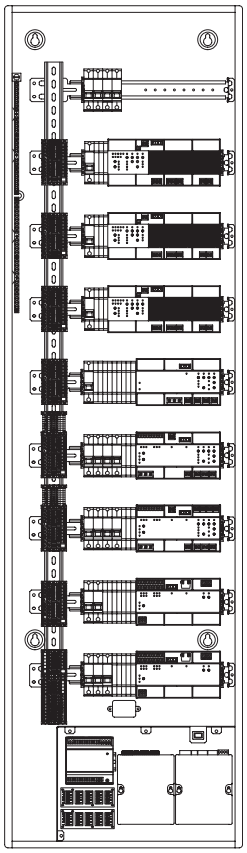
369783i 1 11.01.22

Quantum DIN Rail Panel

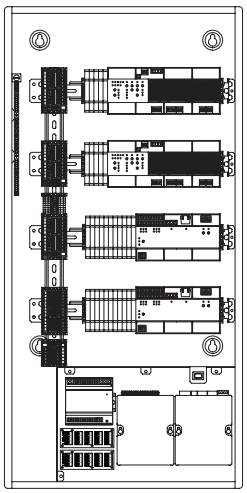
Configurable Lighting Control panels are pre-assembled and tested power panels that are configurable to control multiple load types. Safe panel design offers ease of use with a separate control equipment compartment for link management and interfacing with other systems.



1 613 mm (63.5 in) panel

Features

- Integral Quantum processor available
- Able to connect to other Quantum light management hubs
- Supports up to 10 total QSNE DIN power modules (DPMs):
  - Switching (4 circuits of 10 A each)*
  - Phase-adaptive (4 circuits of MLV, ELV, or phase control LEDs)
  - 0–10 V⎓ dimming control (4 circuits of 10 A each)*
  - EcoSystem (64 ballasts/drivers x 2 links)
  - DALI® (64 ballasts/drivers x 2 buses)
  - Motor loads
- Easy access to IEC PELV control equipment which can include a total of two of the following:
  - Network Interface (QSE-CI-NWK-E)
  - Contact Closure interface (QSE-IO)
  - DMX Interface (QSE-CI-DMX)
  - Quantum processor
- Panels are pre-wired and tested prior to shipping
- Panels are rated for 220–240 V~ and 230 V~ (CE) applications
- Feed-through, MCB, or RCBO panels available
- Simple integration of wired and wireless sensors and controls
- Easily integrates with Lutron QS devices including Lutron Sivoia QS motorized shades
- Scalable from a single area or floor; to a building or whole campus
- Integral manual override switch turns all lights on to a programmable level when activated (for 4A, 4T10, and 4S10 modules only)
- Bypass jumpers included for load mis-wire protection
- Panels are available in two sizes: 1 613 mm (63.5 in) and 921 mm (36.3 in) tall
- Front cover with vents to maximize thermal performance included
- Optional black, powder-coated doors available for all panels:
  - Reversible, hinged door with magnetic latch
  - Locking hinged door available upon request
- Schneider Electric® breakers are used



921 mm (36.3 in) panel

Note: See page 20 for a list of links to complete specification submittals

* Maximum of 10 A total in an RCBO panel

LUTRON SPECIFICATION SUBMITTAL

1

Job Name:	Model Numbers:	
Job Number:		

Specifications

Regulatory Approvals

- CE

Power

- Input: 230 V~ (CE); 220–240 V~ (non-CE) 50/60 Hz (see panel configuration for input current ratings).
- Lightning strike protection: Meets ANSI/IEEE standard C62.41-2000 and IEC 61000-4-5. Can withstand voltage surges up to 6 000 V~ and current surges up to 3 000 A.
- 10 year power failure memory: restores lighting to levels prior to power interruption.
- Branch Circuit Breakers: IEC rated
  - Current rating: 10 A
  - Rated residual current (RCBO only): 30 mA
  - Trip Curve characteristic: Type C
  - Additional breaker options available upon request
- Standby power: varies based on configuration. See the individual module and control equipment specifications available at www.lutron.com to determine what standby power a particular panel consumes.

DIN Modules Available

(maximum of 10)

- PRO LED+ phase-adaptive*
- Switching 10 A max per output
- Switching/0–10 V⎓
- Motor

(maximum of 8)**

- DALI® Universal
- EcoSystem

** **Note:** DALI® Universal/EcoSystem modules limited to four (4) per QS Link

Wiring

- **Internal:** Wired and tested by Lutron.
- **System communications:** IEC PELV wiring connects panels to control station. Wired sensors must be wired to QS Sensor Module (QSM). For system reliability, do not land sensors to DPMs within panel.
- **Line/hot (mains) voltage:** only feed and load wiring required (feed-through panels require feeds for the module power).

Mounting

- Surface- or recess-mount.

Construction

- 1.5 mm (16-gauge) galvanized sheet metal enclosure (unpainted).
- 1.5 mm (16-gauge) powder-coated (black) metal cover with ventilation holes.
- Optional door: 2.1 mm (14-gauge) powder-coated (black) metal door with ventilation holes.

Environment

- Enclosure: IP-20 protection.
- Mount where ambient temperature is 0 to 40 °C (32 to 104 °F). Relative humidity less than 90%, non-condensing.
- Indoor use only.
- Passive cooling (fan is not required)

* 80 A of dimming current maximum in panel.

continued on next page

Job Name:	Model Numbers:	
Job Number:		

Specifications *(continued)*

Line/Hot (Mains) Connections

- Use copper wire only, supply conductors 60 °C to 75 °C (140 °F to 167 °F).
- Feed-through panels
  - DIN rail-mounted terminal blocks provided for line/hot (mains) power to DPMs and to control equipment power supply.
  - DIN rail-mounted terminal blocks provided for load wiring.
- MCB and RCBO panels
  - Isolator switch provided for line/hot (mains) power. Power is distributed to branch circuit breakers, modules, and control gear via internal wiring installed by Lutron.
  - DIN rail-mounted terminal blocks provided for load wiring.

Wire Sizing

- DIN rail-mounted terminal blocks:
  - Line/hot (mains) and load terminal blocks will accept one 0.14 mm^2 to 6.0 mm^2 (26 AWG to 10 AWG) wire or two 0.14 mm^2 to 1.5 mm^2 (26 AWG to 16 AWG) wires.
  - 0–10 V⎓ control signal terminal blocks will accept one 0.14 mm^2 to 1.5 mm^2 (26 AWG to 16 AWG) wire or two 0.14 mm^2 to 0.75 mm^2 (26 AWG to 20 AWG) wires.
- Isolator switches will accept one 2.5 mm^2 to 35 mm^2 (12 AWG to 2 AWG) wire per pole.

Quantum Processor (optional)

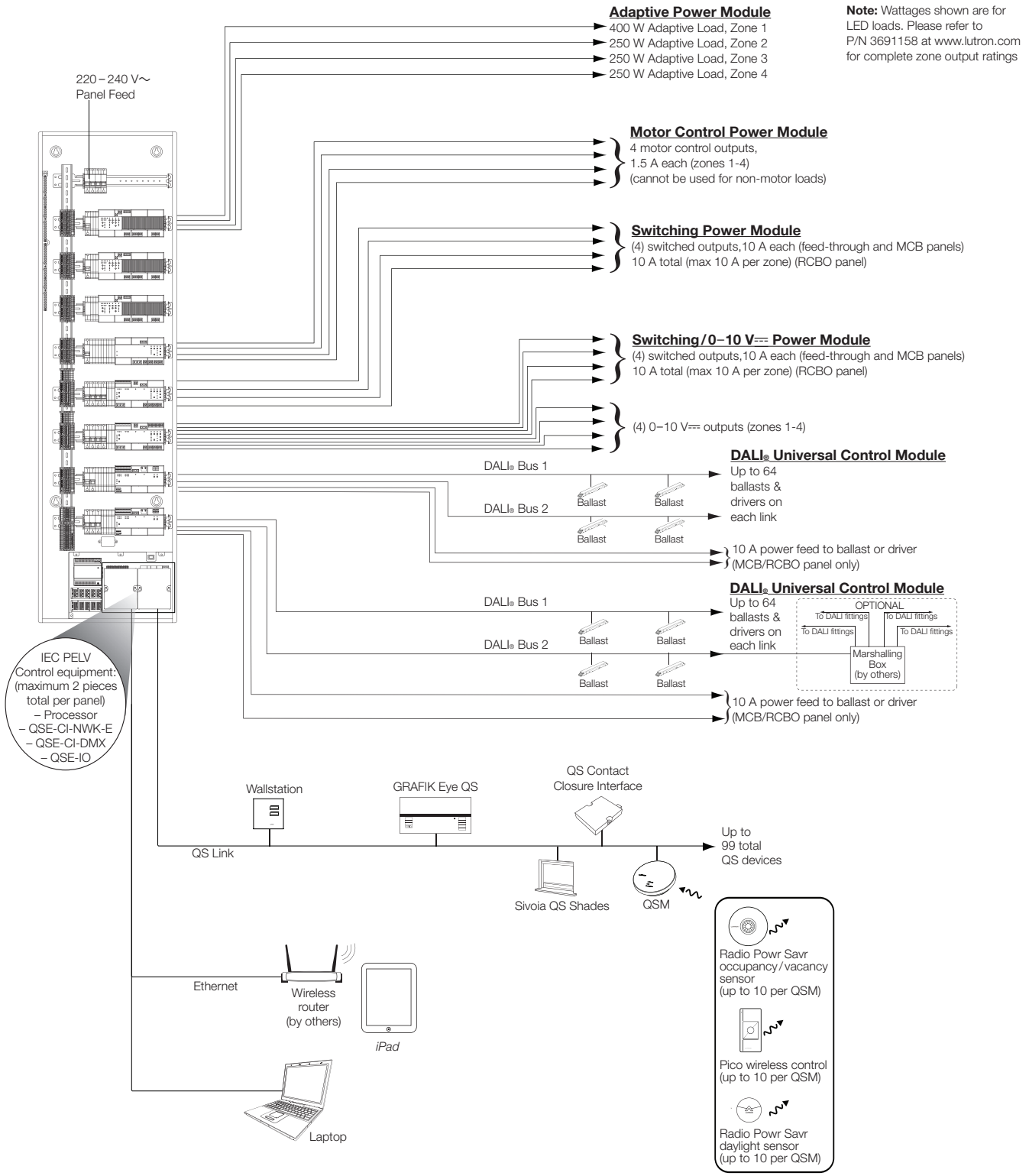
Panels with processors are referred to as "control" panels. Panels without processors are also available and are referred to as satellite panels.

