

LP Dimming Panels

LP dimming panels are ideal for projects with many small loads. Each panel provides power and dimming for up to 32 controllable outputs.

Features

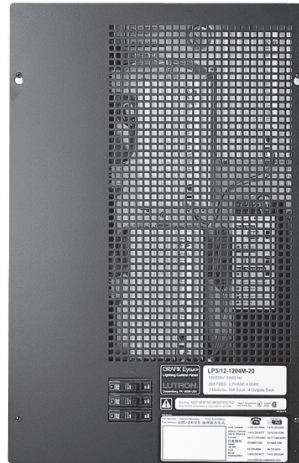
- Works directly with incandescent, magnetic low-voltage, and neon/cold cathode lighting, as well as Lutron TuWire fluorescent dimming ballasts.
- Works with electronic low-voltage lighting via power interfaces.
- Works with 3-wire AC motors through motor modules.
- Panels are prewired – just bring in feed and load wiring.
- Surface or recess mount between 16 in (40 cm) center-to-center studs.

Models available with:

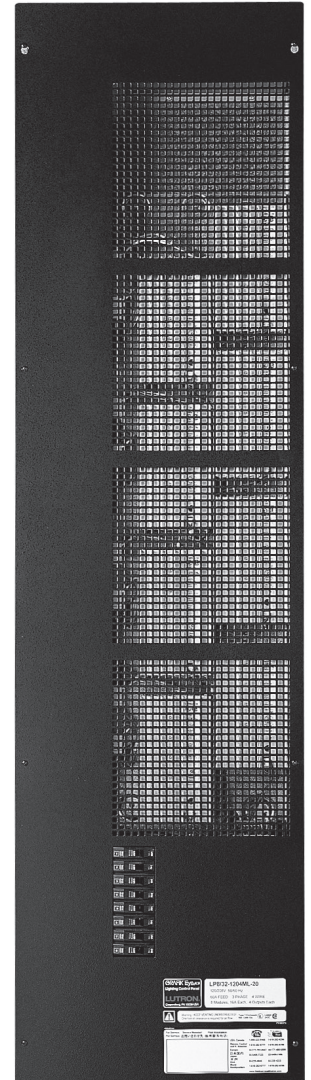
- 120 V~, 220–240 V~ (non CE), or 230 V~ (CE) input power.
- 1–8 dimming modules for 4–32 controllable outputs.
- Different feed types and breakers.

LP Dimming Panels work with:

- GRAFIK Eye 4000 control units.
- Quantum systems.
- GP dimming panels and XP switching panels.
- DMX512 dimming systems via the 2Link option.



Mini LP Dimming Panel
LP1/4–LP3/12



Standard-Size LP Dimming Panel
LP4/28–LP8/32

<p>Job Name:</p> <p>Job Number:</p>	<p>Model Numbers:</p>
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Specifications

Regulatory Approvals (120 V~ panels only)

- UL Listed (Reference: UL File 42071).
- Complies with CSA, NOM, or CE (where appropriate. Contact Lutron for listing details on custom panels).

Power

- Input power: 120 V~, 220–240 V~ (non CE), and 230 V~ (CE). All voltages 50/60 Hz, phase-to-neutral.
- Branch circuit breakers (AIC ratings):
 - 120 V~ 10,000 A
 - 220–240 V~ 6000 A
 - 230 V~ (CE) 6000 A
- Lightning strike protection: Meets ANSI/IEEE standard 62.41-1980. Can withstand voltage surges of up to 6000 V~ and current surges of up to 3000 A.
- 10-year power failure memory: Automatically restores lighting to scene selected prior to power interruption.

Short-Circuit Current Ratings (other ratings available)

Panel Type	Voltage	Standard SCCR Rating
LP Main Lug Panels (all sizes)	120 V~	25,000 A

Sources/Load Types

Operates these sources with a smooth, continuous Square Law dimming curve or in a full-conduction, non-dim state:

- Incandescent (Tungsten/Halogen).
- Magnetic Low-Voltage transformer.
- Lutron Tu-Wire electronic fluorescent dimming ballasts.
- Neon/Cold Cathode.

Operates these sources via power interfaces:

- Leading edge Electronic Low-Voltage transformer via dedicated internal dimming modules or external power interfaces.
- Lutron electronic fluorescent dimming ballasts via external power interfaces.
- Operates HID sources in a full conduction, non-dim state.
- LED and Compact Fluorescent*

Dimming Modules**

- Each dimming module can handle a fully loaded electrical circuit, up to four controllable outputs per module.

Maximum Ratings

Voltage	Capacity per Dimming Module	Capacity per Dimming Leg
120 V~	16 A	16 A
220–240 V~ (non-CE)	16 A	16 A
230 V~ (CE)	13 A	10 A

- RTISS filter circuit technology compensates for incoming line voltage variations: No visible flicker with +/-2% change in RMS voltage/cycle and +/-2% Hz change in frequency/second.

Wiring

- Internal: Prewired by Lutron.
- System communications: Low-Voltage IEC PELV/ NEC® Class 2 wiring connects dimming panels to other components.
- Line (mains) voltage: Feed and load wiring only. No other wiring or assembly required.

Setup

Circuit selector electronically assigns controllable outputs to zones and sources; permits reassignment of zones and sources without rewiring.

Physical Design

- Enclosure: NEMA-Type 1, IP-20 protection; 16 U.S. gauge steel. Indoor use only.
- Weight: 27 lb (13 kg) for Mini LP, 63 lb (29 kg) for Standard-Size LP.

Mounting

- Surface mount or recess mount between 16 in (40 cm) studs.
- Allow space for ventilating.

Environment

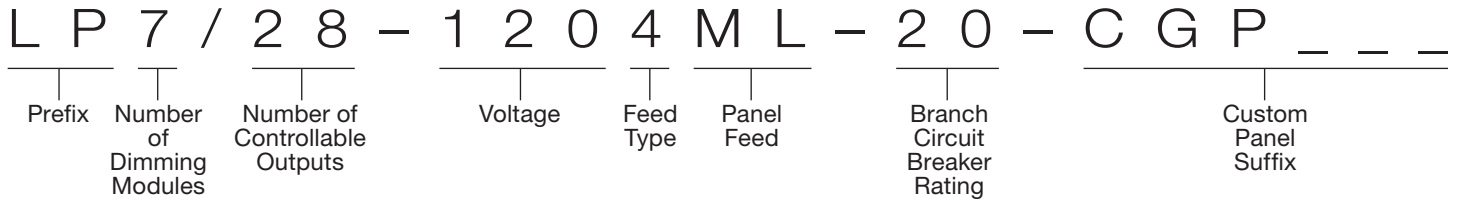
32–104 °F (0–40 °C). Relative humidity less than 90%, non-condensing.

* Not all LED and CFL loads available today are dimmable. Visit www.lutron.com/LEDtool for a list of loads that have been tested by Lutron to be compatible with this product.

