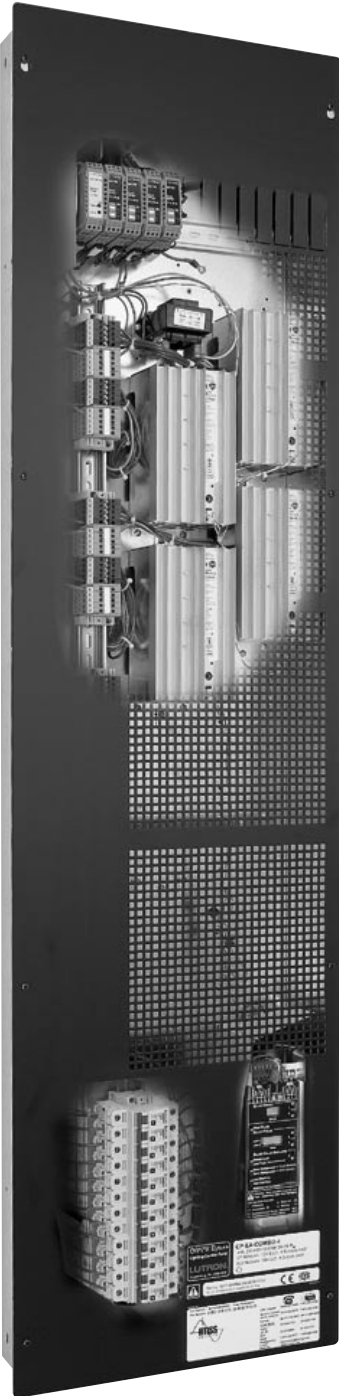


# CCP Custom Combination Dimming Panels



## DESCRIPTION

- Ideal for projects with many small loads.
- Provides power (230 V CE only) and dimming for 4 to 32 dimming legs.
- LP Dimming Modules work directly with incandescent, leading edge electronic low voltage, magnetic low voltage, and neon/cold cathode lighting.
- ELV Dimming Modules work with trailing edge electronic low voltage and incandescent lighting.
- TVM Low-Voltage Control modules (max 12 modules, 24 dimming legs total per panel) work with 0-10 V and DSI\* controlled dimming ballasts.

\* DALI intensity broadcast is available with Load Type 2-7 on the Circuit Selector. This function is the same as DSI; the ballasts are **not** addressable.

## Prewired! Just...

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

## Models available with:

- 230 V (CE) input power.
- 1 to 8 Dimming Modules for 4 to 32 dimming legs.

## CCP Dimming Panels work with:

- GRX-4000 Control Units
- GRAFIK 5000 and 6000 Systems
- GP Dimming Panels and XP Switching Panels
- Homeworks Interactive™

JOB NAME:	MODEL NUMBERS:	
JOB NUMBER:		

**SPECIFICATIONS**

**Standards**

- Complies with CE.

**Power**

- Input power: 230 V (CE). All voltages 50/ 60Hz, phase-to-neutral.
- Input Circuit Breakers: protected by bypass jumpers  
AIC rating: 230 V - 5,000
- Lighting 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.

**Sources/ Load Types**

Operates these sources with a smooth continuous Square Law dimming curve or on a full conduction non-dim basis:

**LP Dimming Modules**

- Incandescent (Tungsten)/ Halogen
- Magnetic low voltage transformer
- Leading edge electronic low voltage
- Neon/ Cold Cathode

Operates HID sources on a full conduction non-dim basis.

**ELV Dimming Modules**

- Trailing edge electronic low voltage transformer via dedicated internal Dimming Modules
- Incandescent (Tungsten)/ Halogen

**TVM Low-Voltage Control Modules**

- Each Module controls two consecutive dimming legs of lighting for 0-10V and DSI\* ballasts.
- 50 mA maximum low-voltage ballast control current per dimming leg.
- 750 mA maximum low-voltage ballast control current per panel.

\* DALI intensity broadcast is available with Load Type 2-7 on the Circuit Selector. This function is the same as DSI; the ballasts are **not** addressable.

**Dimming Modules**

- Maximum Ratings:

VOLTAGE	CAPACITY PER DIMMING MODULE	CAPACITY PER CIRCUIT
230 V (CE)	LP - 13A ELV - 16A	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 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: 37 kg (80 lbs.)

