LP Dimming Panels

Mini LP1/4–LP3/12

Standard-Size
LP4/28–LP8/32

DESCRIPTION

- Ideal for projects with lots of small loads.
- Provide power and dimming for up to 32 dimming legs.
- Work directly with incandescent, magnetic low voltage, and neon/cold cathode lighting.
- Work with electronic low voltage lighting and Lutron TuWire™ Fluorescent Dimming Ballasts via Power Interfaces.

Prewired! Just...

- Bring in feed wiring.
- Wire the dimming legs to the loads.

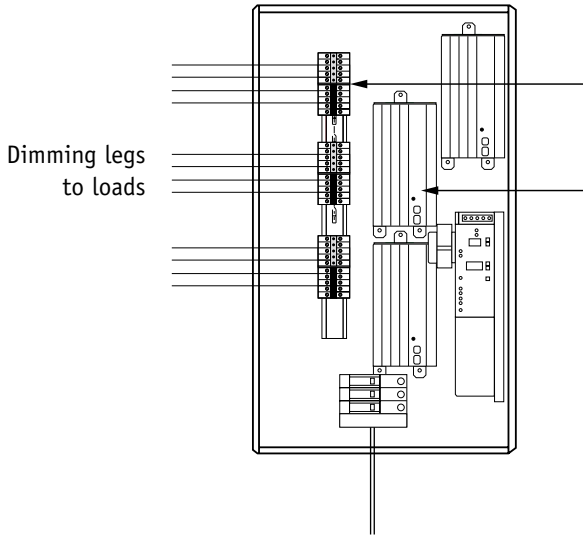
Models available with:

- 100-127V, 220-240V (non CE), or 230V (CE) input power.
- 1 to 8 Dimming Modules for 4 to 32 dimming legs.
- Different feed types and breakers.

LP Dimming Panels work with:

- GRX-4000 Control Units
- GRAFIK 5000 and 6000 Systems
- GP Dimming Panels and XP Switching Panels
- DMX512 dimming systems via the 2LINK™ option.

TYPICAL LP PANEL (LP3/12) (Cover off)



JOB NAME:	MODEL NUMBERS:	
JOB NUMBER:		

SPECIFICATIONS

Standards
- UL Listed (Reference: UL File 42071).
- Complies with ISO-9000, CSA, NOM, or CE (where appropriate).

Power
- Input power: 100-127V, 220-240V (non CE), and 230V (CE). All voltages 50/60Hz, phase-to-neutral.
- Branch Circuit Breakers: UL-rated thermal magnetic. Protected by bypass jumpers. AIC ratings:
  100-127V – 10,000
  220-240V – 6000
  230V (CE) – 5,000
- Lighting strike protection: Meets ANSI/IEEE standard 62.41-1980. Can withstand voltage surges of up to 6000V and current surges of up to 3000A.
- 10-year power failure memory: Automatically restores lighting to scene selected prior to power interruption.

Sources/Load Types
Operates these sources with a smooth continuous Square Law dimming curve or on a full conduction non-dim basis:
- Incandescent (Tungsten)/Halogen
- Magnetic Low Voltage Transformer
- Lutron Tu-Wire™ Electronic Fluorescent Dimming Ballasts
- Neon/Cold Cathode

Operates these sources via Power Interfaces:
- 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 on a full conduction non-dim basis.

Dimming Modules
- Each Dimming Module can handle a fully loaded electrical circuit; up to four dimming legs per Module.
- Maximum Ratings:

VOLTAGE	CAPACITY PER DIMMING MODULE	CAPACITY PER DIMMING LEG
100-127V	16A	16A
220-240V (non CE)	16A	16A
230V (CE)	13A	10A

- 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 Class 2 (PELV) wiring connects Dimming Panels to other components.
- Line (mains) voltage: Feed and load wiring only. No other wiring or assembly required.