- Control panel with processor provides:
  - Optional native BACnet with BACnet software license (QSW-BAC-PP-A)
  - Astronomic Time Clock
    - Setup using PC application
    - Capable of up to 500 events
    - 7 daily schedules and 5 holiday (special) schedules are available
    - 25 events per day
    - Holiday (special) events are programmable one year in advance
  - Ethernet port for laptop connection and networking multiple panels together with processors
  - Each processor has two links capable of controlling up to 512 switch legs*** and 99 QS devices per link

***A switch leg is a controllable output such as a digital ballast/driver, switching, 0–10 V⎓, phase-adaptive output.

Job Name:	Model Numbers:	
Job Number:		

System Diagram



LUTRON SPECIFICATION SUBMITTAL

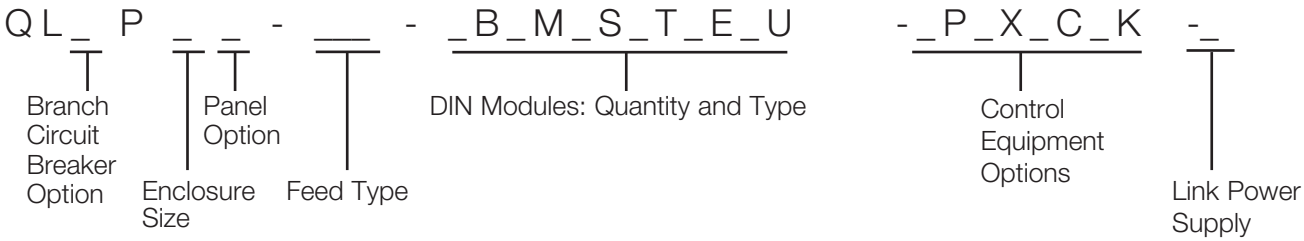
4

Job Name:	Model Numbers:	
Job Number:		

369783i 5 11.01.22

Panel Configuration Nomenclature

Note: The following information is given for general use only. Consult Lutron for available module combinations and assistance with specifying module and control equipment.



Branch Circuit Breaker Options

B = MCB Breaker 10 A

R = RCBO Breaker 10 A

Blank = Feed-through

Enclosure Sizes

3 = 921 mm (36 in) enclosure

6 = 1 613 mm (64 in) enclosure

Panel Options

C = Control Panel (control equipment compartment)

S = Satellite Panel (modules only, no control equipment)

Feed Types

L4 = 3 Ø 4 W (125 A Isolator Switch)

L2 = 1 Ø 2 W (63 A Isolator Switch, RCBO panel only)

FT = Feed-through (10 A per feed maximum)

DIN Modules*

_B = PRO LED+ Phase Adaptive Dimming

_M = Motor Module

_S = Four-Circuit Switching – 10 A per circuit up to 40 A maximum (max of 10 A total in a RCBO panel)

_T = Four-Circuit 0–10 V⎓

_E = EcoSystem 2-Link Control

_U = DALI® Universal Control Module

Control Equipment Options (maximum of 2 in control panel)

_P = Processor (see page 3)

_X = DMX Control

_C = Contact Closure Interface

_K = Network Interface

Link Power Supply (control panels only)

L = Power Supply (required if panel contains processor)

Blank = No Power Supply

* DIN Module Count

921 mm (36.3 in) control panel	=	3 modules maximum with breakers 4 modules maximum without breakers
921 mm (36.3 in) satellite panel	=	4 modules maximum with breakers 5 modules maximum without breakers
1 613 mm (63.5 in) control panel	=	8 modules maximum with breakers 9 modules maximum without breakers
1 613 mm (63.5 in) satellite panel	=	9 modules maximum with breakers 10 modules maximum without breakers

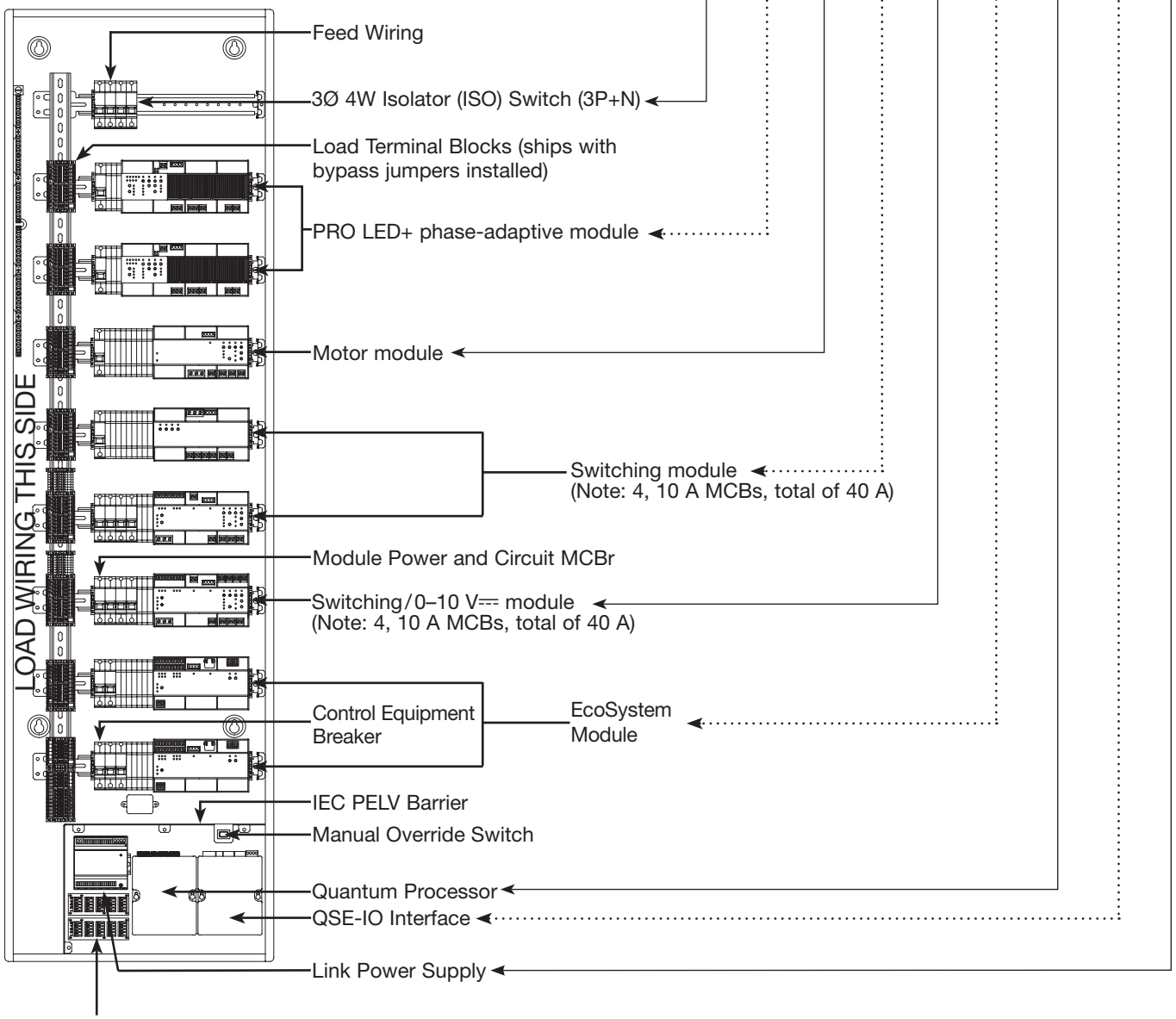
LUTRON SPECIFICATION SUBMITTAL 5

Job Name:	Model Numbers:	
Job Number:		