** For more information on load ratings, please refer to Application Note #201 at www.lutron.com/TechnicalDocumentLibrary/048-201.pdf

Job Name:	Model Numbers:
Job Number:	

How to Build an LP Dimming Panel Model Number



Prefix

- **LP:** Dimming Panel

Number of Dimming Modules

- Indicates number of dimming modules in the panel. Also indicates number of full load circuits.

Number of Controllable Outputs

- Indicates number of controllable outputs in the panel. Each module has four controllable outputs.

Voltage

- **120:** 120 V~
- **230:** 230 V~ (CE)
- **240:** 220–240 V~ (non-CE)

Feed Type

- **2:** 1-phase 2-wire
- **3:** 1-phase 3-wire (split-phase)
- **4:** 3-phase 4-wire

Panel Feed

- **ML:** Main Lugs only
- **Mxx:** Main Breaker with xx = breaker size in Amps (custom panel option)
- **IS:** Isolation Switch (CE/non-CE only)

Branch Circuit Breaker Rating

- **20:** 20 A branch circuit breakers (120 V~ only)
- **15:** 15 A branch circuit breakers (120 V~ only)
- **13:** 13 A branch circuit breakers (230 V~ CE only)
- **16:** 16 A branch circuit breakers (240 V~ non-CE only)

Custom Panel Suffix

- CGP number indicates specific characteristics of a customized panel.

Job Name:	Model Numbers:
Job Number:	

Models

Only standard panels listed. Consult Lutron for further options.

Mini LP Dimming Panels

120 V~ Power

Number of Dimming Modules	Number of Controllable Outputs	Feed Type	Maximum Feed	Panel Feed
LP1	4	1Ø 2W	20 A	15 A or 20 A ¹ branch circuit breakers
LP2	8	1Ø 2W	40 A	
		1Ø 3W	20 A	
LP3	12	1Ø 2W	40 A	
		1Ø 3W	40 A	
		3Ø 4W	20 A	

¹ 20/16 A, 15/12 A continuous load rating.

220–240 V~ (non-CE) Power

Number of Dimming Modules	Number of Controllable Outputs	Feed Type	Maximum Feed	Panel Feed
LP1	4	1Ø 2W	16 A	16 A branch circuit breakers
LP2	8	1Ø 2W	32 A	
LP3	12	1Ø 2W	48 A	
		3Ø 4W	16 A	

230 V~ (CE) Power

Number of Dimming Modules	Number of Controllable Outputs	Feed Type	Maximum Feed	Panel Feed
LP1	4	1Ø 2W	13 A	13 A branch circuit breakers
LP2	8	1Ø 2W	26 A	
LP3	12	1Ø 2W	39 A	
		3Ø 4W	13 A	

Wire Sizes

Feed Wiring

Power (Hot/Live) connects directly to branch circuit breakers:

- 120 V~: 14 AWG to 10 AWG (2.0 mm² to 4.0 mm²)
- 220–240 V~ (non-CE): 18 AWG to 4 AWG (1.0 mm² to 25 mm²)
- 230 V~ (CE): 18 AWG to 4 AWG (1.0 mm² to 25 mm²)

Neutral connects to neutral lug:

- 120 V~: 14 AWG to 2/0 AWG (2.0 mm² to 70 mm²)
- 220–240 V~: 14 AWG to 8 AWG (2.0 mm² to 6.0 mm²)
- 230 V~ (CE): 14 AWG to 8 AWG (2.0 mm² to 6.0 mm²)

Load Wiring

- All Models: 14 AWG to 10 AWG (2.0 mm² to 4.0 mm²)

Job Name:	Model Numbers:
Job Number:	

Models (continued)

Only standard panels listed. Consult Lutron for further options.

Standard-size LP Dimming Panels

120 V~ Power

Number of Dimming Modules	Number of Controllable Outputs	Feed Type	Maximum Feed	Panel Feed	Branch Circuit Breakers
LP4	16	3Ø 4 W	175 A	Main lugs only	15 A or 20 A ¹
LP5	20	3Ø 4 W	175 A		
LP6	24	3Ø 4 W	175 A		
LP7	28	3Ø 4 W	175 A		
LP8	32	3Ø 4 W	175 A		

¹ 20/16A, 15/12A continuous load rating.

220–240 V~ (non-CE) Power

Number of Dimming Modules	Number of Controllable Outputs	Feed Type	Maximum Feed	Panel Feed	Branch Circuit Breakers
LP4	16	3Ø 4 W	125 A	Isolation switch only	16 A
LP5	20	3Ø 4 W	125 A		
LP6	24	3Ø 4 W	125 A		
LP7	28	3Ø 4 W	125 A		
LP8	32	3Ø 4 W	125 A		

230 V~ (CE) Power

Number of Dimming Modules	Number of Controllable Outputs	Feed Type	Maximum Feed	Panel Feed	Branch Circuit Breakers
LP4	16	3Ø 4 W	125 A	Isolation switch only	13 A
LP5	20	3Ø 4 W	125 A		
LP6	24	3Ø 4 W	125 A		
LP7	28	3Ø 4 W	125 A		
LP8	32	3Ø 4 W	125 A		

Wire Sizes

Feed Wiring to Main Lugs (120 V~ Only):

- Power (Hot/Live): (3) 14 AWG to 2/0 AWG (2.0 mm² to 70 mm²)
- Neutral: (1) 14 AWG to 2/0 AWG (2.0 mm² to 70 mm²)

Feed Wiring to Isolation Switch (CE/non-CE only):