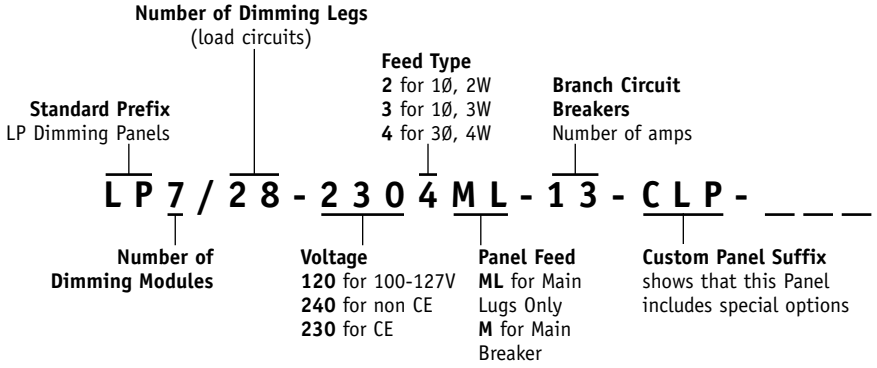
Setup
Circuit selector electronically assigns circuits to zones and sources. Permits reassignment of zones and sources without rewiring.

Physical Design
- Enclosure: NEMA-Type 1, IP-20 protection; #16 U.S. Gauge Steel. Indoors only.
- Weight: 27lb (13kg) for Mini LP, 80lb (37kg) for Standard-Size LP.

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

Environment/Heat Dissipation
32-104°F (0-40°C). Relative humidity less than 90% non-condensing.

WHAT A MODEL NUMBER TELLS YOU



LUTRON® SPECIFICATION SUBMITTAL Page

JOB NAME:	MODEL NUMBERS:	
JOB NUMBER:		

MINI LP MODELS

Only standard Panels listed. Consult Lutron for options.

100-127V Power

MODELS AVAILABLE FOR . . . NUMBER OF DIMMING MODULES	NUMBER OF DIMMING LEGS	FEED TYPE	MAXIMUM FEED SIZE	PANEL FEED
LP **1**	4	1Ø, 2W	20A	15A or 20A[1] Branch Circuit Breakers
LP **2**	8	1Ø, 2W 1Ø, 3W	40A 20A	
LP **3**	12	1Ø, 2W 1Ø, 3W 3Ø, 4W	60A 40A 20A	

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

220-240V (non CE) Power

MODELS AVAILABLE FOR . . . NUMBER OF DIMMING MODULES	NUMBER OF DIMMING LEGS	FEED TYPE	MAXIMUM FEED SIZE	PANEL FEED
LP **1**	4	1Ø, 3W	16A	16A Branch Circuit Breakers
LP **2**	8	1Ø, 3W	32A	
LP **3**	12	1Ø, 3W 3Ø, 4W	48A 16A	

230V (CE) Power

MODELS AVAILABLE FOR . . . NUMBER OF DIMMING MODULES	NUMBER OF DIMMING LEGS	FEED TYPE	MAXIMUM FEED SIZE	PANEL FEED
LP **1**	4	1Ø, 3W	13A	13A Branch Circuit Breakers
LP **2**	8	1Ø, 3W	26A	
LP **3**	12	1Ø, 3W 3Ø, 4W	39A 13A	

WIRE SIZES

Feed Wiring

- Power (Hot/Live) wires connect directly to Branch Circuit Breakers:

100-127V	#14 AWG (2.0mm^2) to #10 AWG (4.0mm^2)
220-240V 230V (CE)	#18 AWG (1.0mm^2) to #4 AWG (25mm^2)

- Neutral wire connects to Neutral Lug:

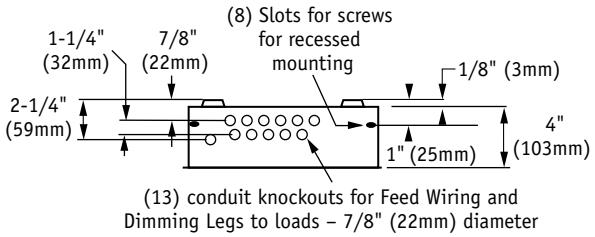
100-127V	#14 AWG (2.0mm^2) to #2/0 AWG (70mm^2)
220-240V 230V (CE)	#14 AWG (2.0mm^2) to #8 AWG (6.0mm^2)