Example Configurations

Breaker Panel (Model QLBP6C-L4-230PNL)

Panel Configuration: QLBP6C-L4-2B1M2S1T2E-1P1C-L



Wire Landing Board (WLB) for QS Link
- 1 Included*
- 2nd WLB available for purchase

*5+ DALI Universal/EcoSystem and/or 2 processors includes 2 WLB

Example

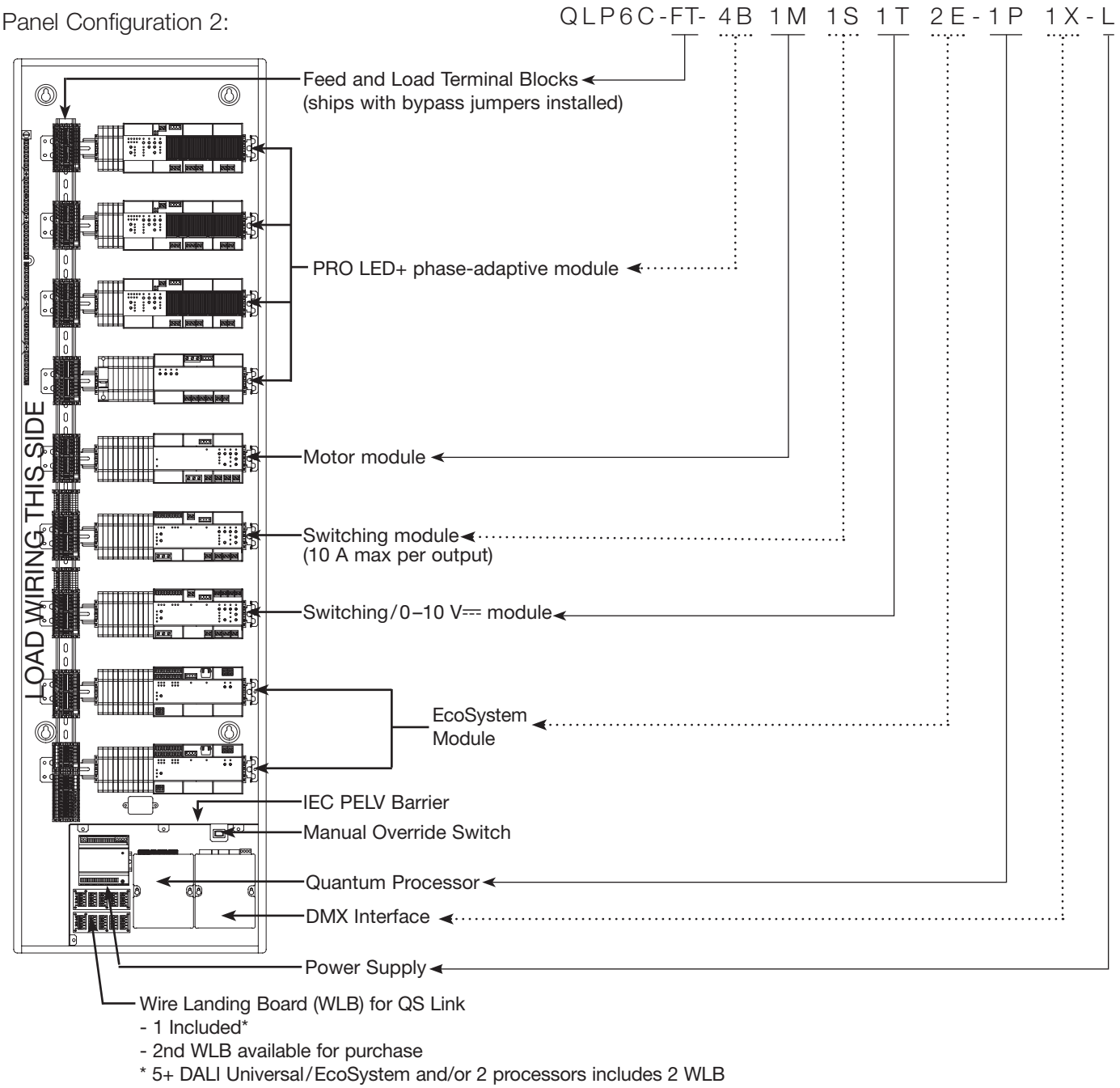
QLBP6C-L4-2B1M2S1T2E1-1P1C-L: 1 613 mm (63.5 in) MCB control panel with (3) PRO LED+ phase-adaptive modules, (1) motor module, (2) switching module, (1) 0–10 V⎓ module, (2) EcoSystem module, (1) Quantum processor, (1) QSE-IO interface and (1) link power supply.

Job Name:	Model Numbers:	
Job Number:		

Example Configurations (continued)

Feed-Through Panel (Model QLP6C-230-PANEL)

Panel Configuration 2:

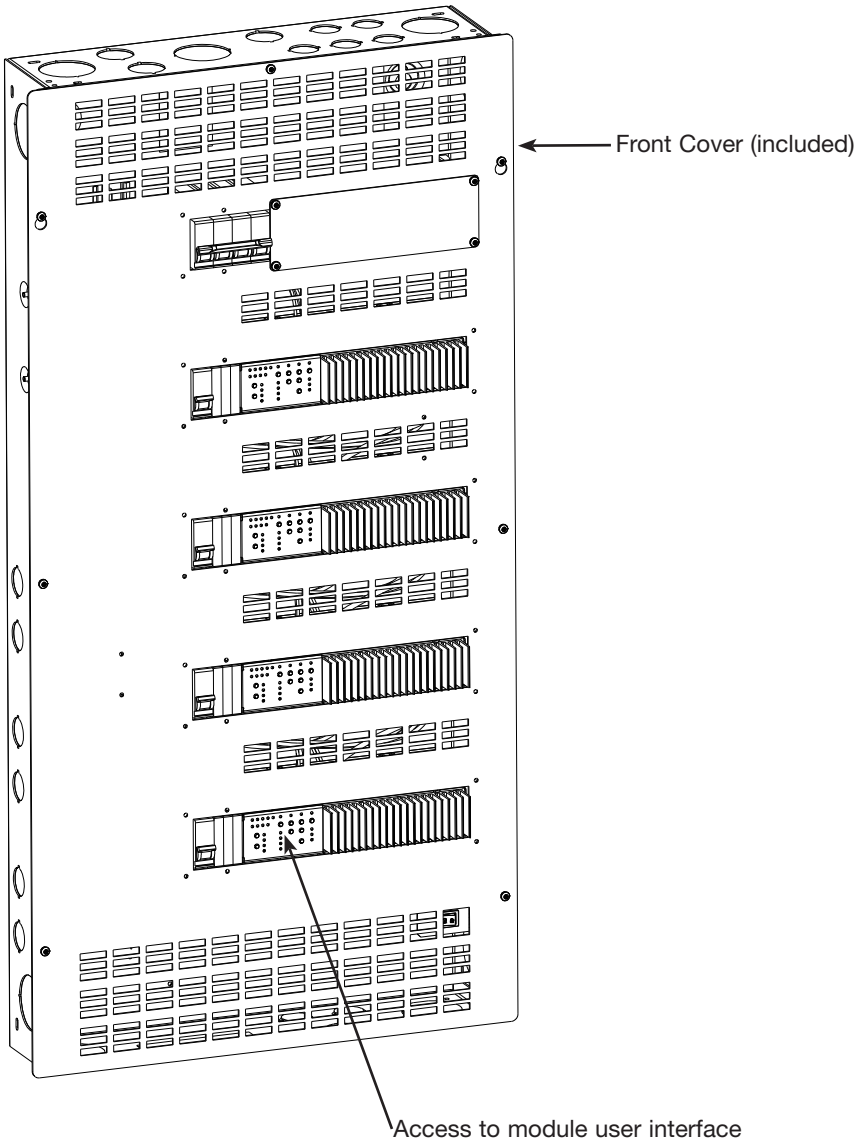


Example

QLP6C-FT-4B1M1S1T2E-1P1X-L: 1 613 mm (63.5 in) feed-through control panel with (4) PRO LED+ phase-adaptive modules, (1) motor module, (1) switching module, (1) 0–10 V⎓ module, (2) EcoSystem modules, (1) Quantum processor, (1) QSE-CI-DMX interface and (1) link power supply.

