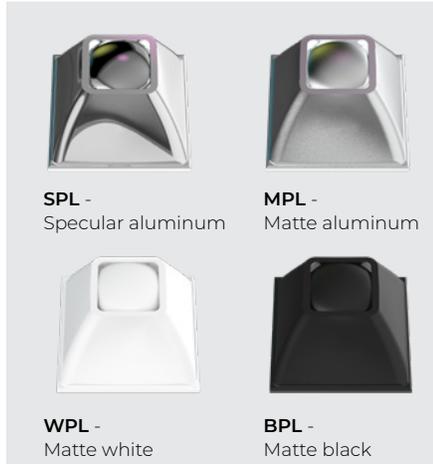
| | BODY TYPE | |
|------------------|---------------------|-----------------------------------|
| | TRM Flanged trim | TLMP Trimless drywall mudplate |
| CLUADJL03 | | |
| CLUADJL05 | | |
| CLUADJL10 | | |

LIGHT

OPTICS

LOUVER FINISH

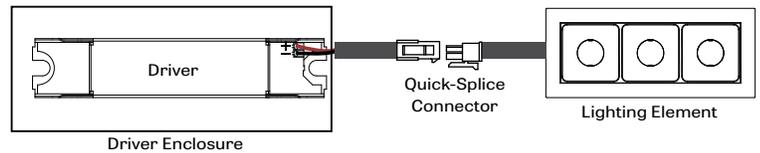
Louvers are injection molded with integral texture and color



DRIVER

INTEGRAL DRIVER STATIC WHITE ONLY

The integral driver is sized to the lighting unit and is connected directly to it with Class 2 wiring and quick-splice connectors. The driver enclosure can be serviced through the ceiling by removing the lighting unit.



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 | LUMEN PACKAGE | VOLTAGE | INTEGRAL DRIVER |
|--|--------------|--------|---------------|--|--------------------------|---|
| CLUADJ03 | 584 lm | 7.3 W | 80 lm/W | Use the multiplier tables to calculate the lumen package | 120 - 120V 277 - 277V | D1 - 1% 0-10V ELV ¹ - ELV 120V TRI ¹ - TRIAC 120V |
| CLUADJ05 | 957 lm | 11.5 W | 83 lm/W | | | |
| CLUADJ10 | 1896 lm | 23.2 W | 82 lm/W | | | |
| ¹ Available with 120V only. | | | | | | |

CLUSTER

RECESSED ADJUSTABLE PARABOLIC

LUMENWERX

REMOTE DRIVER STATIC WHITE, DUO & SOLA

The remote 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. The remote driver and lighting units 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

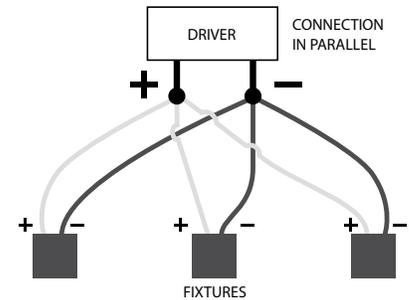
| LUMINAIRE ID | LUMEN PACKAGE ² | | | VOLTAGE | REMOTE DRIVER | NUMBER OF LIGHTING UNITS PER DRIVER |
|---|---|---|--|--|--|---|
| CLUADJ03 CLUADJ05 CLUADJ10 | LOW 200 lm ³ 239 lm 474 lm | MEDIUM 365 lm ³ 598 lm 1185 lm | HIGH 584 lm 957 lm 1896 lm | 120 - 120V 277 - 277V UNV - 120V-277V | STATIC WHITE RDI - 1% 0-10V RELV ⁴ - ELV 120V RTRI ⁴ - TRIAC 120V RDA ⁵ - DALI RLTEA2W ⁴ - Lutron 1% - 2 wire FP 120V RLDE1 ⁵ - Lutron Hi-Lume 1% Eco ⁴ Available with 120V only. ⁵ On-site commissioning is required. DUO RDMX ⁵ - To specify see pages 9 to 11 RDA ⁵ - DALI RDDI - Dual 0-10V input for CCT/Intensity SOLA RSDI - 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, please consult factory. |
| ² Low and medium options are not available with RELV and RTRI. ³ Minimum of 3 fixtures per driver. | | | | | | |