Dimming Legs (to Loads)

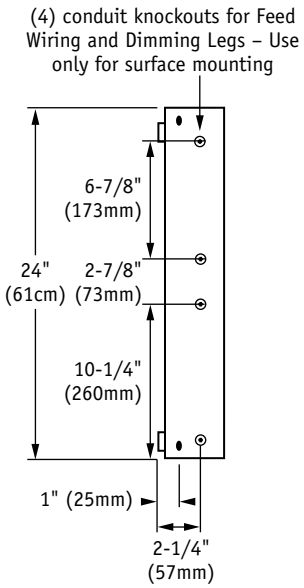
#14 AWG (2.0mm^2) to #10 AWG (4.0mm^2)

MINI LP DIMENSIONS

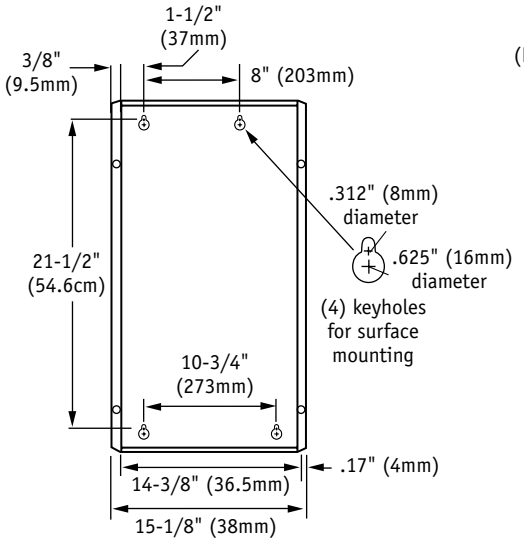
Top View



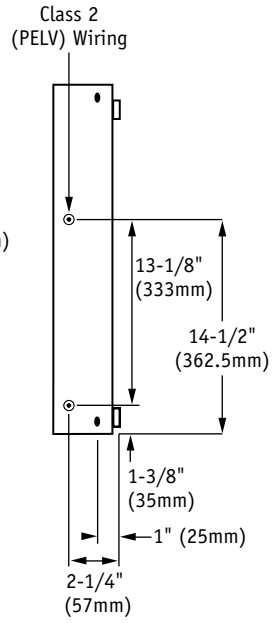
Left Side View



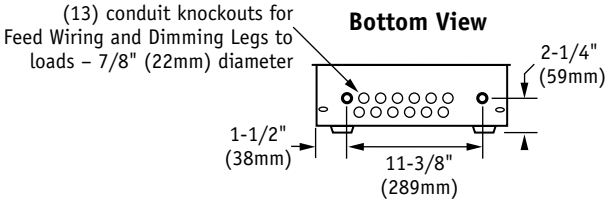
Front View



Right Side View



Bottom View



MINI LP MOUNTING

Surface or recess mount indoors.

- Consult Dimensions page for dimensions, conduit knockouts, and mounting holes and hardware.
- 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 you will void the warranty.
- Mount Panels where audible noise is acceptable. (Internal relays click.)
- Mount Panels so line (mains) voltage wiring is at least 6 feet (1.8m) from sound or electronic equipment and wiring.
- Mount Panel within 7° of true vertical.

PANEL	MAXIMUM BTUS/HOUR	WEIGHT (WITHOUT PACKAGING)
LP1	180	27lb (13kg)
LP2	240	27lb (13kg)
LP3	302	27lb (13kg)

Maximum Feed and Wire Sizes
Consult Wiring Overview page.