Job Name:	Model Numbers:	
Job Number:		

Panel Without Optional Door (as shipped):

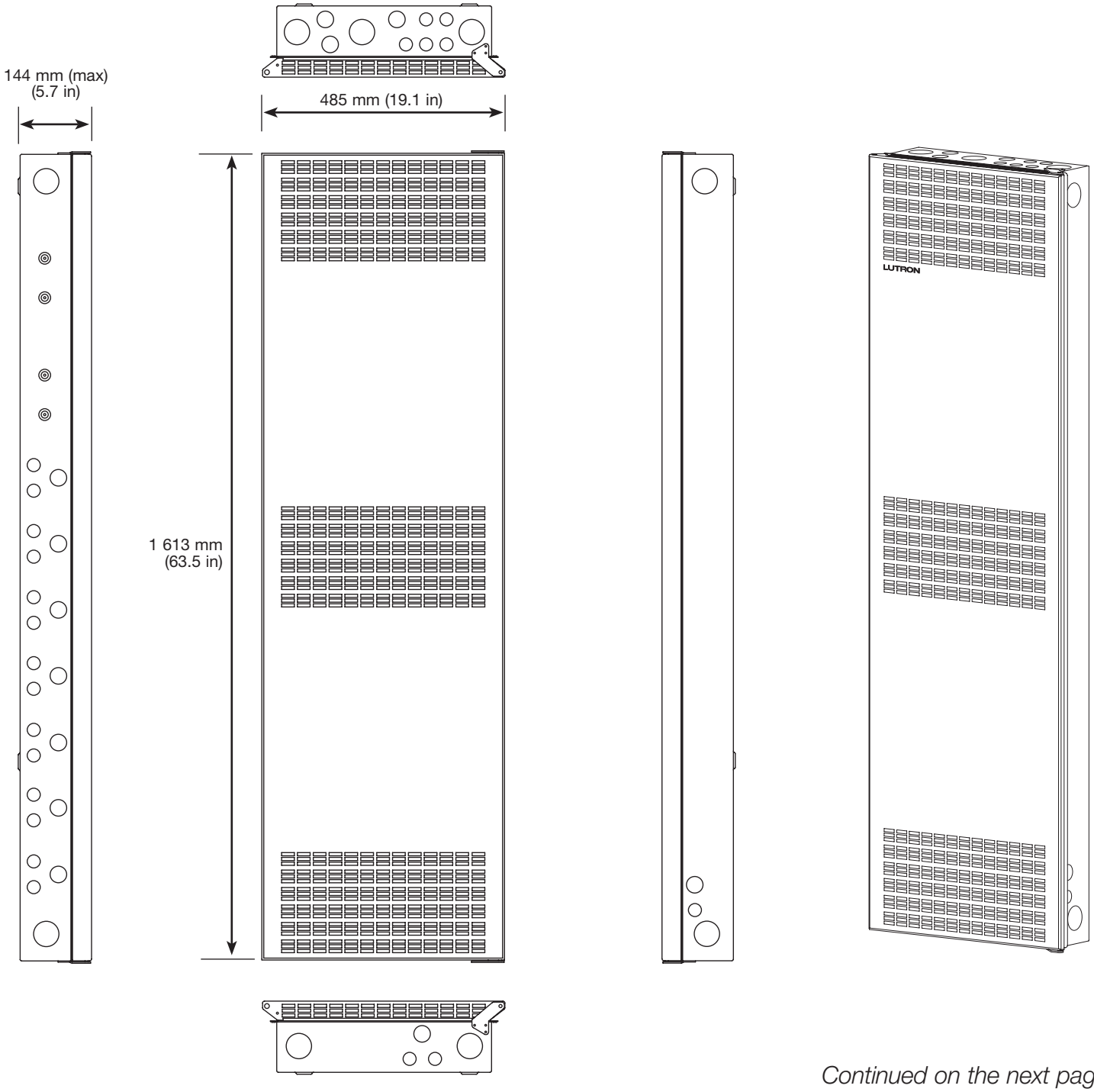


Job Name:	Model Numbers:	
Job Number:		

Optional Doors Available:

PD-64-Door Dimensions: Fits 1 613 mm panel

1613 mm (63.5 in) panel with optional door shown below. Door can be installed as swing left or swing right (see page 11 of this document).



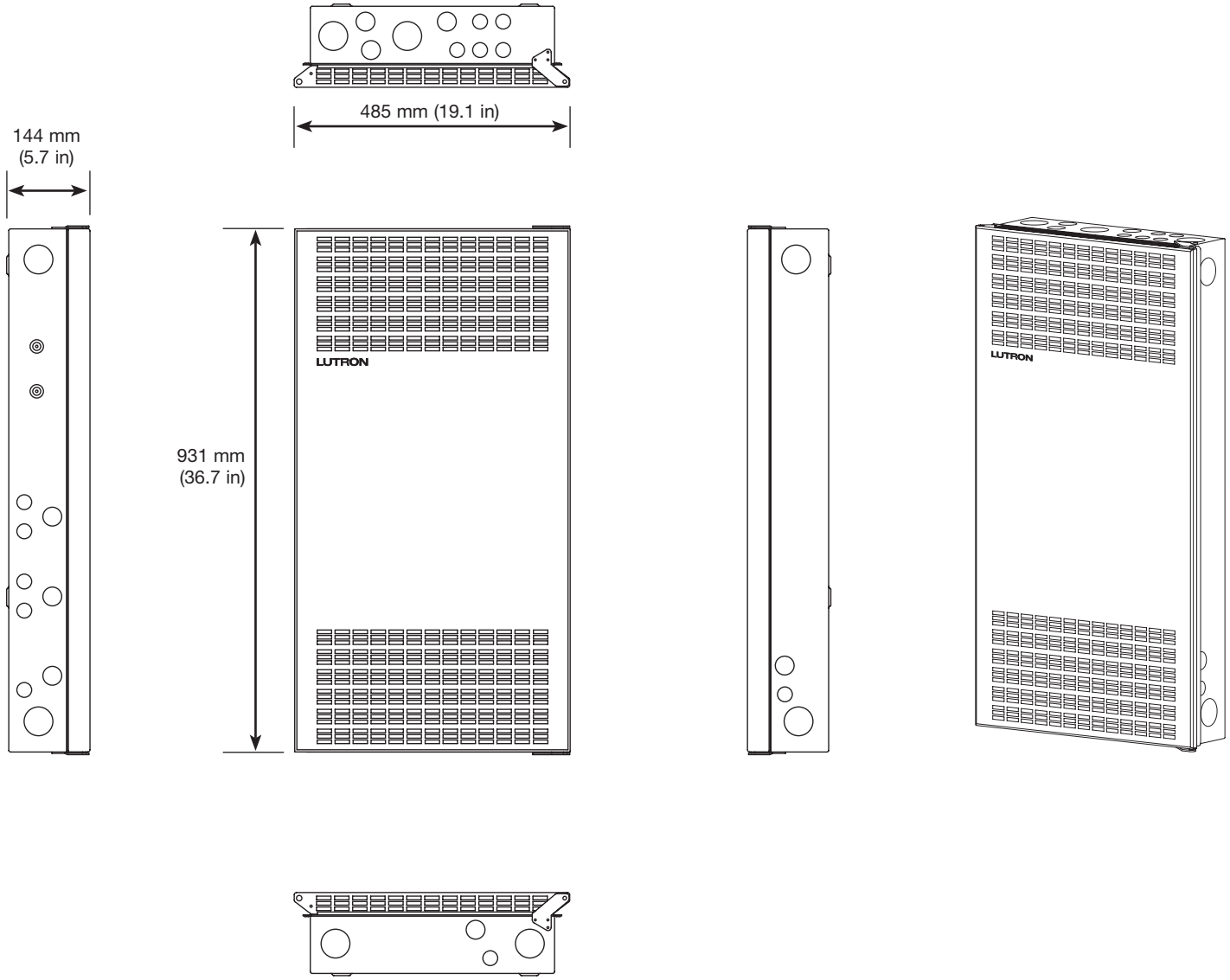
Continued on the next page

Job Name:	Model Numbers:	
Job Number:		

Optional Doors Available: *(Continued)*

PD-36-Door Dimensions

921 mm (36.3 in) panel with optional door shown below. Door can be installed as swing left or swing right (see page 11 of this document).