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 | CLUADJ03 | CLUADJ05 | CLUADJ10 |
|---|----------|----------|----------|
| SW | | | |
| DI - 1% 0-10V | 1-12 | 1-6 | 1-3 |
| ELV - ELV 120V | 1-4 | 1-2 | 1 |
| TRI - TRIAC 120V | 1-4 | 1-2 | 1 |
| DA - DALI | 2-11 | 1-6 | 1-3 |
| LTEA2W - Lutron 1% - 2 wires FP 120V | 2-5 | 1-3 | 1 |
| LDE1 - Lutron Hi-Lume 1% Eco | 1-10 | 1-6 | 1-3 |
| DUO | | | |
| DMX | 3-6 | 2-4 | 1-2 |
| DA - DALI | 3-7 | 2-3 | 1 |
| DDI - Dual 0-10V input for CCT/Intensity | 3-7 | 2-4 | 1-2 |
| SOLA | | | |
| SDI - Single 0-10V input | 3-7 | 2-4 | 1-2 |

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

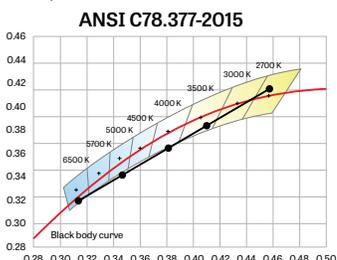
Custom array of mid-flux LEDs mounted onto aluminum-backed circuitry. Available in 2700K, 3000K, 3500K and 4000K with a minimum 90 CRI with elevated R9 value. Color consistency is maintained to within 3 SDCM. All LEDs have been tested in accordance with IESNA LM-80-08 and the results have shown L80 lumen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

CLUSTER

RECESSED ADJUSTABLE PARABOLIC

LUMENWERX

WEIGHT

| | BODY | | OPEN FRAME | | TYPE-IC WITH CHICAGO PLENUM | |
|-----------------|------|------|------------|------|-----------------------------|------|
| | Lb | Kg | Lb | Kg | Lb | Kg |
| CLUADJ03 | 1.59 | 0.69 | 2.52 | 1.14 | 5.90 | 2.68 |
| CLUADJ05 | 2.18 | 0.97 | 2.57 | 1.17 | 6.20 | 2.81 |
| CLUADJ10 | 3.57 | 1.62 | 3.33 | 1.51 | 7.75 | 3.52 |

CONSTRUCTION

Housing - Die-cast aluminum (0.95" nominal)

Optics - Polycarbonate

Mounting frame - 22 gauge galvanized sheet metal

Driver housing - 18 gauge galvanized sheet

Mounting clips - Ø1.0-1.4mm spring clips

Adjustable structure - 18 gauge cold rolled steel

Mounting bracket - 16 gauge cold rolled steel

Fixture case - 24 gauge cold rolled 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

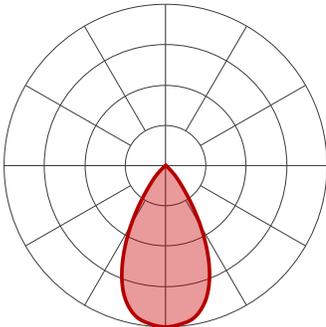
Chicago plenum - City of Chicago approved (CCEA) when specified with CP installation type option.

IC rated - Suitable for direct contact with insulation when specified with IC or CP installation type options.

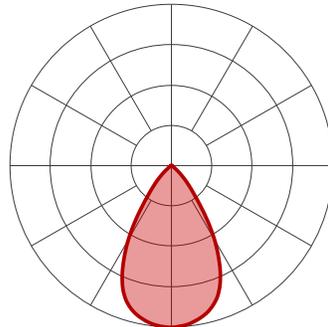
WARRANTY

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.