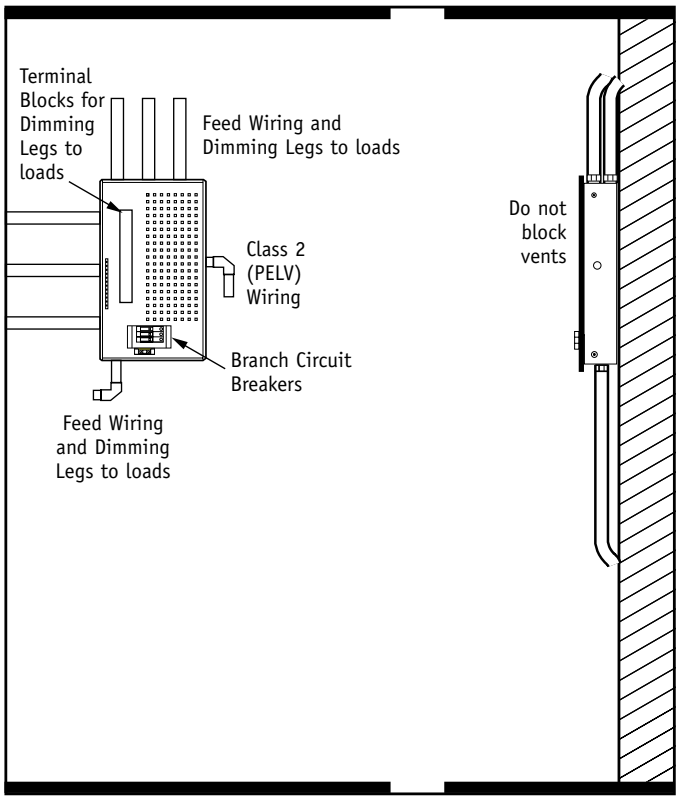
Surface Mounting

- Lutron recommends you use 1/4" (6mm) mounting bolts.

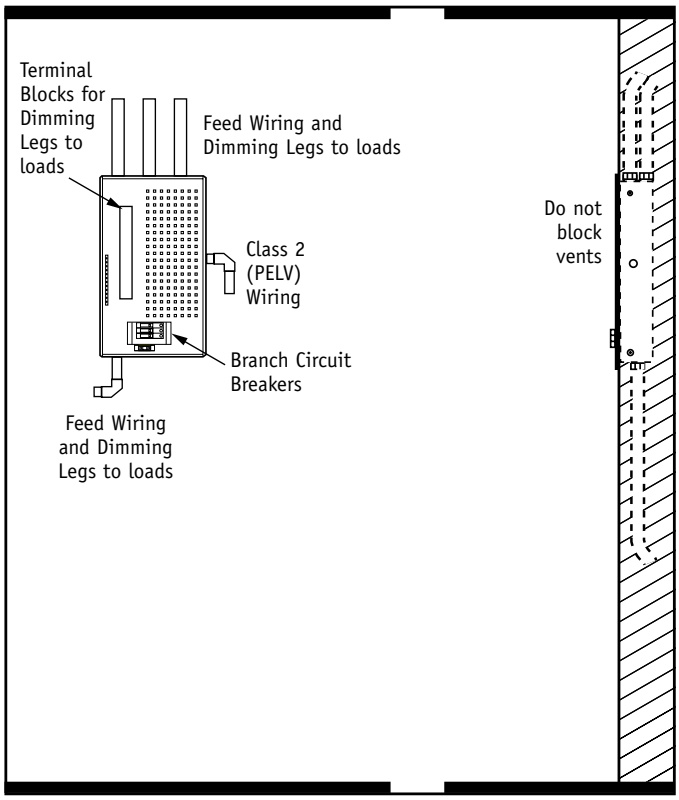
Recess Mounting

- Mount Panel flush to 1/8" (3mm) below finished wall surface.
- Allow room for top cover. Leave 1 1/2" (38mm) clearance to each side of Panel.