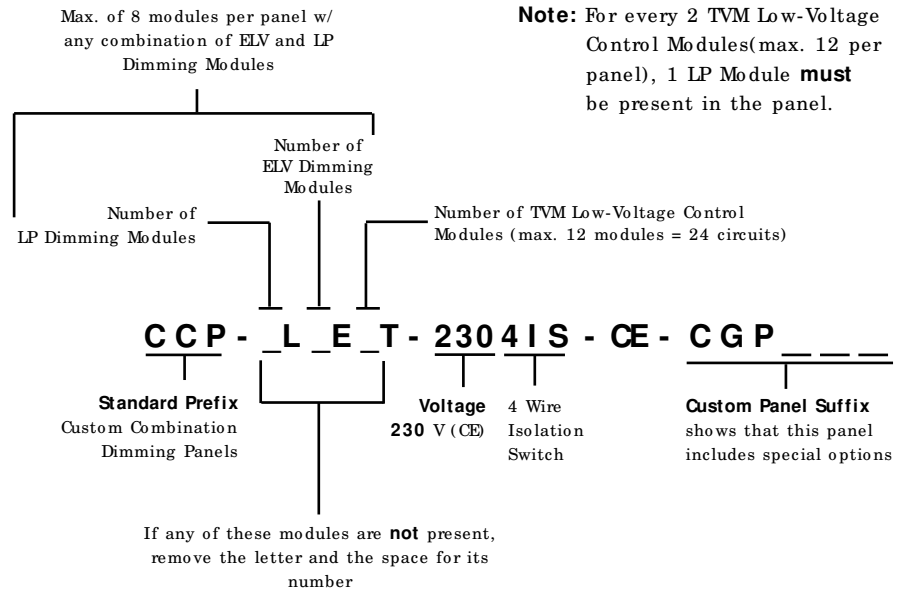
**Mounting**

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

**Environment/ Heat Dissipation**

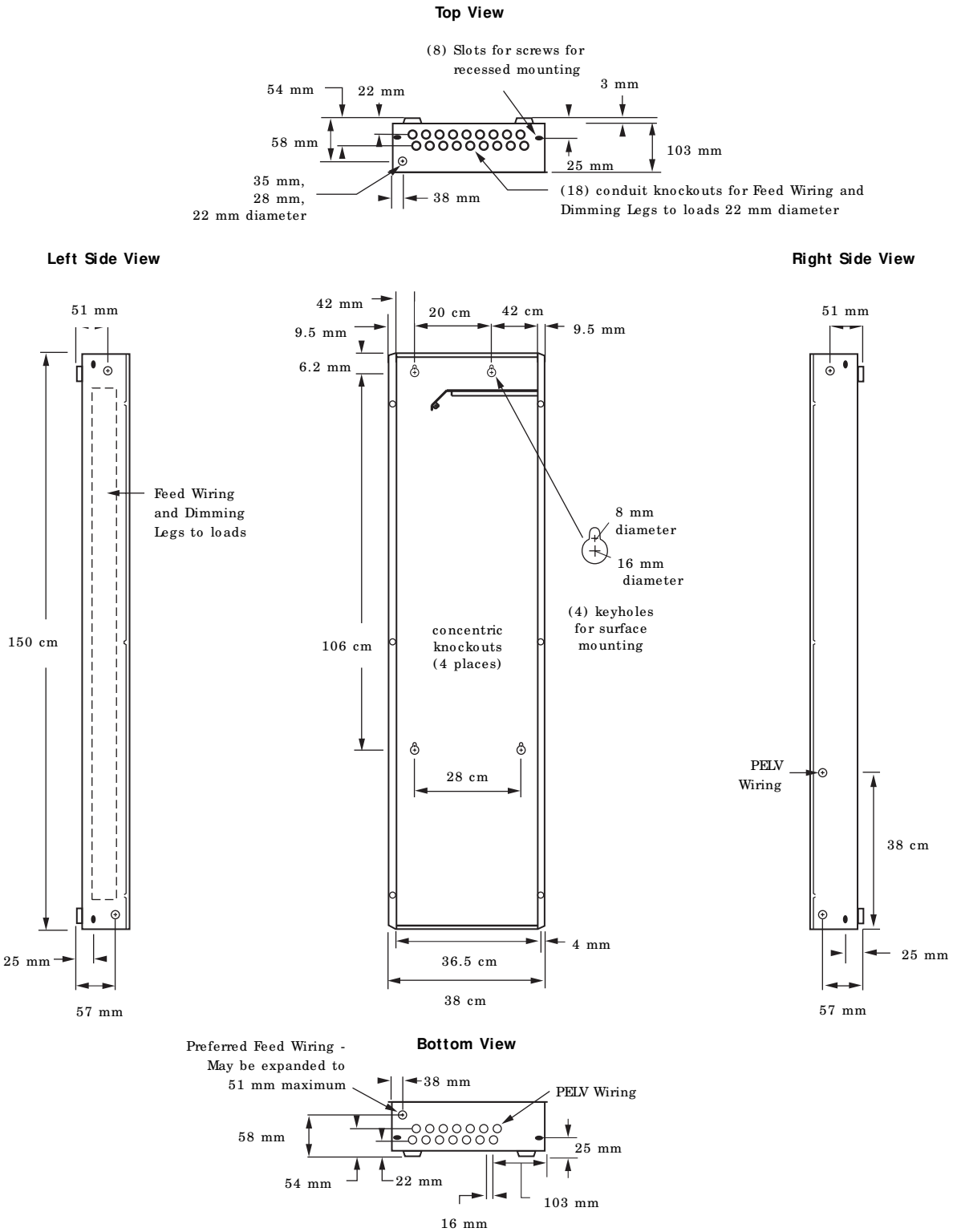
0-40° C (32-104° F). Relative humidity less than 90% non-condensing.