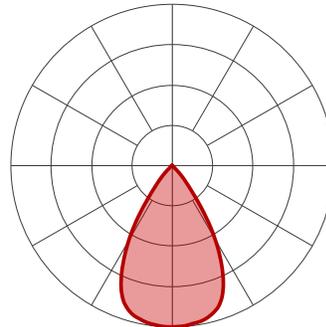
PARABOLIC LOUVERS



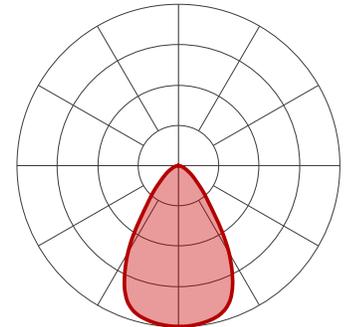
SPL - Specular parabolic louver



MPL - Matte parabolic louver



BPL - Black parabolic louver



WPL - White parabolic louver

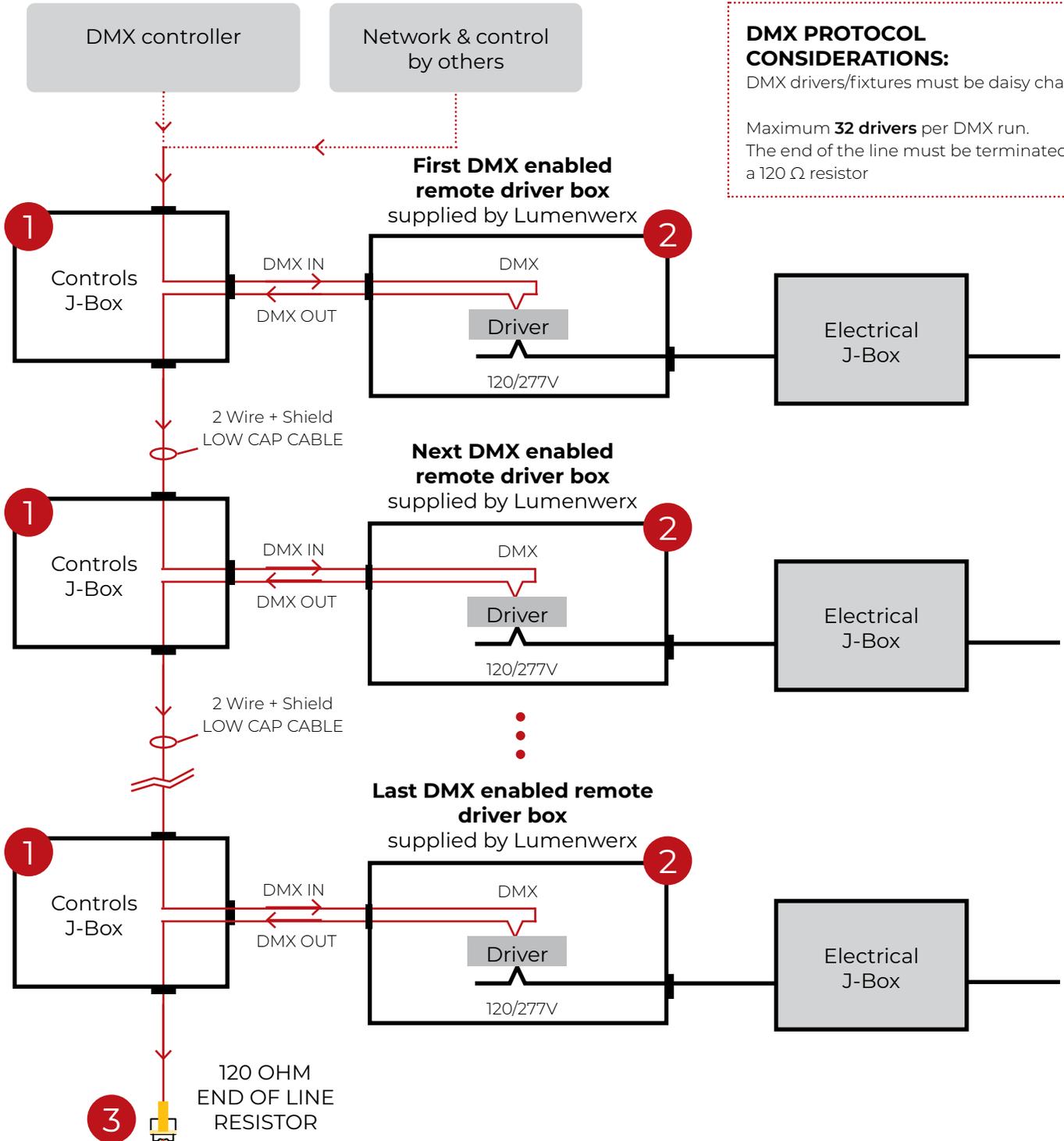
CLUSTER

RECESSED ADJUSTABLE PARABOLIC