- Power (Hot/Live): (3) 2.5 mm² to 35 mm²
- Neutral: (1) 2.5 mm² to 35 mm²

Load Wiring

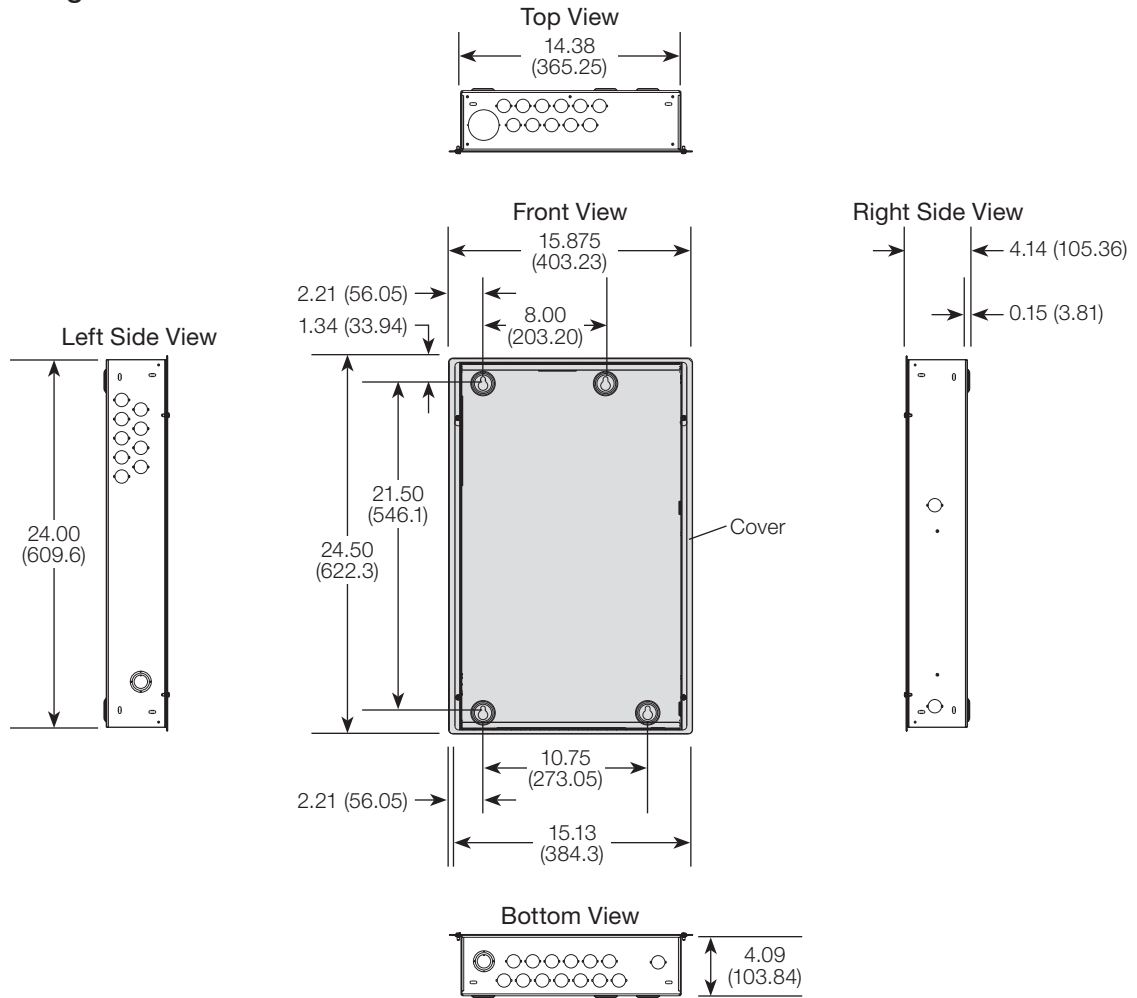
- All Models: 14 AWG to 10 AWG (2.0 mm² to 4.0 mm²)

Job Name:	Model Numbers:
Job Number:	

Dimensions

All dimensions shown as: in (mm)

Mini LP Dimming Panels

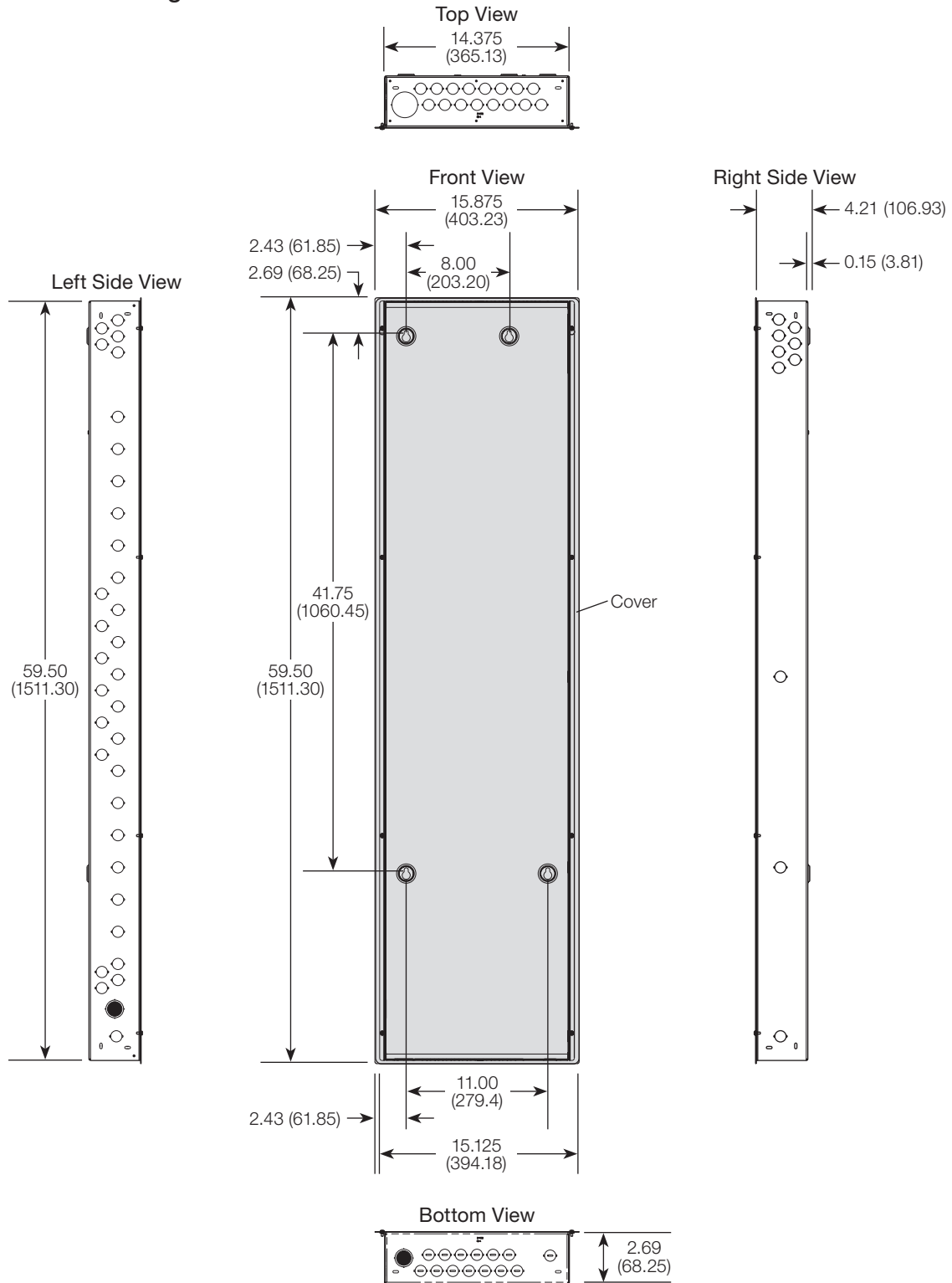


Job Name:	Model Numbers:
Job Number:	

Dimensions (continued)

All dimensions shown as: in (mm)

Standard-size LP Dimming Panels



Job Name:	Model Numbers:
Job Number:	