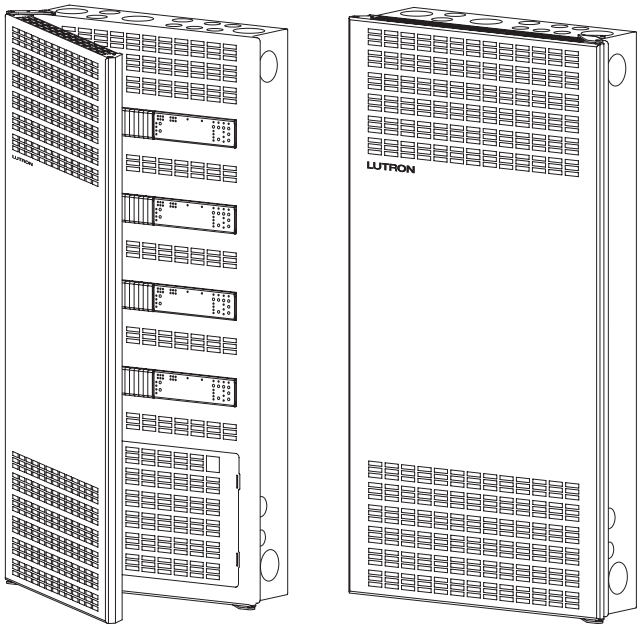


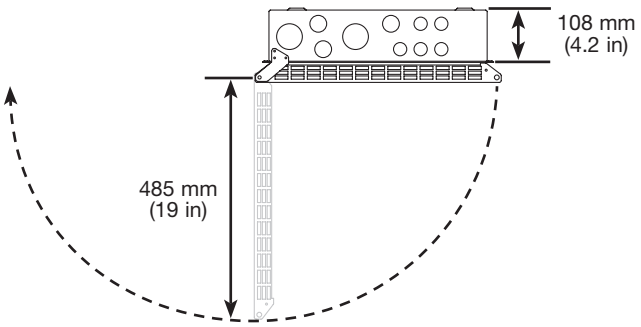
Job Name:	Model Numbers:	
Job Number:		

Panel Door Mounting Options and Swing Clearances

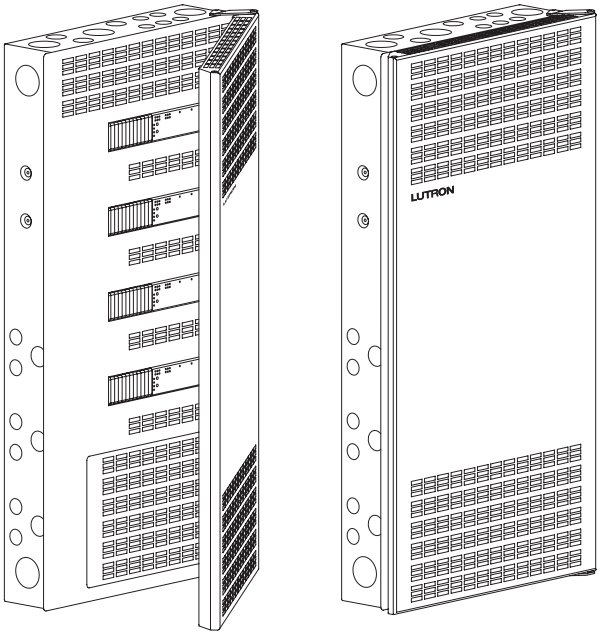
921 mm (36.3 in) panel shown for reference.

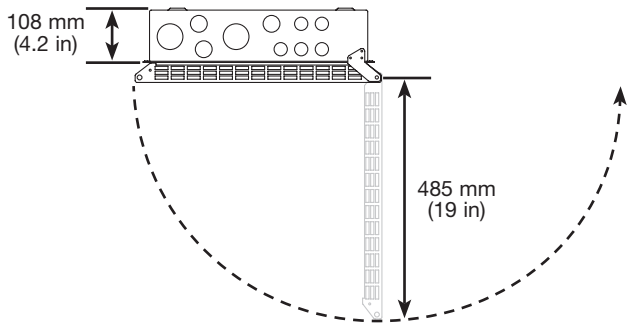
Swing Left





Swing Right





Optional panel door kit includes hinges and mounting hardware that can be configured to swing left or right. Allow 610 mm (24 in) for swing clearance. Doors have a black, powder-coated finish. Kit can be installed after panel installation, but requires removal and reinstallation of the deadfront (flat cover). Standard door has a magnetic catch.

Job Name:	Model Numbers:	
Job Number:		

Mounting for Panels

- For indoor use only.
- Consult dimensions page for panel size, conduit knockouts, and mounting hole locations.
- Panels weigh up to 50 kg (110 lb). Reinforce wall structure for weight and local codes.
- Mount panel where audible noise is acceptable (internal relays click).
- This equipment is passively air-cooled. Mount in a location where the vented cover will not be blocked. 305 mm (12 in) of clearance in front of the vents is required. Vents must not be blocked or the warranty will be voided.
- Mount panel so line/hot (mains) voltage wiring is at least 1.8 m (6 ft) from sound or electronic equipment and wiring.
- For surface mount, mount the panel a minimum of 152 mm (6 in) from the floor and 305 mm (12 in) from the ceiling.
- Mount panel using one of the methods below (mounting hardware is not provided):

Surface Mounting

- Lutron recommends using 6 mm (1/4 in) mounting bolts.
- Leave 32 mm (1.25 in) clearance on each side of panel for cover.
- Use keyholes with bolts sufficient for 50 kg (110 lb) load, M6 in (1/4 in) bolts recommended.
- Mount within 7° of true vertical.

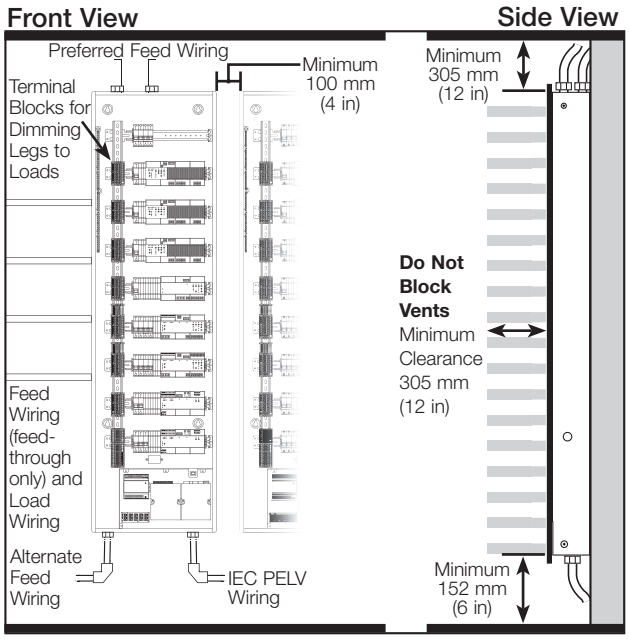
- Install in accordance with all local and national electrical codes.
- If using optional hinged door, allow 610 mm (24 in) for swing clearance.
- Do not stack 1613 mm (63.5 in) panels. If stacking 921 mm (36.3 in) panels, allow at least 305 mm (12 in) between panels.

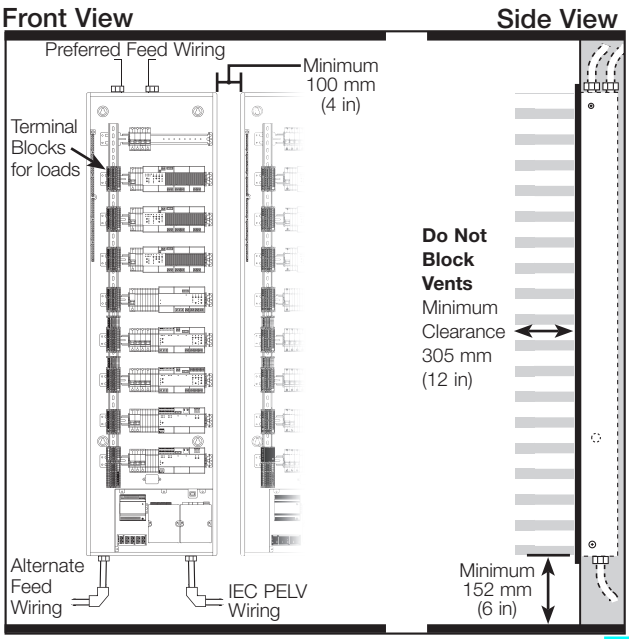
Number of modules	Maximum Heat Dissipation*	
	BTUs (kcal)/h	Watts (W)
1	90 (22.68)	26
2	170 (42.84)	50
3	250 (63.00)	73
4	330 (83.16)	97
5	410 (103.32)	120
6	490 (123.48)	144
7	570 (143.64)	167
8	650 (163.80)	190
9	650 (163.80)	190
10	650 (163.80)	190

* Based on phase-adaptive (4A) Modules. Panel derating of 80 A dimming current maximum applies for panels with more than 8 modules.

Recess Mounting

- Mount panel between flush and 3.2 mm (0.125 in) below finished wall surface.
- Leave 38 mm (1.5 in) clearance on each side of panel for cover.
- Use screws sufficient for 50 kg (110 lb).