**WHAT A MODEL NUMBER TELLS YOU**



JOB NAME:	MODEL NUMBERS:	
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STANDARD-SIZE CCP DIMENSIONS



JOB NAME:	MODEL NUMBERS:	
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JOB NUMBER:	<input type="text"/>	<input type="text"/>

**STANDARD-SIZE 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 0 - 40° C (32-104° F).
- This equipment is air-cooled.  
**Do not block vents or you will void the warranty.**  
Leave 31 cm clearances in front of Panel.
- 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 1.8 m from sound or electronic equipment and wiring.
- Mount Panel within 7° of true vertical.

**Surface Mounting**

- Lutron recommends you use 6 mm mounting bolts.

**WIRE SIZES**

**Feed Wiring**

Connects to Iso Switch:

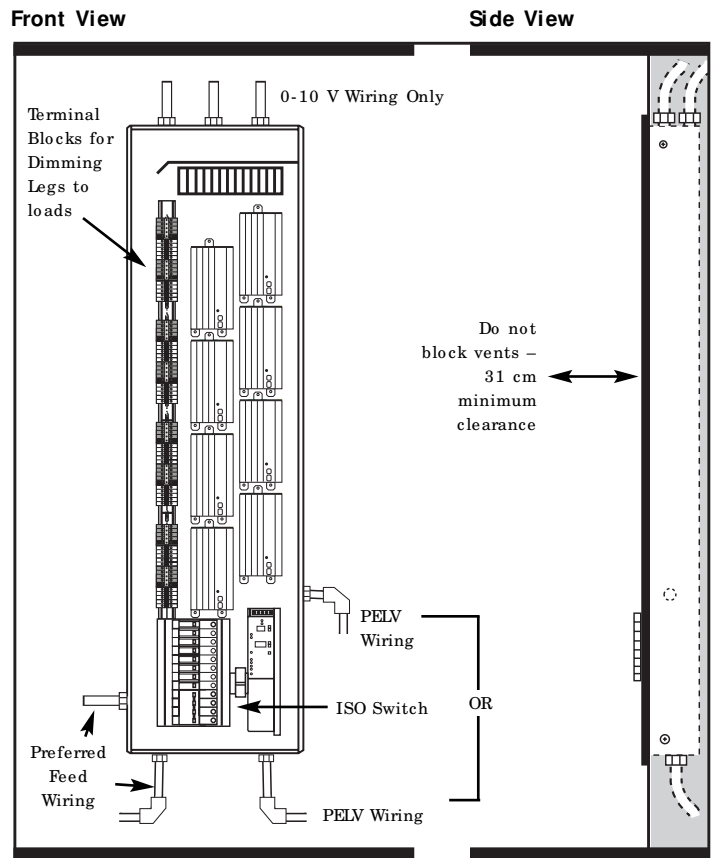
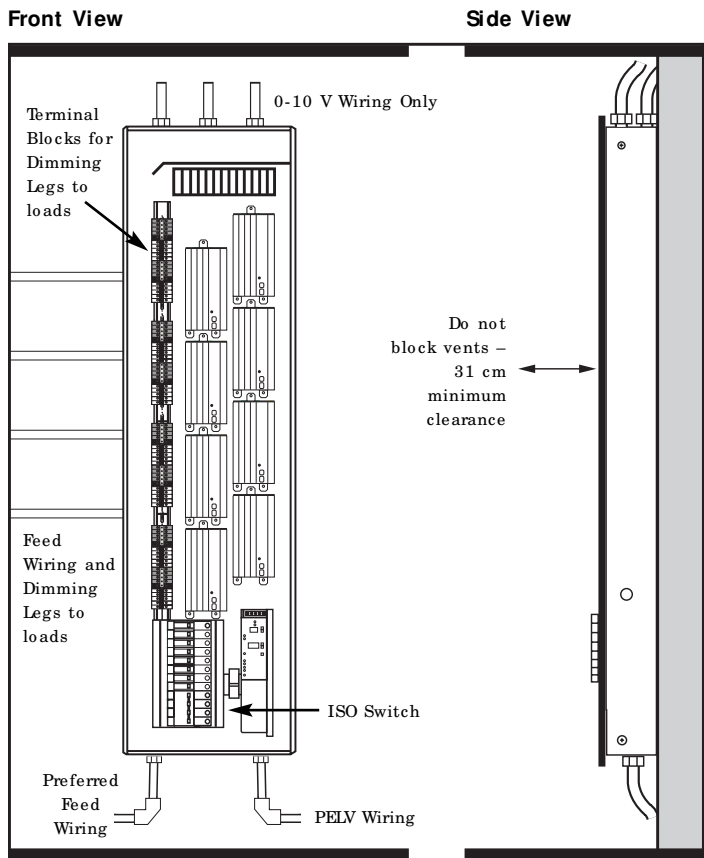
<b>Power (Live)</b>	(3) 2.5 mm <sup>2</sup> to 35 mm <sup>2</sup>
<b>Neutral</b>	(1) 2.5 mm <sup>2</sup> to 35 mm <sup>2</sup>