Mounting

Mini LP Dimming Panels

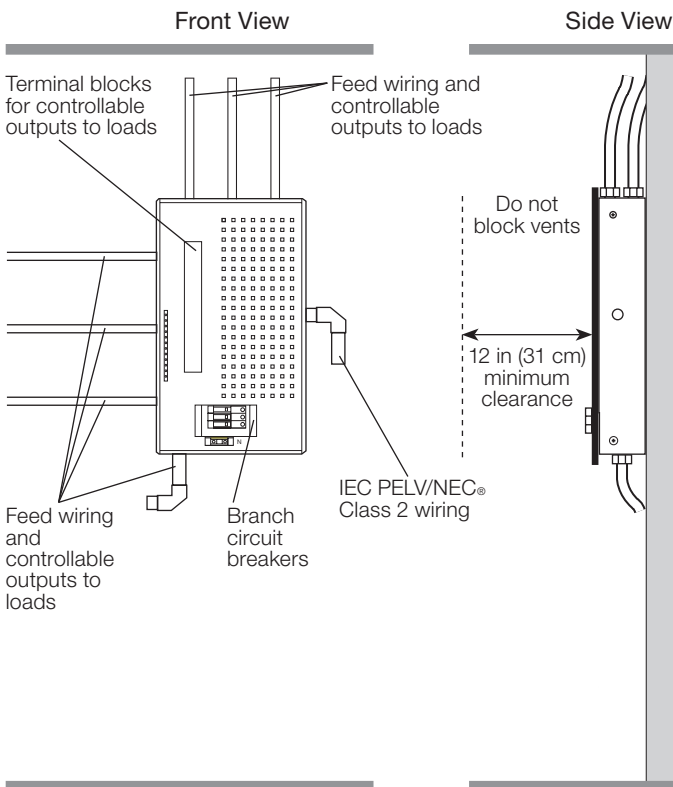
- Surface- or recess-mount indoors.
- Consult **Dimensions** page for dimensions and conduit knockout locations.
- Panel generates heat. Mount only where ambient temperature is 32 – 104 °F (0 – 40 °C).
- This equipment is air-cooled. Do not block vents or warranty will be void.
- Mount panels where audible noise is acceptable. (Panels hum slightly and internal relays click.)
- Mount panels so line (mains) voltage wiring is at least 6 ft (1.8 m) from sound or electronic equipment and wiring.
- Mount panel within 7° of true vertical.

Panel	Maximum BTUs/hour	Weight Without Packaging
LP1	90	33 lb (15 kg)
LP2	170	35 lb (16 kg)
LP3	250	37 lb (17 kg)

Maximum Feed and Wire Sizes
Consult Wiring page.

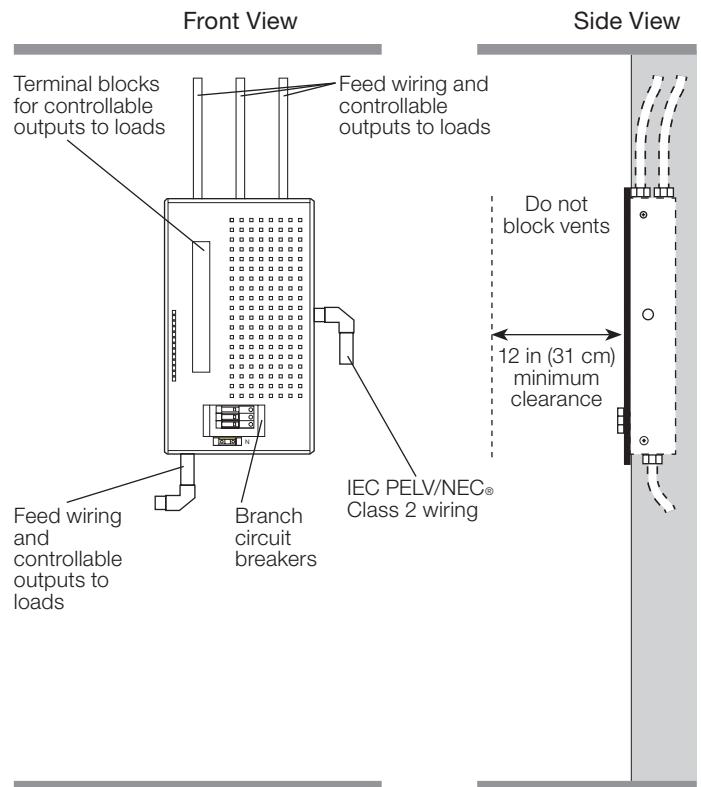
Surface Mounting

- Surface mounting keyholes accept 1/4 in (6 mm) mounting bolts. This size is recommended.



Recess Mounting

- Mount to wall stud by screwing through slots in corners of panel.
- Mount panel between flush and 1/8 in (3 mm) below finished wall surface.



Job Name:	Model Numbers:
Job Number:	

Mounting (continued)

Standard-size LP Dimming Panels

- Surface- or recess-mount indoors.
- Consult Dimensions page for dimensions and conduit knockout locations.
- Panel generates heat. Mount only where ambient temperature is 32–104 °F (0–40 °C).
- This equipment is air-cooled. Do not block vents or warranty will be void.
- Reinforce wall structure for weight and local codes.
- Mount Panels where audible noise is acceptable. (Panels hum slightly and internal relays click.)
- Mount Panels so line (mains) voltage wiring is at least 6 ft (1.8 m) from sound or electronic equipment and wiring.
- Mount Panel within 7° of true vertical.

Surface Mounting

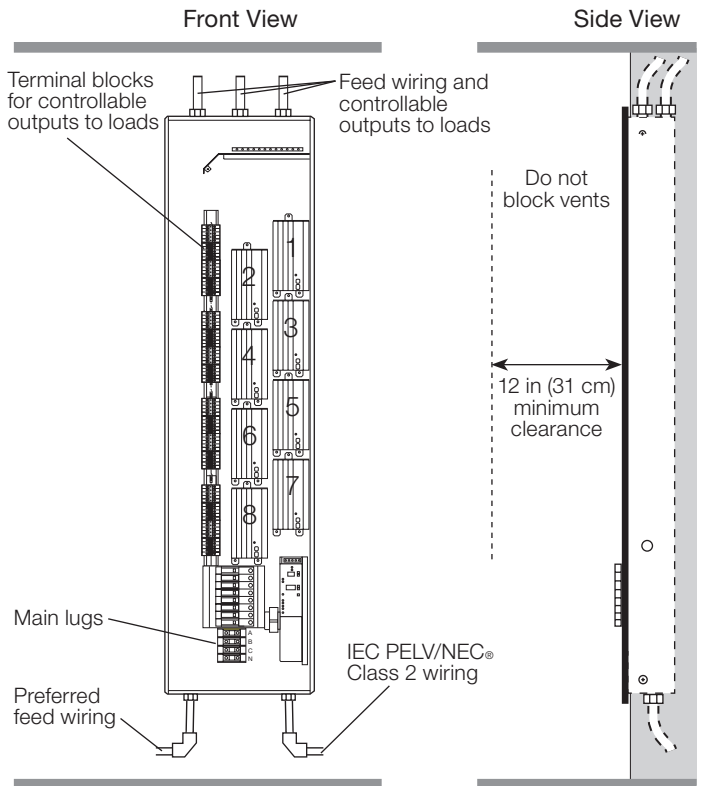
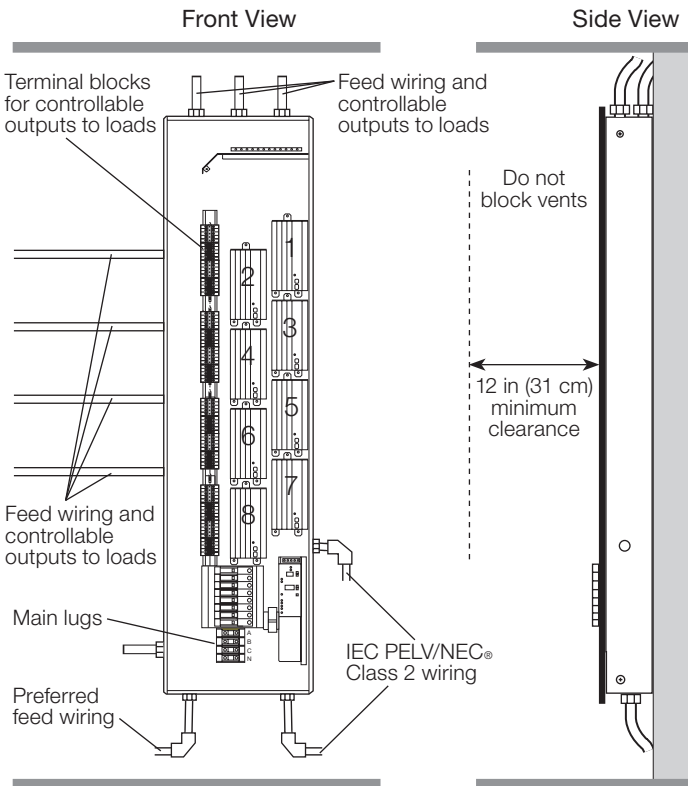
- Surface mounting keyholes accept 1/4 in (6 mm) mounting bolts. This size is recommended.