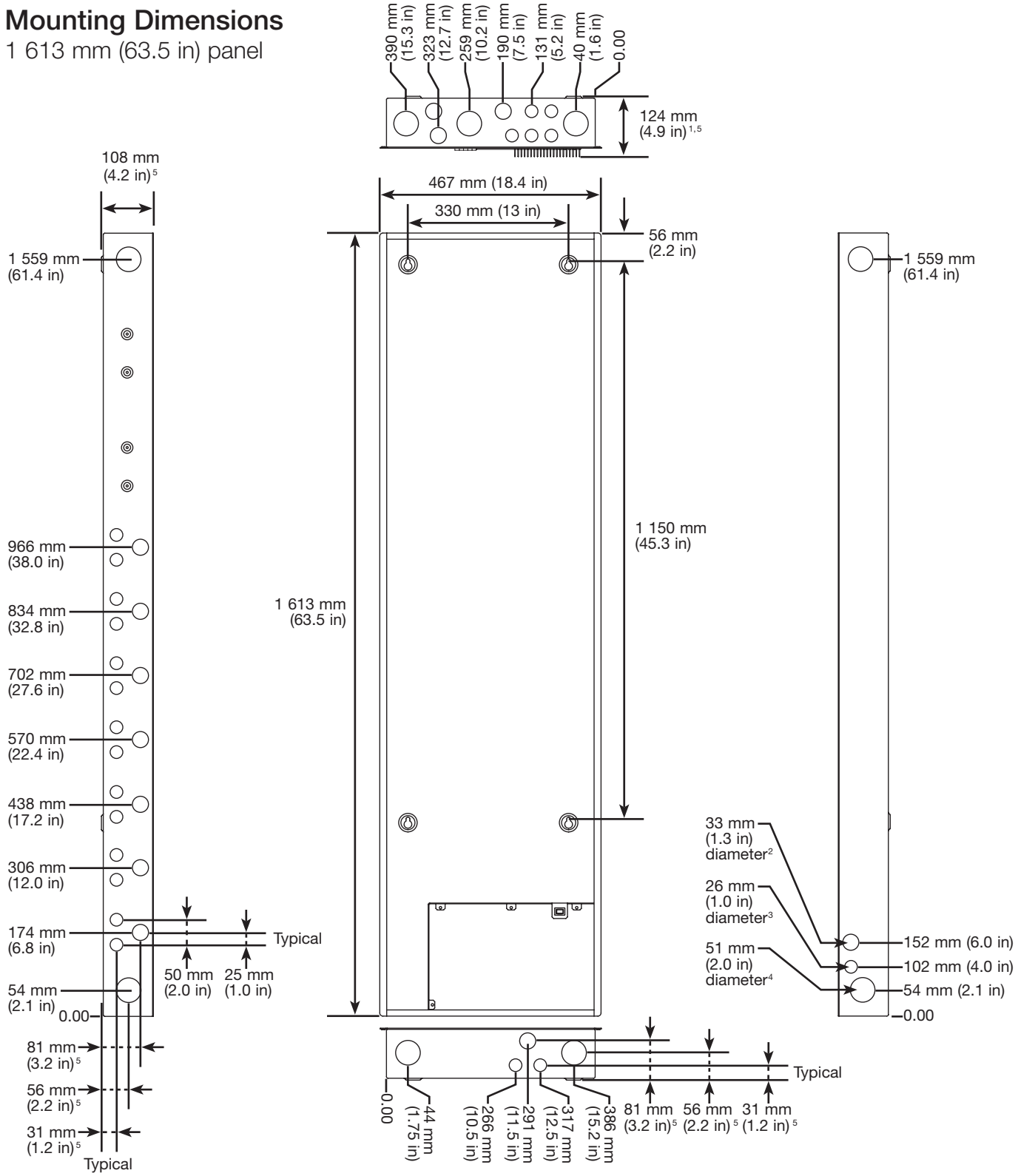


Job Name:	Model Numbers:	
Job Number:		

369783i 13 11.01.22

Mounting Dimensions

1 613 mm (63.5 in) panel

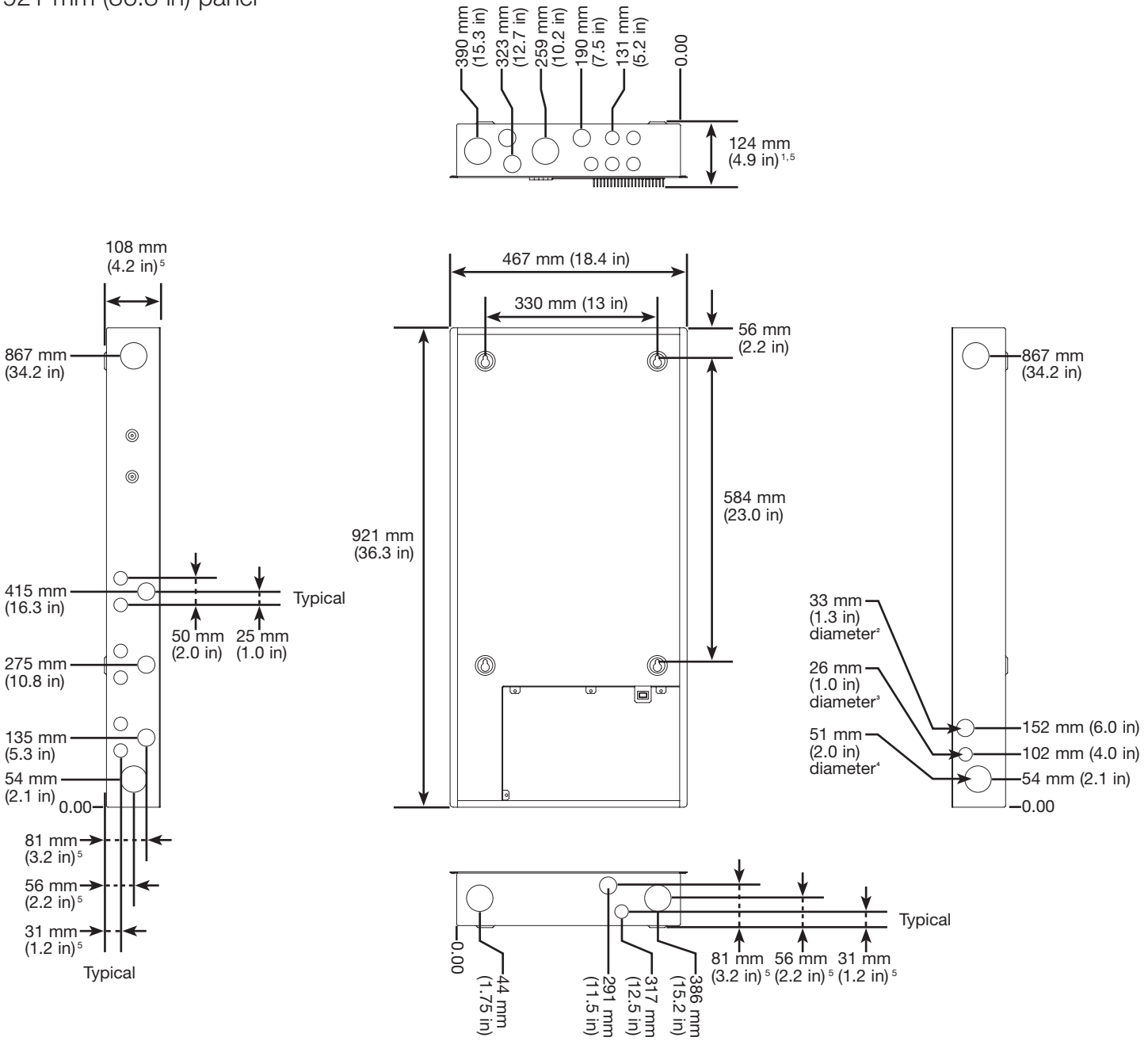


[1] Maximum dimension shown with phase-adaptive module.
[2] All medium knockouts shown are 33 mm (1.3 in) diameter.
[3] All small knockouts shown are 26 mm (1.0 in) diameter.
[4] All large knockouts shown are 51 mm (2.0 in) diameter.
[5] Dimensions shown from wall mounting surface.

Job Name:	Model Numbers:	
Job Number:		

Mounting Dimensions

921 mm (36.3 in) panel



[1] Maximum dimension shown with phase-adaptive module.
[2] All medium knockouts shown are 33 mm (1.3 in) diameter.
[3] All small knockouts shown are 26 mm (1.0 in) diameter.
[4] All large knockouts shown are 51 mm (2.0 in) diameter.
[5] Dimensions shown from wall mounting surface.