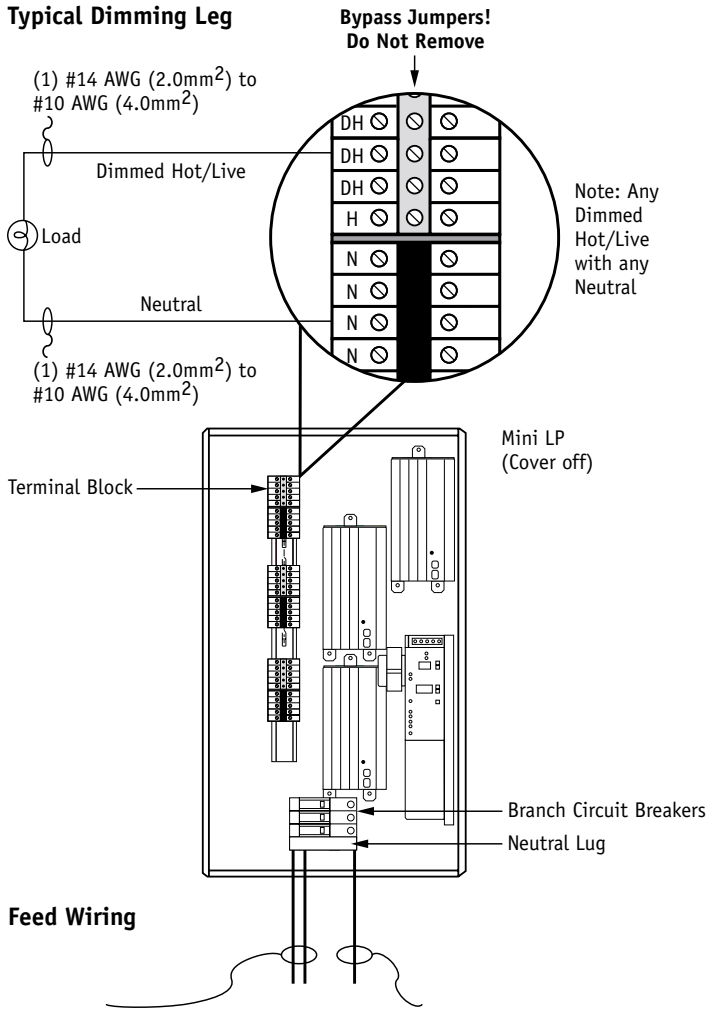
Front View **Side View**



Front View **Side View**



MINI LP WIRING



Power (Hot/Live)		Neutral	
100-127V	#14 AWG (2.0mm²) to #10 AWG (4.0mm²)	**100-127V**	#14 AWG (2.0mm²) to #2/0 AWG (70mm²)
220-240V 230V (CE)	#18 AWG (1.0mm²) to #4 AWG (25mm²)	**220-240V 230V (CE)**	#14 AWG (2.0mm²) to #8 AWG (6.0mm²)

Wiring Tips!

You wire the Mini LP similar to wiring a lighting Distribution Panel.

- You run feed and load wiring. No other wiring or assembly required.
- Run separate neutrals for each module - no common neutrals across phases.

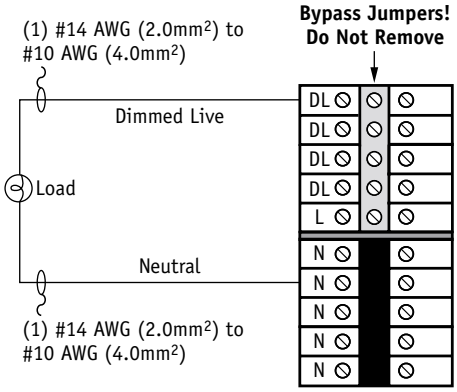
You can use the Mini LP to provide temporary lighting.

- Wire all loads.
- Do not remove the bypass jumpers that protect the Dimming Modules.
- Use Branch Circuit Breakers to switch lights on and off.