Panel	Maximum BTUs/hour	Weight Without Packaging
LP4	330	55 lb (25 kg)
LP5	410	57 lb (26 kg)
LP6	490	59 lb (27 kg)
LP7	570	61 lb (28 kg)
LP8	650	63 lb (29 kg)

Maximum Feed and Wire Sizes
Consult Wiring page.

Recess Mounting

- Mount to wall stud by screwing through slots in corners of panel.
- Mount panel between flush and 1/8 in (3 mm) below finished wall surface.



Job Name:	Model Numbers:
Job Number:	

Wiring

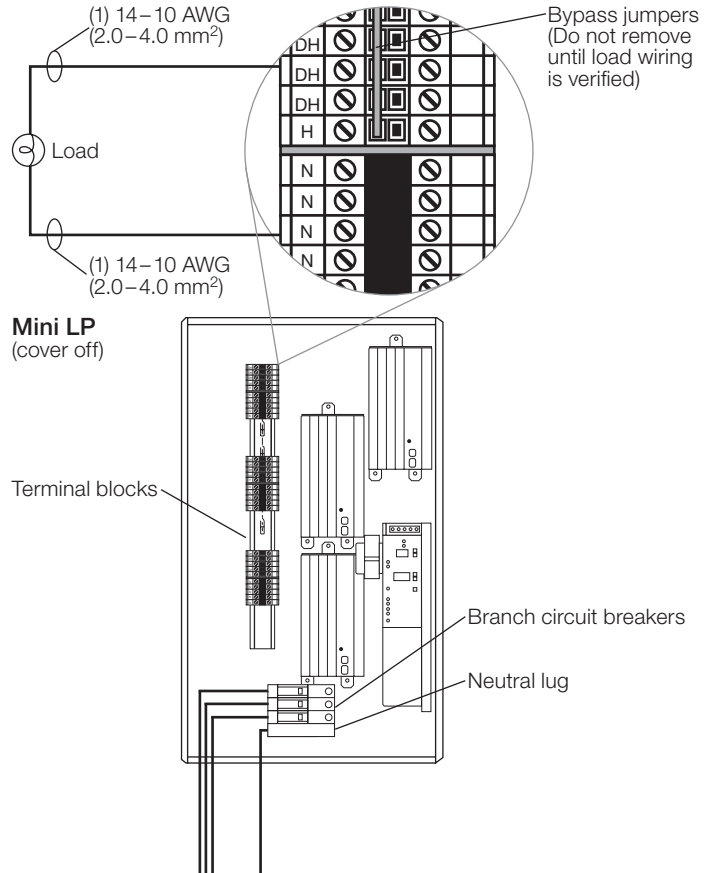
Mini LP Dimming Panels

Wire the Mini LP panel similarly to a lighting distribution panel:

- Run feed and load wiring; no other wiring or assembly is required.
- Run separate neutrals for each module (no common neutrals across phases).

The Mini LP panel can provide temporary lighting:

- Wire all loads.
- Do not remove the bypass jumpers that protect the dimming modules.
- Use branch circuit breakers to switch lights on and off.



Power (Hot/Live) Wiring		Neutral Wiring	
120 V~	14-10 AWG (2.0-4.0 mm ²)	120 V~	14-2/0 AWG (2.0-70 mm ²)
220-240 V~	18-4 AWG (1.0-25 mm ²)	220-240 V~	14-8 AWG (2.0-6.0 mm ²)
230 V~ (CE)		230 V~ (CE)	

Job Name:	Model Numbers:
Job Number:	

Wiring (continued)

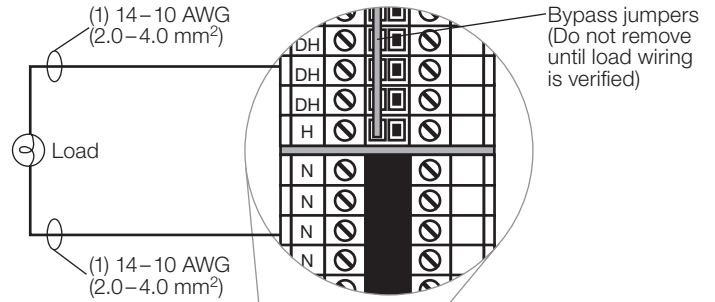
Standard-size LP Dimming Panels

Wire the LP panel similarly to a lighting distribution panel:

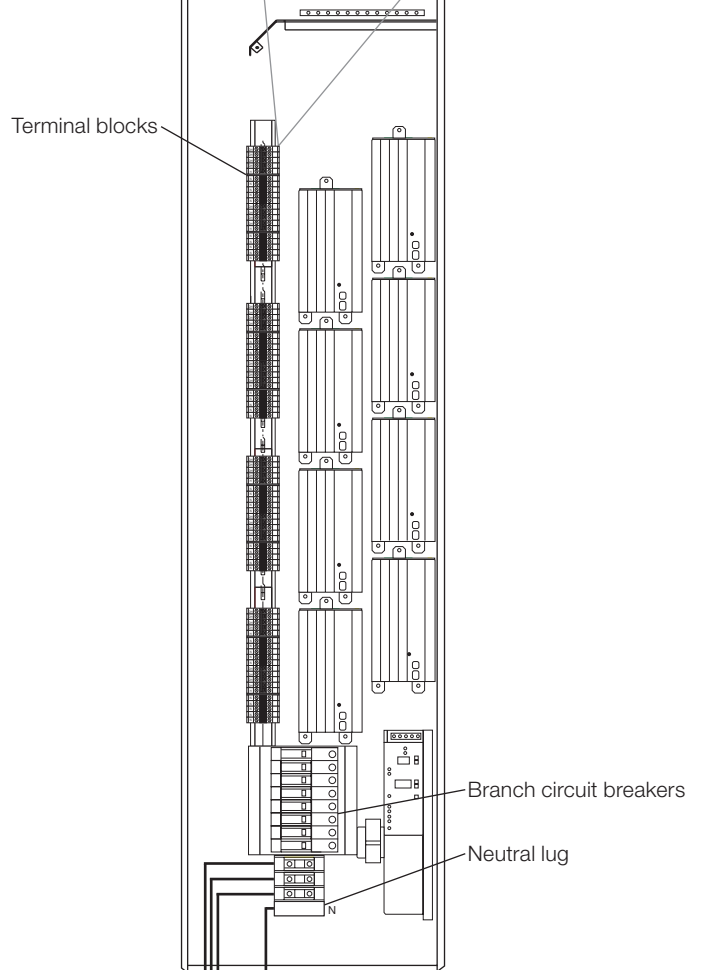
- Run feed and load wiring; no other wiring or assembly is required.
- Run separate neutrals for each module (no common neutrals across phases).

The LP panel can provide temporary lighting:

- Wire all loads.
- Do not remove the bypass jumpers that protect the dimming modules.
- Use branch circuit breakers to switch lights on and off.



Standard LP
(cover off)



Power (Hot/Live) Wiring	Neutral Wiring
(3) 14-2/0 AWG (2.0-70 mm ²)	(1) 14-2/0 AWG (2.0-70 mm ²)

Job Name:	Model Numbers:
Job Number:	

Typical Controllable Outputs for 120 V~

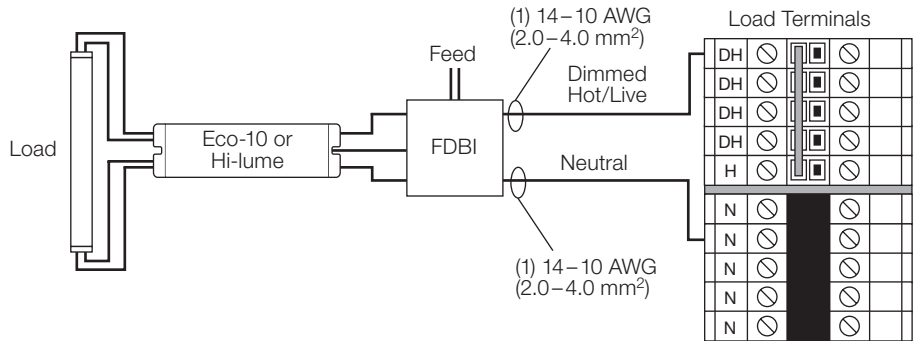
All Load Types except:

- Lutron Hi-lume or Eco-10 (ECO-Series) Fluorescent Dimming Ballasts
- Electronic Low-Voltage



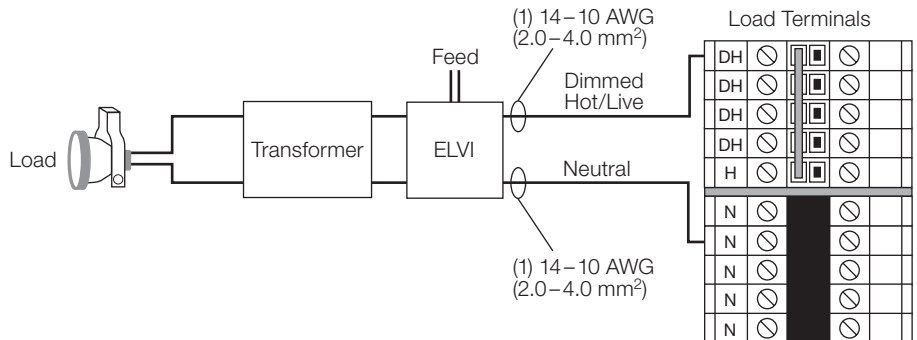
Lutron Hi-lume or Eco-10 (ECO-Series) Fluorescent Dimming Ballasts

- Use Lutron FDBI Fluorescent Dimming Ballast Interface.



Electronic Low-Voltage

- Use Lutron ELVI Electronic Low-Voltage Interface.
- Consult ELVI Specification Submittal for more details.



Job Name:	Model Numbers:
Job Number:	

Typical Controllable Outputs for 220 to 240 V~ (non CE)

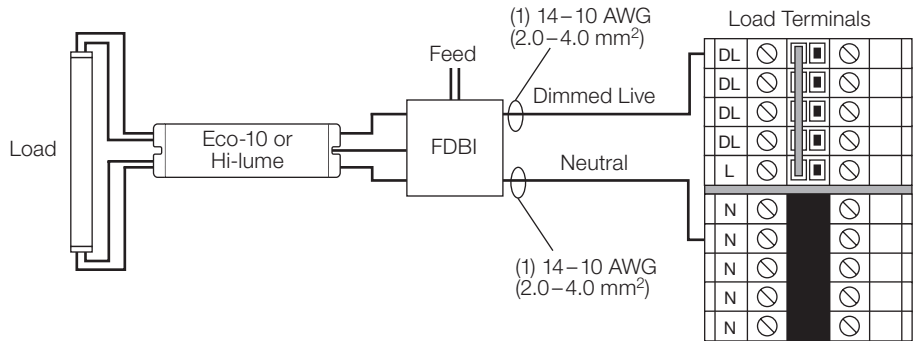
All Load Types except:

- Lutron Hi-lume or Eco-10 (ECO-Series) Fluorescent Dimming Ballasts
- Electronic Low-Voltage



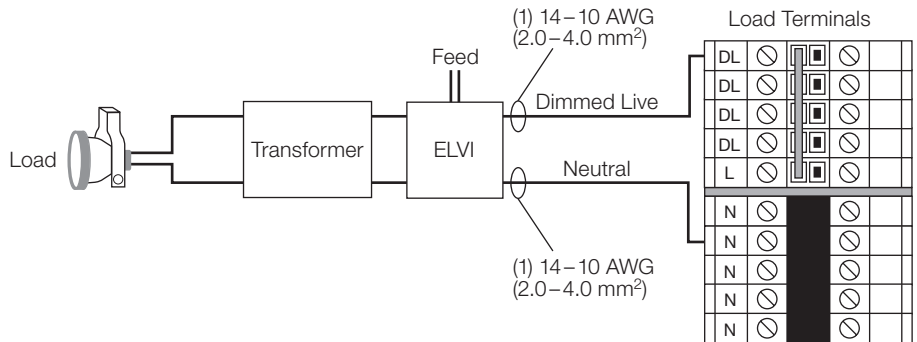
Lutron Hi-lume or Eco-10 (ECO-Series) Fluorescent Dimming Ballasts

- Use Lutron FDBI Fluorescent Dimming Ballast Interface.