**Dimming Legs (to Loads)**

2.5 mm<sup>2</sup> to 6.0 mm<sup>2</sup>

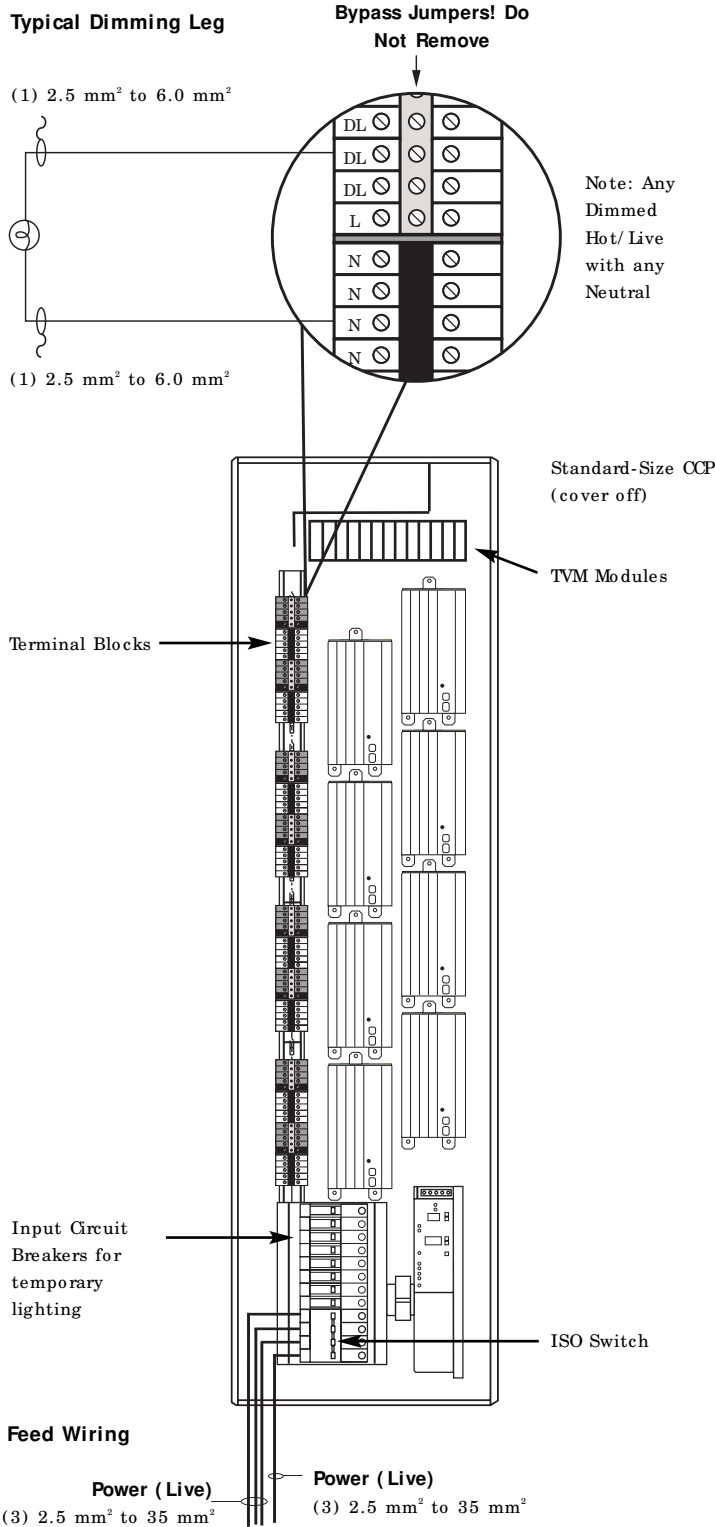
**Recess Mounting**

- Mount Panel flush to 3 mm below finished wall surface.
- Allow room for top cover. Leave 38 mm clearance to each side of Panel.



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STANDARD-SIZE CCP WIRING



**Wiring Tips!**

You wire the Custom Combination Dimming Panel 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 Custom Combination Dimming Panel to provide temporary lighting.

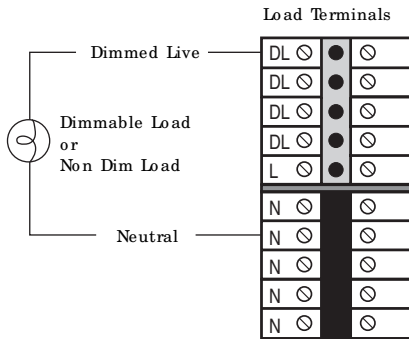
- Wire all loads.
- Do not remove the bypass jumpers that protect the Dimming Modules.
- Use Input Circuit Breakers to switch lights on and off.

JOB NAME:	MODEL NUMBERS:	
JOB NUMBER:		

**TYPICAL DIMMING LEGS FOR 230 V ( CE)**

**Load Wiring for LP Module:**

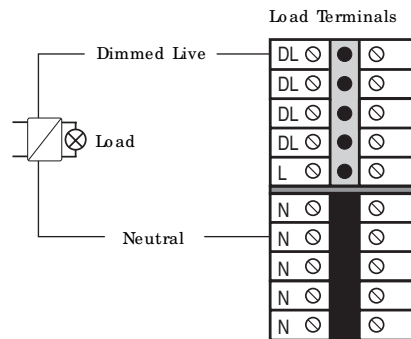
For all load types except ELV and fluorescent dimming ballasts.



**Load Wiring for ELV Module:**

For incandescent\* and dimmable reverse phase control electronic low voltage loads.