Job Name:	Model Numbers:	
Job Number:		

Panel Wiring

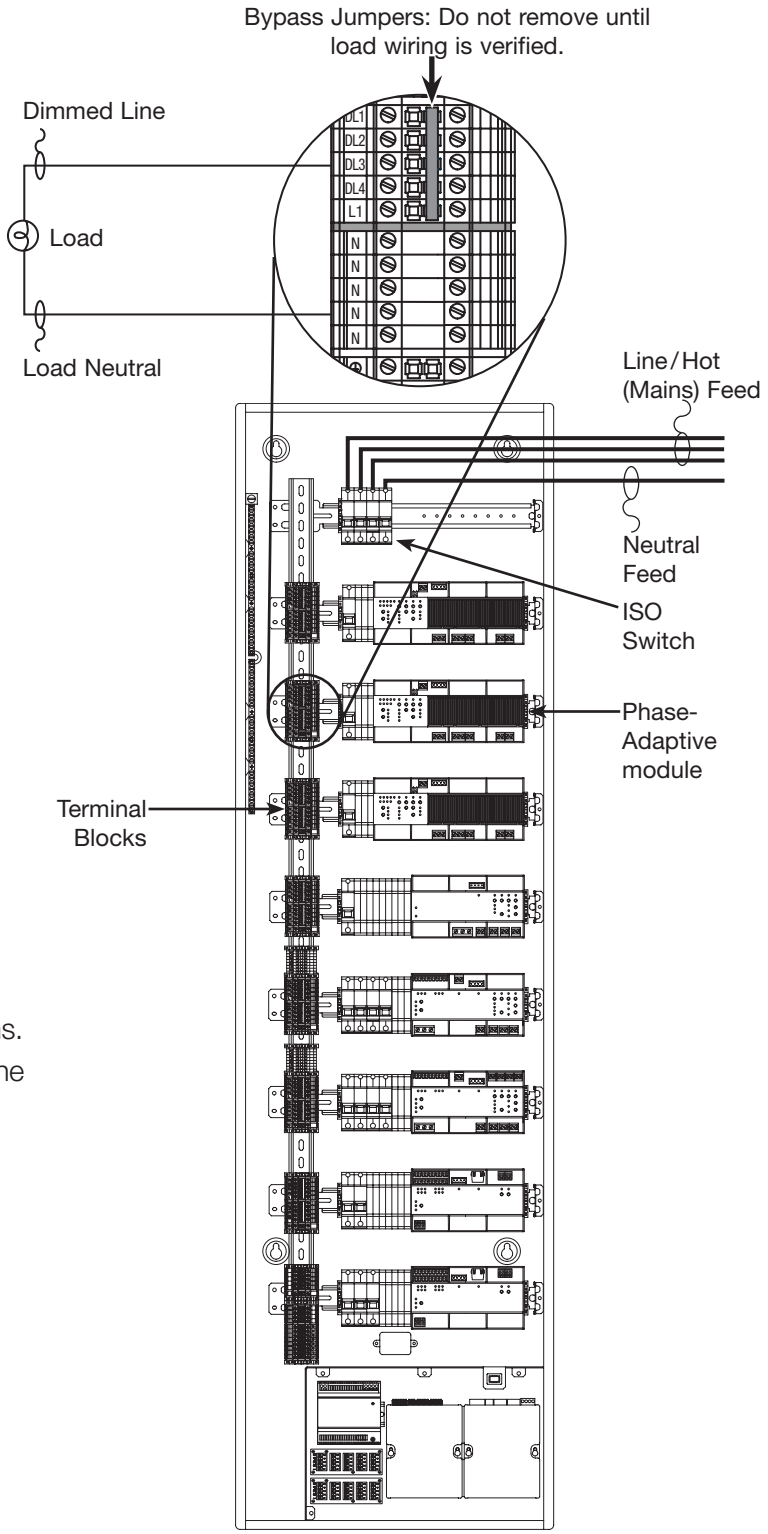
Wire Sizes

- **Line/Hot (Mains) Feed (to isolator switch):**
  2.5 mm^2 (12 AWG) to 35 mm^2 (2 AWG)
- **Neutral Feed (to isolator switch):**
  2.5 mm^2 (12 AWG) to 35 mm^2 (2 AWG)
- **Dimmed Line (to terminal block):**
  0.14 mm^2 (26 AWG) to 6.0 mm^2 (10 AWG)
- **Load Neutral (to terminal block):**
  0.14 mm^2 (26 AWG) to 6.0 mm^2 (10 AWG)

Wiring Tips

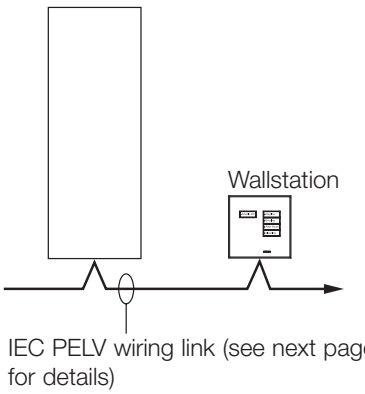
Wire the panel similar to a Lighting Distribution Panel:

- Run feed and load wiring to appropriate terminal blocks or Isolator switch installed in the panel.
- For feed-through panels run separate neutrals for each module—no common neutrals across phases.
- The panel can provide temporary lighting:
  - Wire all loads.
  - Do not remove bypass jumpers that are pre-installed for load controlling modules.
  - Use pre-installed breakers to switch lights on and off.



IEC PELV Wiring

- IEC PELV wiring is used for all system communications.
- IEC PELV wiring must run in a separate trough from line (mains) voltage.
- Must be less than 600 m (2 000 ft) long.

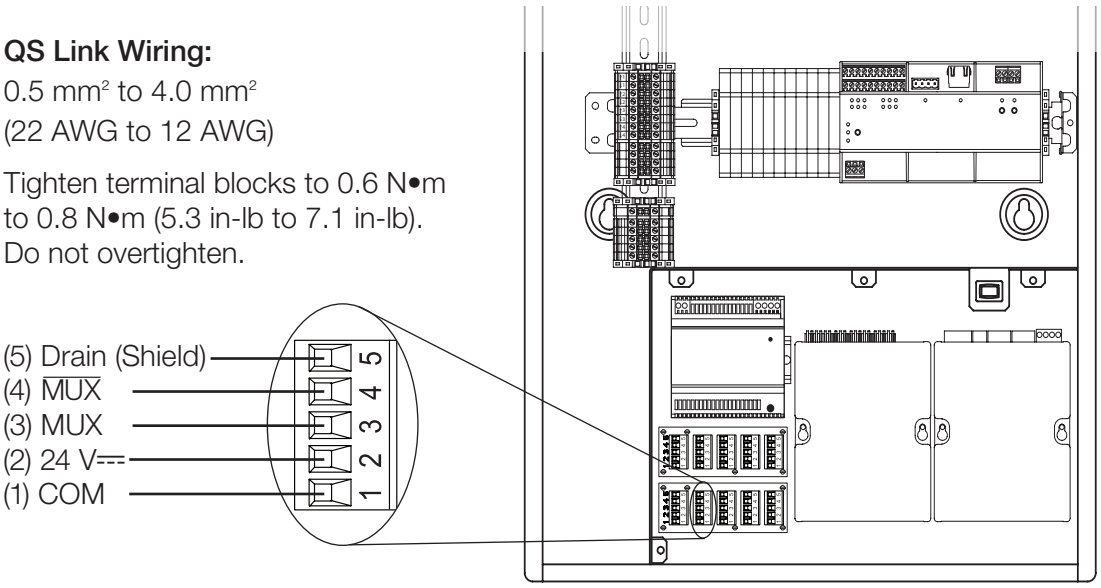


Job Name:	Model Numbers:	
Job Number:		

Configurable Link Wiring: QS Devices

QS Link Wiring:
0.5 mm² to 4.0 mm²
(22 AWG to 12 AWG)

Tighten terminal blocks to 0.6 N•m to 0.8 N•m (5.3 in-lb to 7.1 in-lb). Do not overtighten.



QS Link Wiring with Available Power Supplies (QSPS-DH-1-75-H)

Available Power Draw Units (PDUs) per link	Maximum Link Length	Wire Gauge Required	Available from Lutron in one cable
32	150 m (500 ft)	Power (terminals 1 and 2) 1 pair 1.5 mm² (16 AWG) Data (terminals 3 and 4) 1 pair 0.5 mm² (22 AWG) twisted and shielded	QSH-CBL-M-500 QSH-CBLP-M-500
32	600 m (2 000 ft)	Power (terminals 1 and 2) 1 pair 4.0 mm² (12 AWG) Data (terminals 3 and 4) 1 pair 0.5 mm² (22 AWG) twisted and shielded	QSH-CBL-L-500 QSH-CBLP-L-500

Notes

- System communication uses IEC PELV wiring.
- Follow all local and national electrical codes when installing IEC PELV wiring with line voltage/mains wiring.
- Each terminal accepts up to two 1.0 mm² (18 AWG) wires or one 4.0 mm² to 0.5 mm² (12 AWG to 22 AWG) wire.
- Make all connections inside the panel.
- A Quantum QS link can have up to 512 switch legs (controllable outputs) and 99 devices. Refer to the **QS Link Power Draw Units** Specification Submittal (Lutron P/N 369405 at www.lutron.com) and the table above for information concerning Power Draw Units (PDUs).
- Wiring can be T-tapped or daisy-chained.