Electronic Low-Voltage

- Use Lutron ELVI Electronic Low-Voltage Interface.
- Consult ELVI Specification Submittal for more details.



Job Name:	Model Numbers:
Job Number:	

Typical Controllable Outputs for 230 V~ (CE)

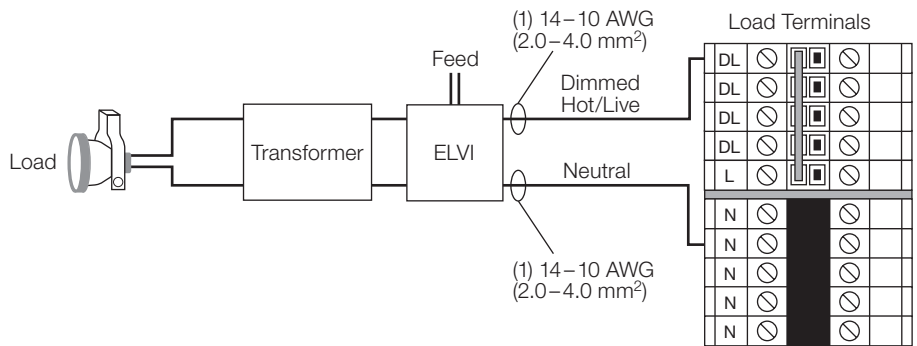
All Load Types except:

- Lutron Hi-lume or Eco-10 (ECO-Series) Fluorescent Dimming Ballasts
- Electronic Low-Voltage



Electronic Low-Voltage

- Use Lutron ELVI Electronic Low-Voltage Interface.



Job Name:	Model Numbers:
Job Number:	

Low-Voltage IEC PELV/NEC® Class 2 Wiring (All Models)

- System communications uses low-voltage IEC PELV/NEC® Class 2 wiring.
- Wiring must be daisy-chained.
- Wiring must run separately from line (mains) voltage.

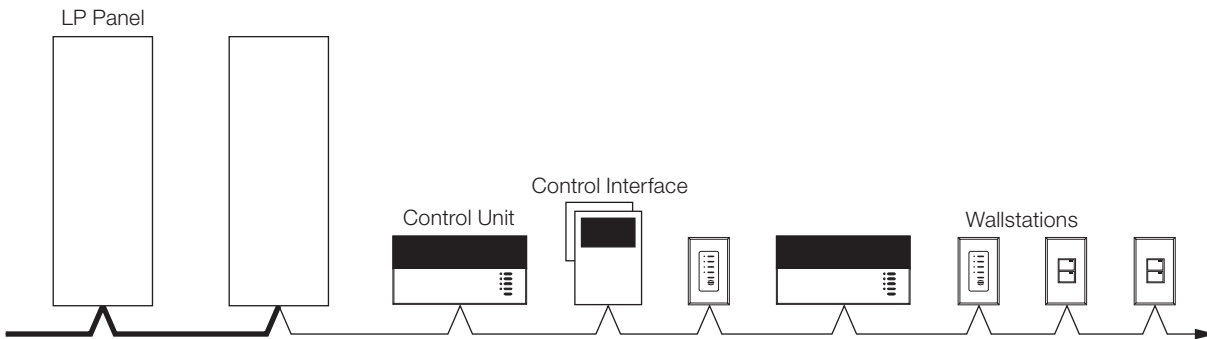
GRAFIK Eye 4000 System

IEC PELV/NEC® Class 2 wiring link requires:

- Two 12 AWG (2.5 mm²) conductors for control power.
- One twisted, shielded pair of 18 AWG (1.0 mm²) for data link.
- One 18 AWG (1.0 mm²) conductor for emergency (essential) sense line, from panel to panel.

Total length of control link may be no more than 2000 ft (610 m).

Approved low-voltage cable is available from Lutron¹, Belden, and Liberty. These are approved with 22 AWG (0.625 mm²) data link wires.



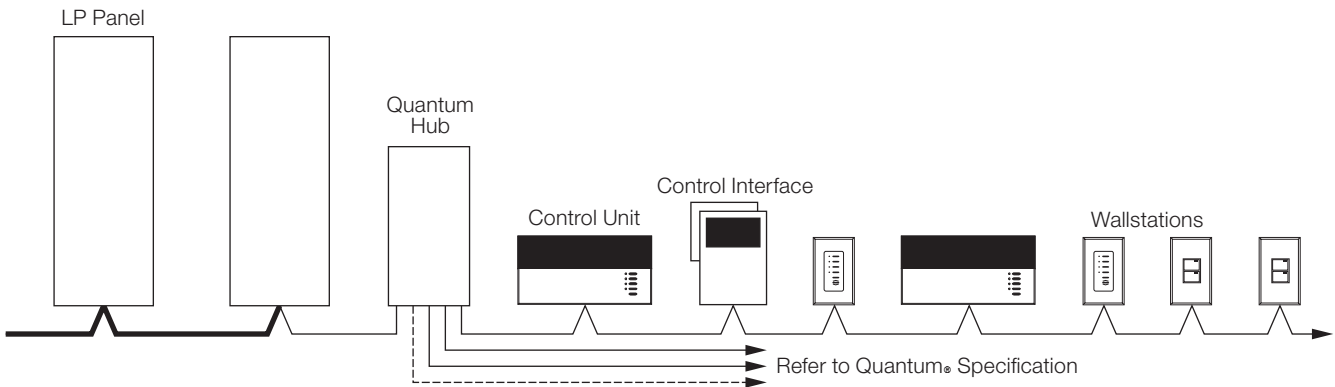
Quantum System

IEC PELV/NEC® Class 2 wiring link requires:

- Two 12 AWG (2.5 mm²) conductors for control power.
- One twisted, shielded pair of 18 AWG (1.0 mm²) for data link.
- One 18 AWG (1.0 mm²) conductor for emergency (essential) sense line, from panel to panel.

Total length of control link may be no more than 2000 ft (600 m).