TYPICAL DIMMING LEGS FOR 230V (CE)

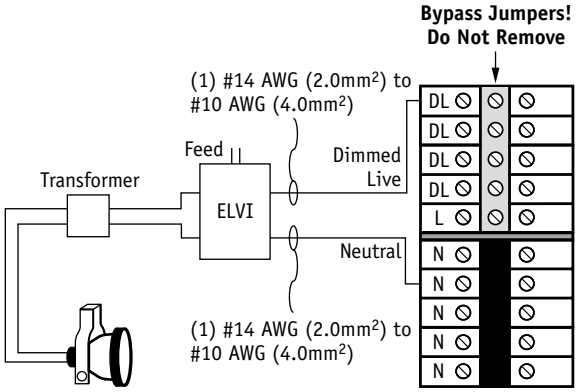
All Load Types except

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



Electronic Low Voltage

- Use Lutron ELVI Electronic Low Voltage Interface.

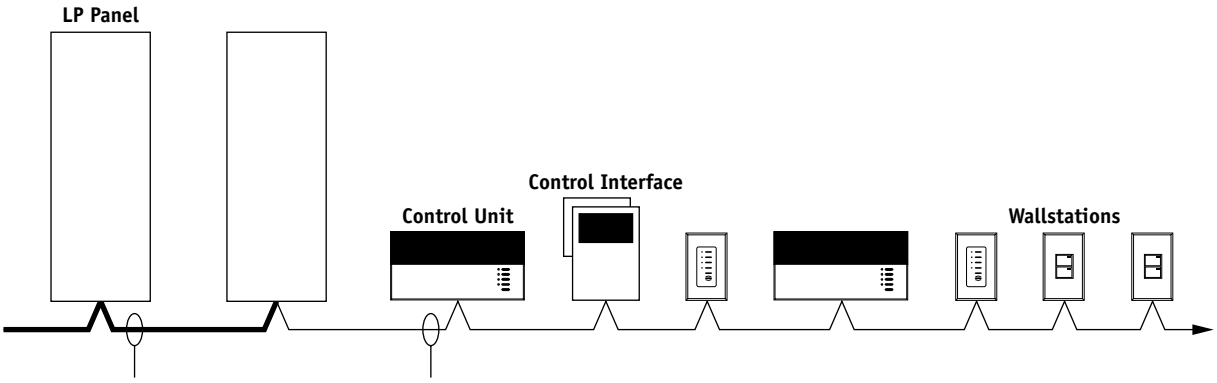


LOW-VOLTAGE CLASS 2 (PELV) WIRING (ALL MODELS)

Pull low-voltage Class 2 wiring[1] for system communications.
- Must be daisy-chained!
- Must run separately from line (mains) voltage.

SERIES 4000 GRAFIK EYE

The Class 2 (PELV) wiring link for system communications must be less than 2000 feet (600m).

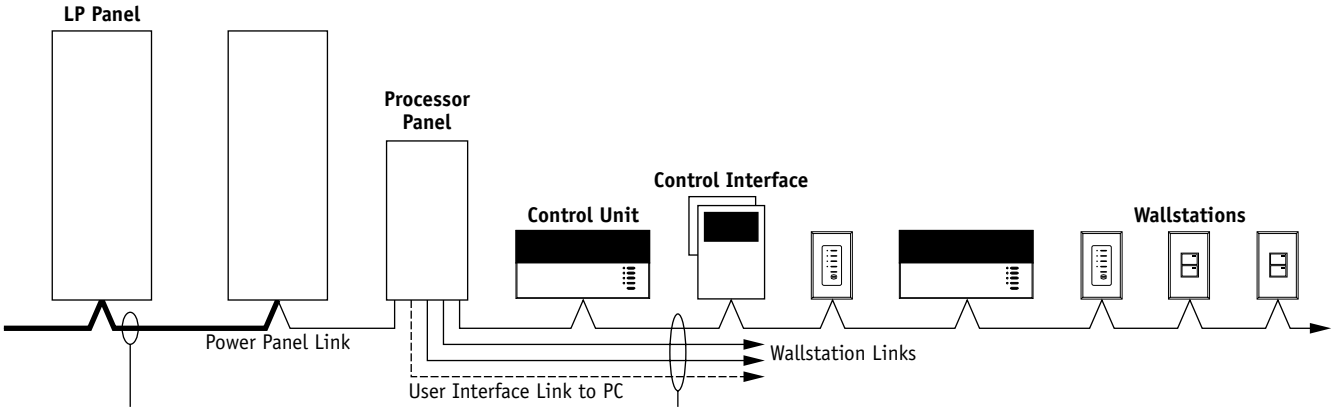


Panel-to-Panel wiring[1]
Include one extra #18 AWG (1.0mm²). Used as a "sense line" for emergency (essential) lighting.