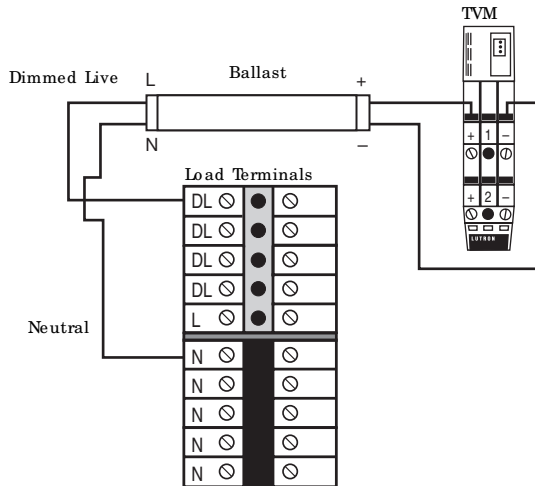
\* Load type 5-1 **must** be selected at the Circuit Selector regardless of the load type.



**Load Wiring for TVM Module:**

For 0-10V, PWM, DSI, and DALI\* loads. Each TVM controls two consecutive dimming legs of lighting and are the first dimming legs in the panel. Maximum low-voltage ballast control current: 50 mA per zone, 750 mA per panel.

\* Intensity broadcast only.



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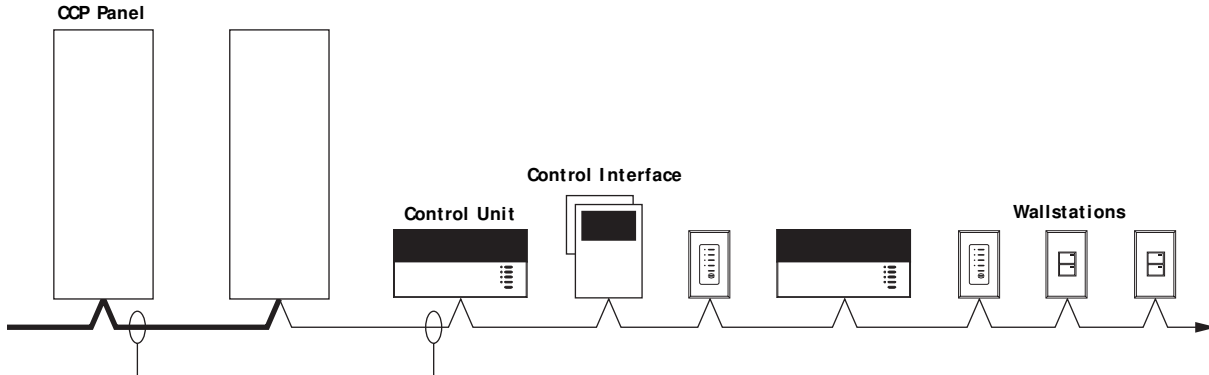
**LOW-VOLTAGE PELV WIRING ( ALL MODELS)**

Pull low-voltage PELV wiring<sup>1</sup> for system communications.

- Must be daisy-chained!
- Must run separately from line (mains) voltage.

**SERIES 4000 GRAFIK EYE**

The PELV wiring link for system communications must be less than 610 m.



**Panel-to-Panel wiring<sup>1</sup>**  
 Include one extra 1.0mm<sup>2</sup>.  
 Used as a “sense line” for emergency (essential) lighting.