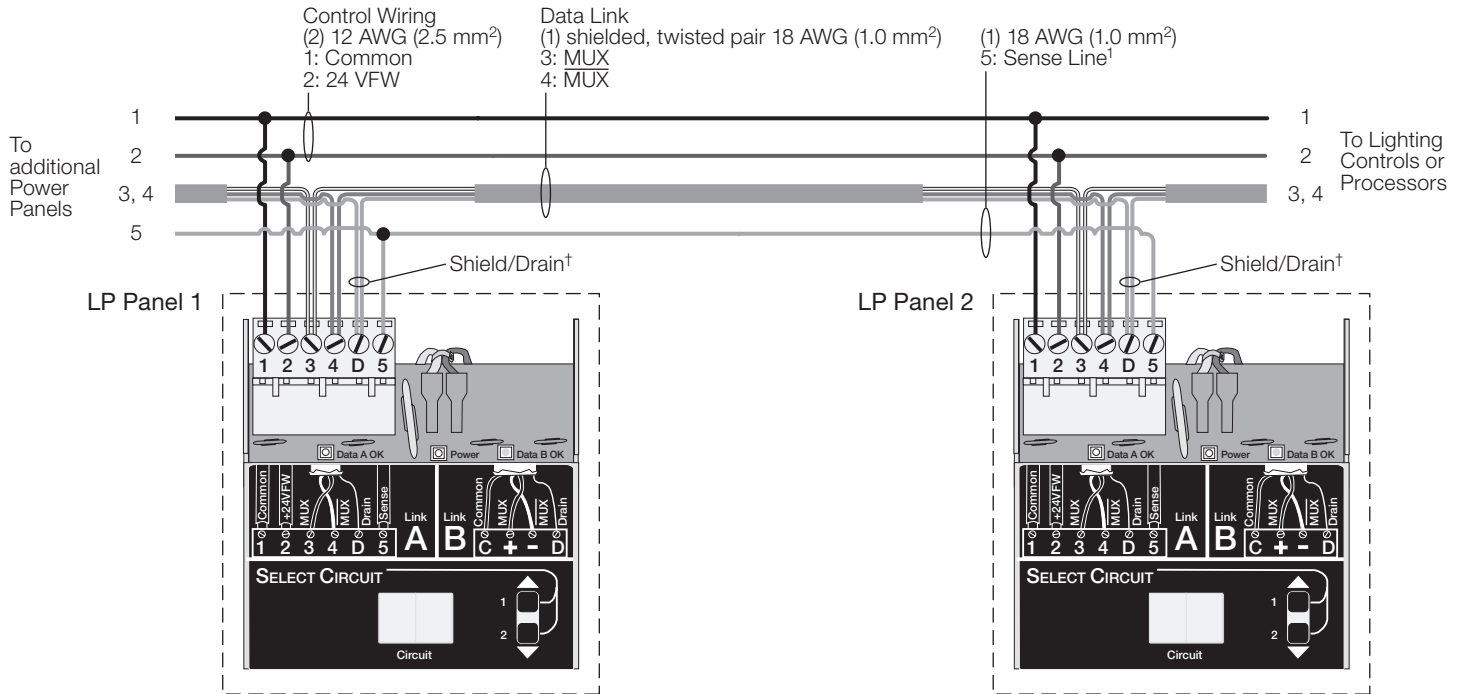
If MUX-RPTR interface and GRX-CBL-46L cable¹ is used, length may be up to 4000 ft (1200 m).



¹ GRX-CBL-46L IEC PELV/NEC® Class 2 wiring cable is available from Lutron and contains:
 Two 12 AWG (2.5 mm²) conductors for control power.
 One twisted, shielded pair of 22 AWG (0.625 mm²) for data link.
 One 18 AWG (1.0 mm²) conductor for emergency (essential) sense line.

Job Name:	Model Numbers:
Job Number:	

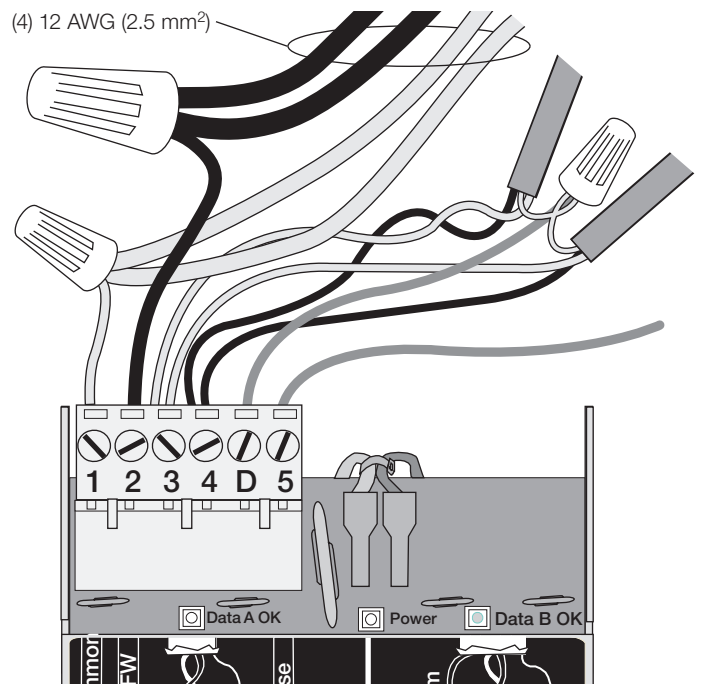
IEC PELV/NEC® Class 2 Panel-to-Panel Wiring (All Models)



- Notes
- * Emergency power: The additional 18 AWG (1.0 mm²) wire is a “sense” line from terminal 5 of another panel. This sense line allows an emergency (essential) lighting panel to “sense” when normal (non-essential) power is lost. If more than one emergency lighting panel needs to sense from a specific normal panel, a dedicated wire between each pair of normal (non-essential) and emergency (essential) panels may be required.
 - † Shield/Drain: Connect shielding as shown. Do not connect to ground (earth) or circuit board of circuit selector. Connect the bare drain wires and cut off the outside shield.

IEC PELV/NEC® Class 2 Terminal Connections

Each Low-Voltage IEC PELV/NEC® Class 2 terminal can accept only two 18 AWG (1.0 mm²) wires. Two 12 AWG (2.5 mm²) conductors won't fit. Connect as shown, using appropriate wire connectors.



Job Name:	Model Numbers:
Job Number:	

Options

Consult Lutron for ordering information and model numbers. Dimensions and wiring may change based on options chosen.

Option	Description	Application
Double Lug Sets	Allows multiple Panels to be fed from the same feed.	A single feed and multiple LP Dimming Panels are required.
Branch Circuit Protection	Branch Circuit Breakers with higher AIC ratings than those on standard Panels. Panels can also have Branch Circuit Breakers with special ratings such as: <ul style="list-style-type: none"> • GFI (Ground Fault Interrupt) • ELB (Earth Leakage Breaker) • RCD (Residual Circuit Device). 	—
Lutron Ten-Volt Module (TVM)	Allows Panels to operate fluorescent ballasts that meet IEC 929 standards for 0–10 V control including: <ul style="list-style-type: none"> • Lutron TVE ballasts • 0–10 V neon • PWM fluorescent • Tridonic DSI (Digital Serial Interface). The TVM can sink or source 50 mA (typically 25–50 ballasts) on each circuit. 	Jobs with fluorescent ballasts that require 0–10 V, PWM, or DSI control.
2Link	<ul style="list-style-type: none"> • Allows a DMX512 theatrical console to operate Dimming Panels' load circuits. • Allows a GRAFIK Eye 4000 Series to handle 128 zones (2 links of 64 zones). The 2 links are independent and do not communicate. Contact Lutron for further details. 	<ul style="list-style-type: none"> • Control of architectural lighting from a DMX512 theatrical console is required. • A mix of architectural and theatrical lighting exists on the job.

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 SPECIFICATION SUBMITTAL

Page

Job Name:	Model Numbers:
Job Number:	