Class 2 (PELV) wiring link has:
- Two #12 AWG (2.5mm²) conductors for control wiring.
- One shielded, twisted pair #18 AWG (1.0mm²) for data link.

GRAFIK 5000/6000 SYSTEMS

Class 2 (PELV) wiring links for system communications can be up to 4000 feet (1200m):
- Use Lutron's MUX-RPTR Interface and GRX-CBL-46L cable for links between 2000 feet (600m) and 4000 feet (1200m).
- Wire as shown for links 2000 feet (600m) and less.

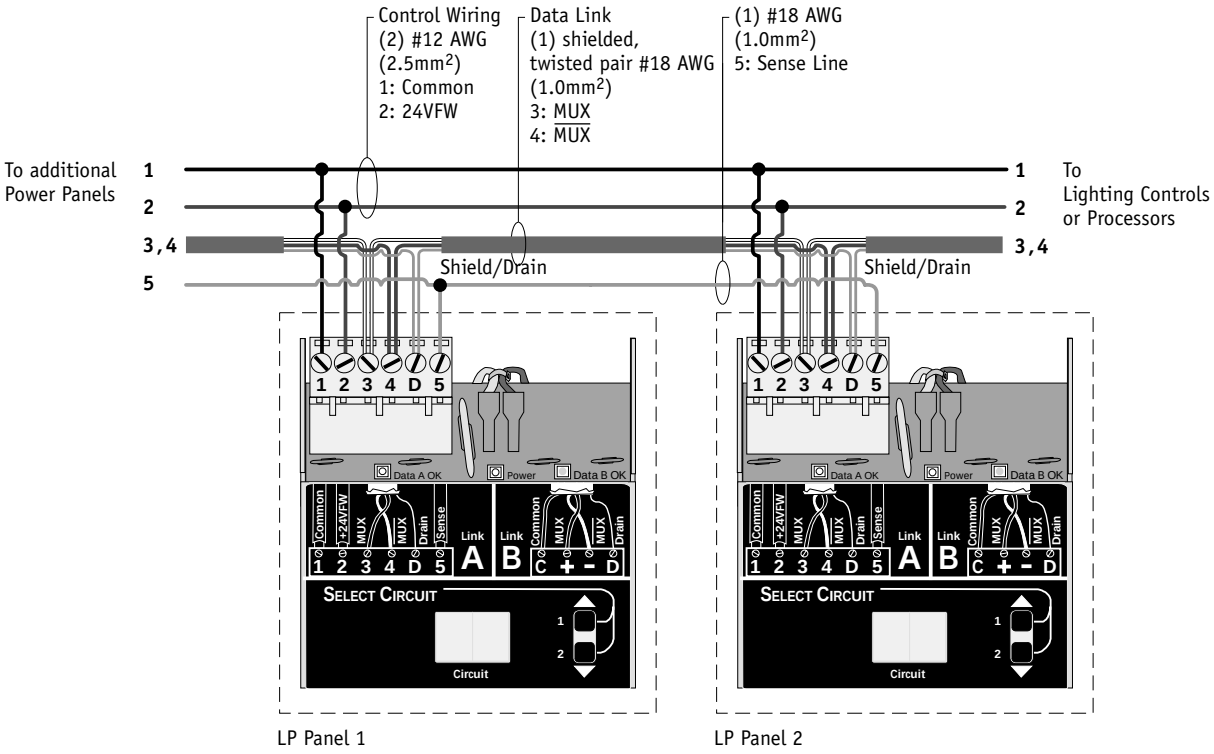


Panel-to-Panel wiring[1]
Include one extra #18 AWG (1.0mm²). Used as a "sense line" for emergency (essential) lighting.