LUMENWERX

DUO GENERIC DMX NETWORK ARCHITECTURE

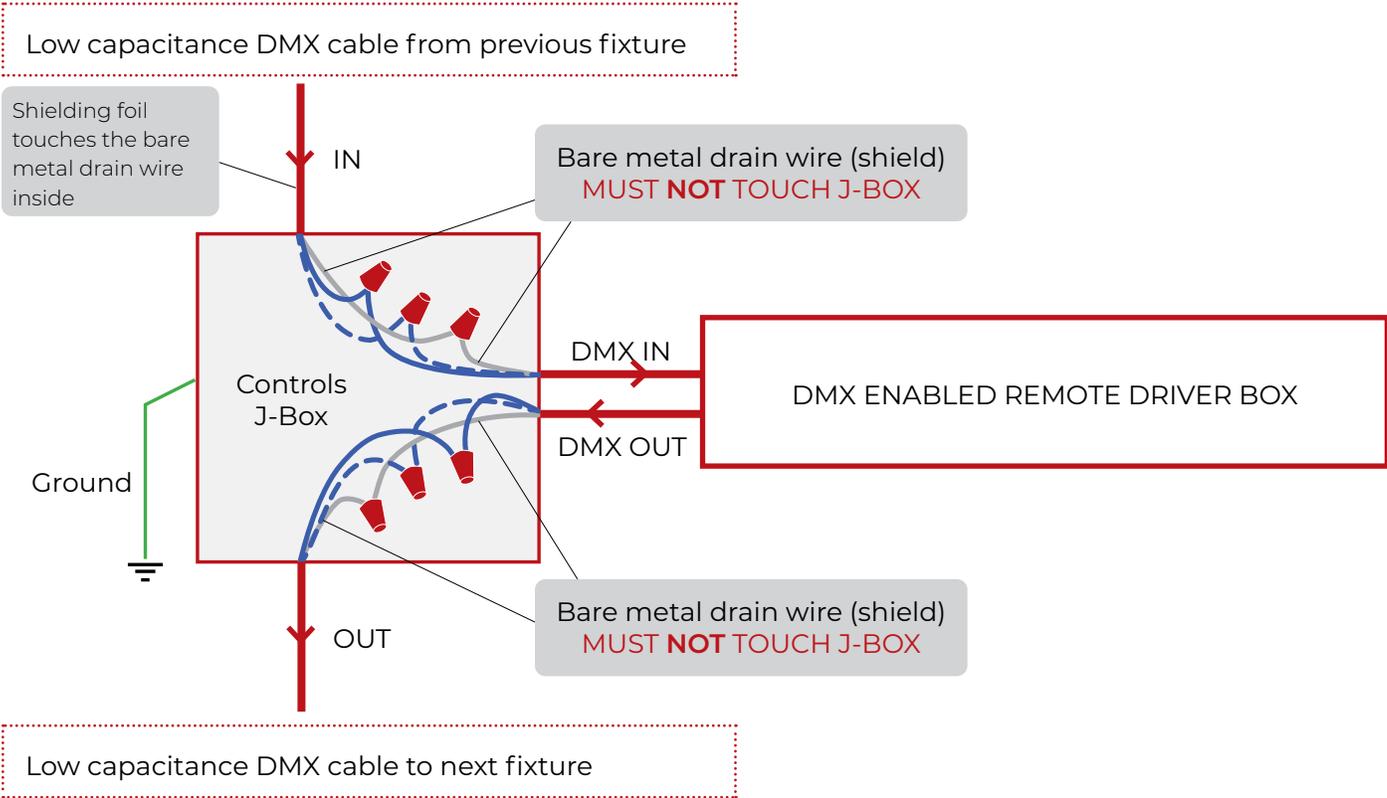
A qualified DMX integrator is required to assure proper installation and commissioning of the DMX network. **When placing the PO, please provide the contact information of your DMX integrator.**