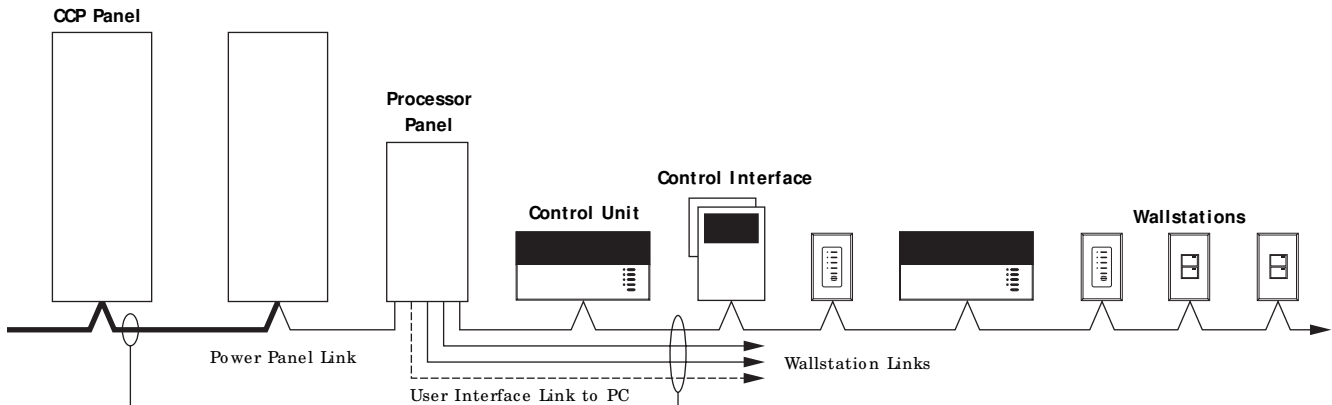
**PELV wiring link has:**

- Two 2.5mm<sup>2</sup> conductors for control wiring.
- One shielded, twisted pair 1.0mm<sup>2</sup> for data link.

**GRAFIK 5000/ 6000 SYSTEMS**

PELV wiring links for system communications can be up to 1220 m:

- Use Lutron’s MUX-RPTR Interface and GRX-CBL-46L cable for links between 610 m and 1220 m.
- Wire as shown for links 610 m and less.