Each Class 2 (PELV) wiring link has:
- Two #12 AWG (2.5mm²) conductors for control wiring.
- One shielded, twisted pair #18 AWG (1.0mm²) for data link.

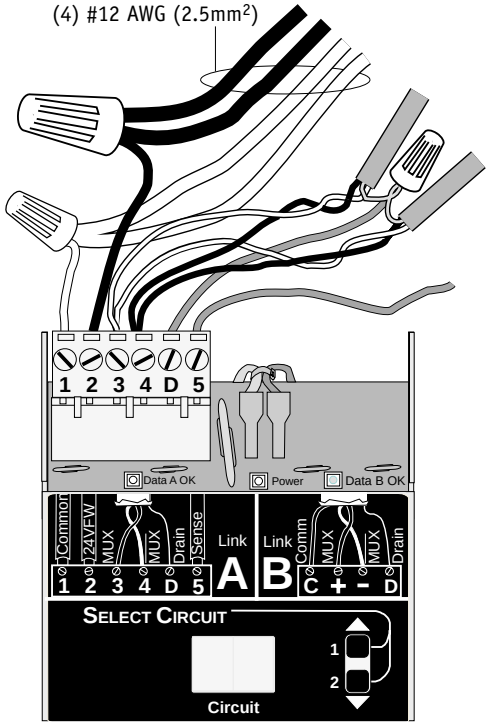
[1] If you use Lutron cable, you can use smaller-gauge wires.
- If a Class 2 (PELV) wiring link is less than 500 feet (150m), you can use GRX-CBL-346S:
  - Two #18AWG (1.0mm²) for control wiring.
  - One twisted, shielded pair #22AWG (.625mm²) for data link.
  - No "sense line" included - add your own #18AWG (1.0mm²).
- If a Class 2 (PELV) wiring link is 500 to 2000 feet (150 to 600m), you can use GRX-CBL-46L:
  - Two #12AWG (2.5mm²) for control wiring.
  - One twisted, shielded pair #22AWG (.625mm²) for data link.
  - One #18AWG (1.0mm²) for sense line between Panels.
- Lutron has also approved smaller-gauge cable from Belden, Liberty, Alpha, and Signature. Ask for Lutron GRAFIK Eye® Cable.

CLASS 2 (PELV) PANEL-TO-PANEL WIRING (ALL MODELS)



Notes:

1. Emergency Power: The additional #18 AWG (1.0mm²) 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 off a specific Normal Panel. You may have to run a dedicated wire between each pair of Normal (Non-Essential) and Emergency (Essential) panels.
2. Shield/Drain: Connect shielding as shown.
   - Do not connect to Ground (Earth) or Circuit Selector.
   - Connect the bare drain wires and cut off the outside shield.



CLASS 2 (PELV) TERMINAL CONNECTIONS

Each low-voltage Class2 (PELV) terminal can accept only two #18 AWG (1.0mm²) wires. Two #12 AWG (2.5mm²) conductors won't fit. Connect as shown.

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.	You want a single feed but need multiple LP Dimming Panels.
Delta Power	Allows Panels to accept Delta power feeds (phase-to-phase). Available for 240V only. Limited to 10A, 2-pole circuits.	Areas that have Delta Power.
Branch Circuit Protection	Branch Circuit Breakers have higher AIC ratings than those on standard Panels. Panels can also have Branch Circuit Breakers with special ratings such as: • 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 0-10V control including: • Lutron's TVE ballasts • 0-10V neon • PWM fluorescent • Tridonic DSI (Digital Serial Interface). The TVM can sink or source 50mA (typically 25-50 ballasts) on each circuit.	Jobs with fluorescent ballasts that require 0-10V, PWM, or DSI control.
2Link™	• Allows a DMX512 theatrical console to operate Dimming Panels' load circuits. • Allows a GRAFIK Eye 4000 System to handle 128 zone (two links of 64 zones). The two links are independent and do not communicate.	• When you need to control architectural lighting from a DMX512 theatrical console. • When you need to mix architectural and theatrical lighting.