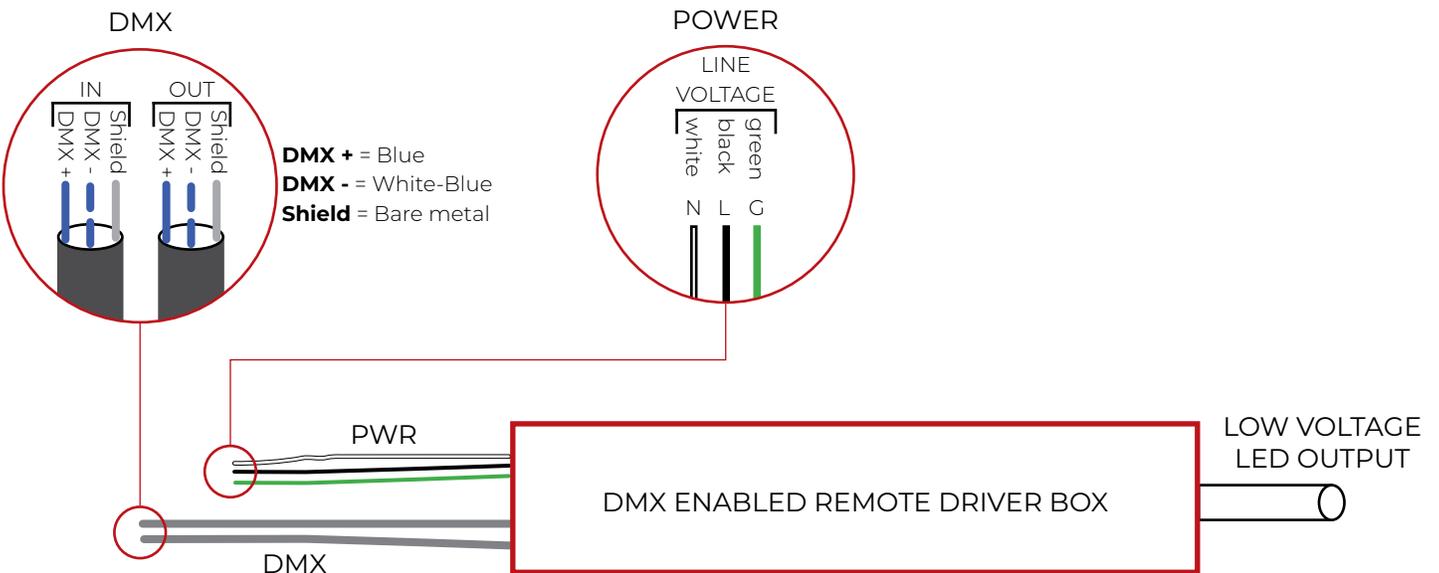
DMX PROTOCOL CONSIDERATIONS:
DMX drivers/fixtures must be daisy chained.
Maximum **32 drivers** per DMX run.
The end of the line must be terminated by a 120 Ω resistor



1 J-BOX DMX DAISY CHAIN DETAIL



2 DMX CONNECTION REMOTE DRIVER



CLUSTER

RECESSED ADJUSTABLE PARABOLIC

LUMENWERX

3 LAST DMX CONNECTION DETAIL