**Panel-to-Panel wiring<sup>1</sup>**  
 Include one extra 1.0mm<sup>2</sup>. Used as a “sense line” for emergency (essential) lighting.

**Each PELV wiring link has:**

- Two 2.5mm<sup>2</sup> conductors for control wiring.
- One shielded, twisted pair 1.0mm<sup>2</sup> for data link.

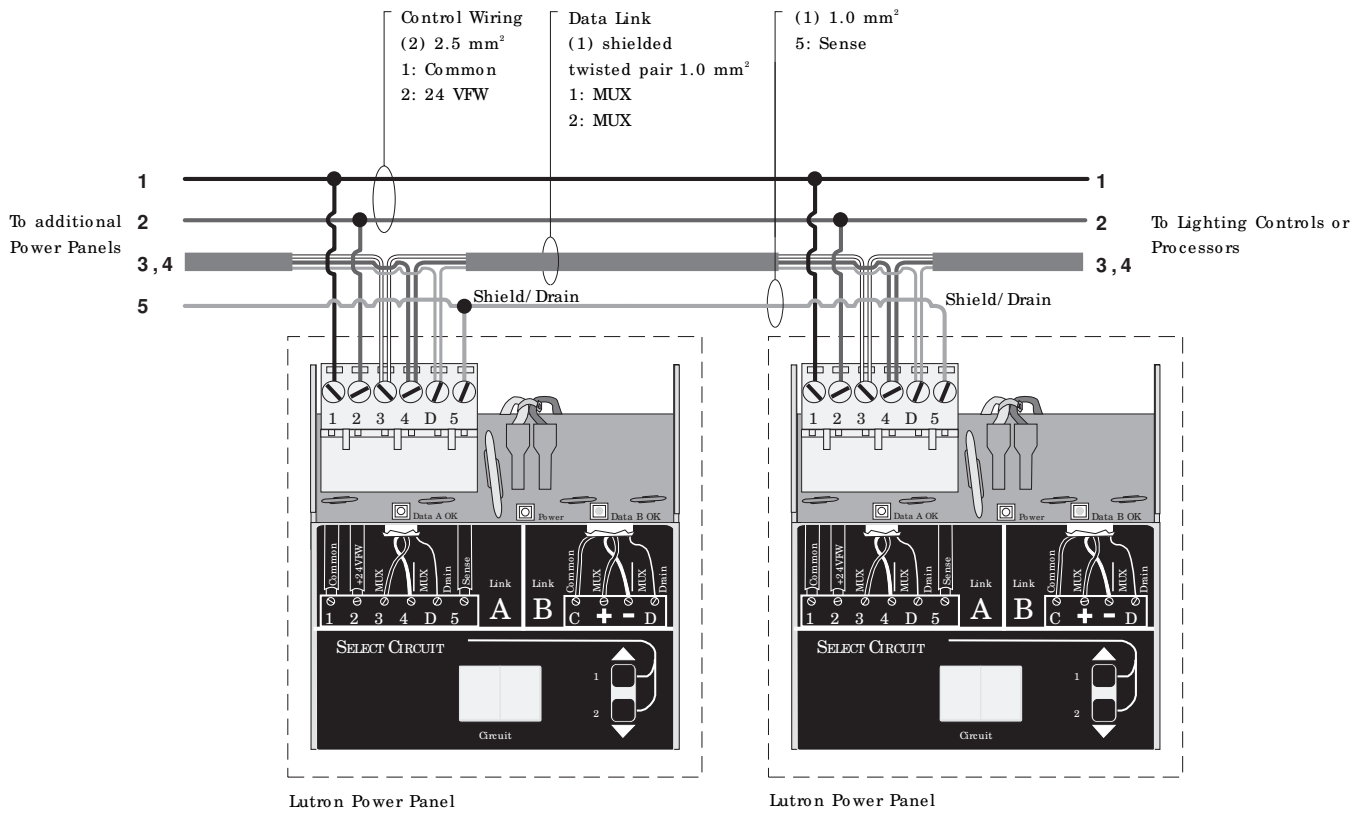
<sup>1</sup> If you use Lutron cable, you can use smaller-gauge wires.

- If a PELV wiring link is less than 150 m, you can use GRX-CBL-346S:
  - Two 1.0mm<sup>2</sup> for control wiring.
  - One twisted, shielded pair .625 mm<sup>2</sup> for data link.
  - No “sense line” included - add your own 1.0mm<sup>2</sup>.

- If a PELV wiring link is 150 to 610 m, you can use GRX-CBL-46L:
  - Two 2.5mm<sup>2</sup> for control wiring.
  - One twisted, shielded pair .625mm<sup>2</sup> for data link.
  - One 1.0mm<sup>2</sup> for sense line between Panels.
- Lutron has also approved smaller-gauge cable from Belden, Liberty, Alpha, and Signature. Ask for Lutron GRAFIK Eye® Cable.

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PELV PANEL-TO-PANEL WIRING ( ALL MODELS)

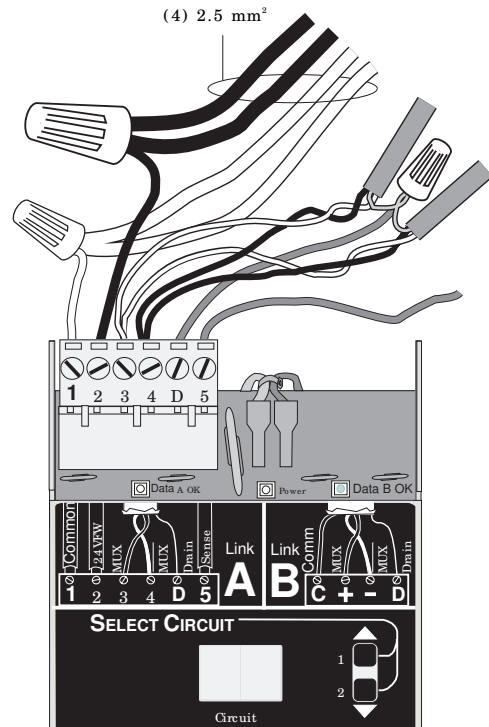


Notes:

- Emergency Power: The additional 1.0mm<sup>2</sup> 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 (Non-Essential) and Emergency (Essential) panels.
- 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.

PELV TERMINAL CONNECTIONS

Each low-voltage PELV terminal can accept only two 1.0mm<sup>2</sup> wires. Two 2.5mm<sup>2</sup> conductors won't fit. Connect as shown.



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**OPTIONS**

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

OPTION	DESCRIPTION	APPLICATION
<p><b>Lutron Ten Volt Module (TVM)</b></p>	<p>Allows Panels to operate fluorescent ballasts that meet IEC 929 standards for 0-10V control including:</p> <ul style="list-style-type: none"> <li>• Lutron’s TVE ballasts</li> <li>• 0-10V neon</li> <li>• DSI* (Digital Serial Interface).</li> </ul> <p>The TVM can sink or source 50mA (typically 25-50 ballasts) on each circuit.</p> <p>* DALI intensity broadcast is available with Load Type 2-7 on the Circuit Selector. This function is the same as DSI; the ballasts are <b>not</b> addressable.</p>	<p>Jobs with fluorescent ballasts that require 0-10V or DSI control.</p>

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