Job Name:	Model Numbers:	
Job Number:		

EcoSystem/DALI® Universal Modules

QS Link Limits

- Each QS Link is capable of supporting 512 switch legs (controllable outputs)
- Quantum processors are equipped with two QS Links

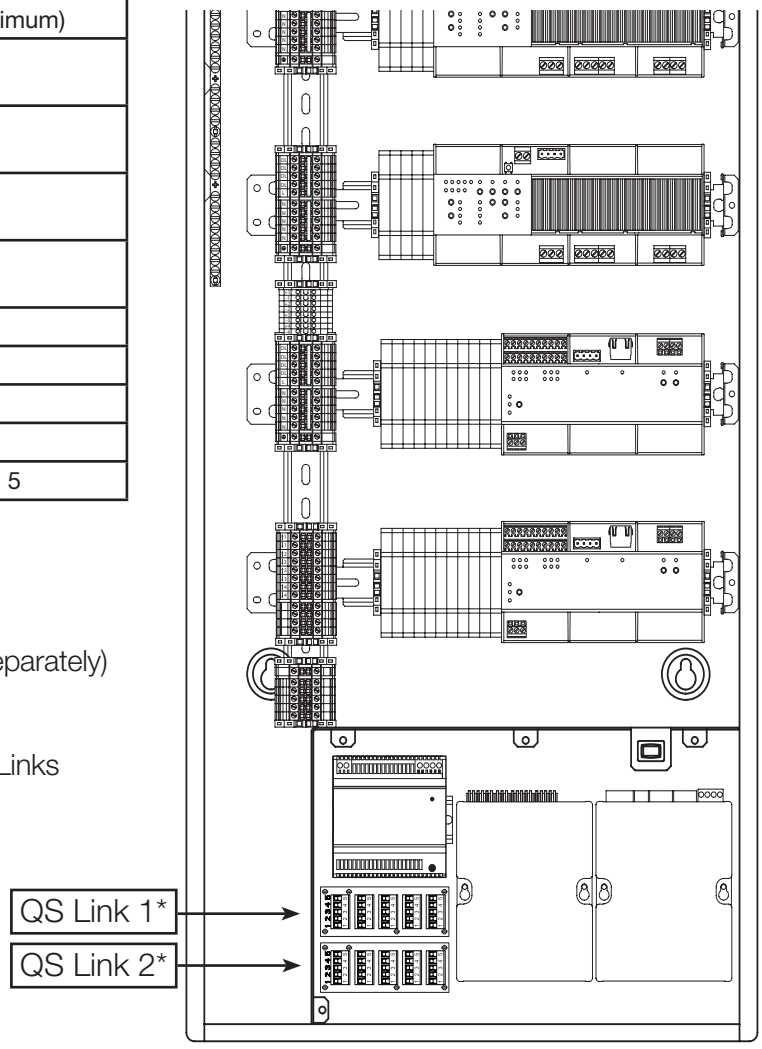
QS Device Consumption Rules

The table below lists some of the devices available on the QS Link and the number of switch legs each will consume. This list is for reference only and is not all inclusive.

QS Device Description	Switch Leg Count
Digital Controls (Energi Savr Node QS)	1 per EcoSystem/DALI address used (128 maximum)
Phase Adaptive Fixture Controls (Energi Savr Node QS)	4
Switching Controls (Energi Savr Node QS)	4
0–10 V⎓ Controls (Energi Savr Node QS)	4
Motor Controls (Energi Savr Node QS)	4
seeTouch QS	0
Sivoia QS Roller 64	1
Sivoia QS Roller 100	1
Sivoia QS Roller 225	1
QS contact closure interface	up to 5

QS Link Management

- 4 EcoSystem/DALI® Universal modules or less
  - 1 Wire Landing Board wired to a single QS link
  - 2nd Wire Landing Board (Optional - Purchase Separately)
- 5 EcoSystem/DALI® Universal modules or more
  - 2 Wire Landing Boards
  - Each Wire Landing Board wired to separate QS Links
  - Bottom 4 modules wired to QS Link 1
  - Remaining top modules are wired to QS Link 2



* QS Link Number terminology used for explanation only

It is the responsibility of the installer to connect QS Link cables to the Wire Landing Board correctly in accordance to the above

Job Name:	Model Numbers:	
Job Number:		

EcoSystem/DALI® Universal Modules *(continued)*

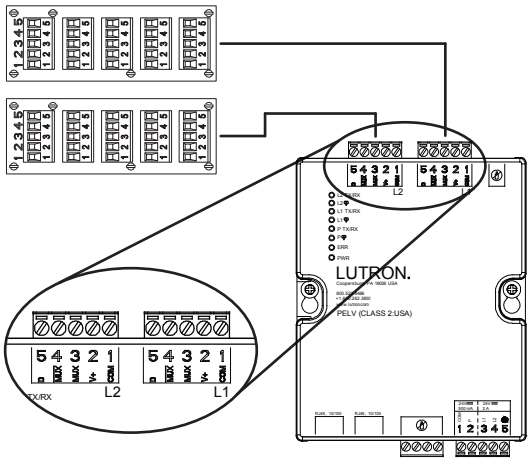
QS Link Management

The table below provides a reference for managing the QS Link wiring to and from panels equipped with EcoSystem/DALI® Universal modules.

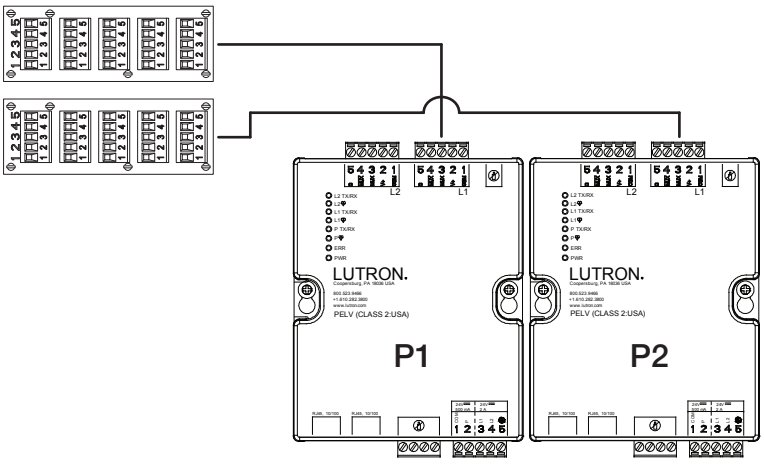
Number of Processors in Panel	ECO/DALI Universal Modules	QS Link Wiring - Installation Guide
0	4 or less	Connect QS Link to single wire landing board from external processor
	5 or more	Connect separate QS Links to wire landing boards 1 and 2. Wire landing boards cannot share the same QS Link.
1	4 or less	Processor pre-wired with Link 1 (L1) to all modules. External zones should be wired to Link 2 (L2) on processor if applicable. – 2nd wire landing board available as field installable option
	5 or more	Processor pre-wired with Link 1 (L1) to upper wire landing board (bottom 4 modules) and Link 2 (L2) to lower wire landing board (all remaining modules). External zones should be wired according to job specification, preferably an external processor. See **QS Link Diagram 1** below.
2	4 or less	Processor 1 (P1) pre-wired with P1 Link 1 (L1) on top wire landing board (all modules), P1 Link 2 (L2) is open. Processor 2 (P2) is pre-wired with P2 Link 1 (L1) on bottom landing board (no modules), P2 Link 2 (L2) is open. All external zones should be wired to P1 L2, P2 L1, or P2 L2. See **QS Link Diagram 2** below.
	5 or more	Processor 1 (P1) is pre-wired with P1 Link 1 (L1) on upper wire landing board (bottom 4 modules), P1 Link 2 (L2) is open. Processor 2 (P2) pre-wired with P2 Link 1 (L1) on lower wire landing board (all remaining modules), P2 Link 2 (L2) is open. All external zones should be wired to P1 L2 or P2 L2. See **QS Link Diagram 2** below.

It is the responsibility of the installer to connect QS Link cables to the Wire Landing Board correctly in accordance to the above

QS Link Diagram 1



QS Link Diagram 2



Job Name:	Model Numbers:	
Job Number:		

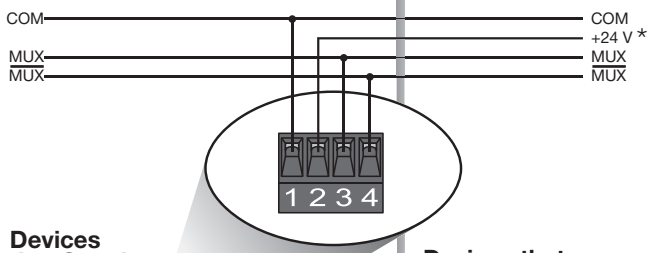
Wiring: QS Link

Between Power Groups

Only terminals 1, 3, and 4 connected between devices that supply PDUs**

Within Power Groups

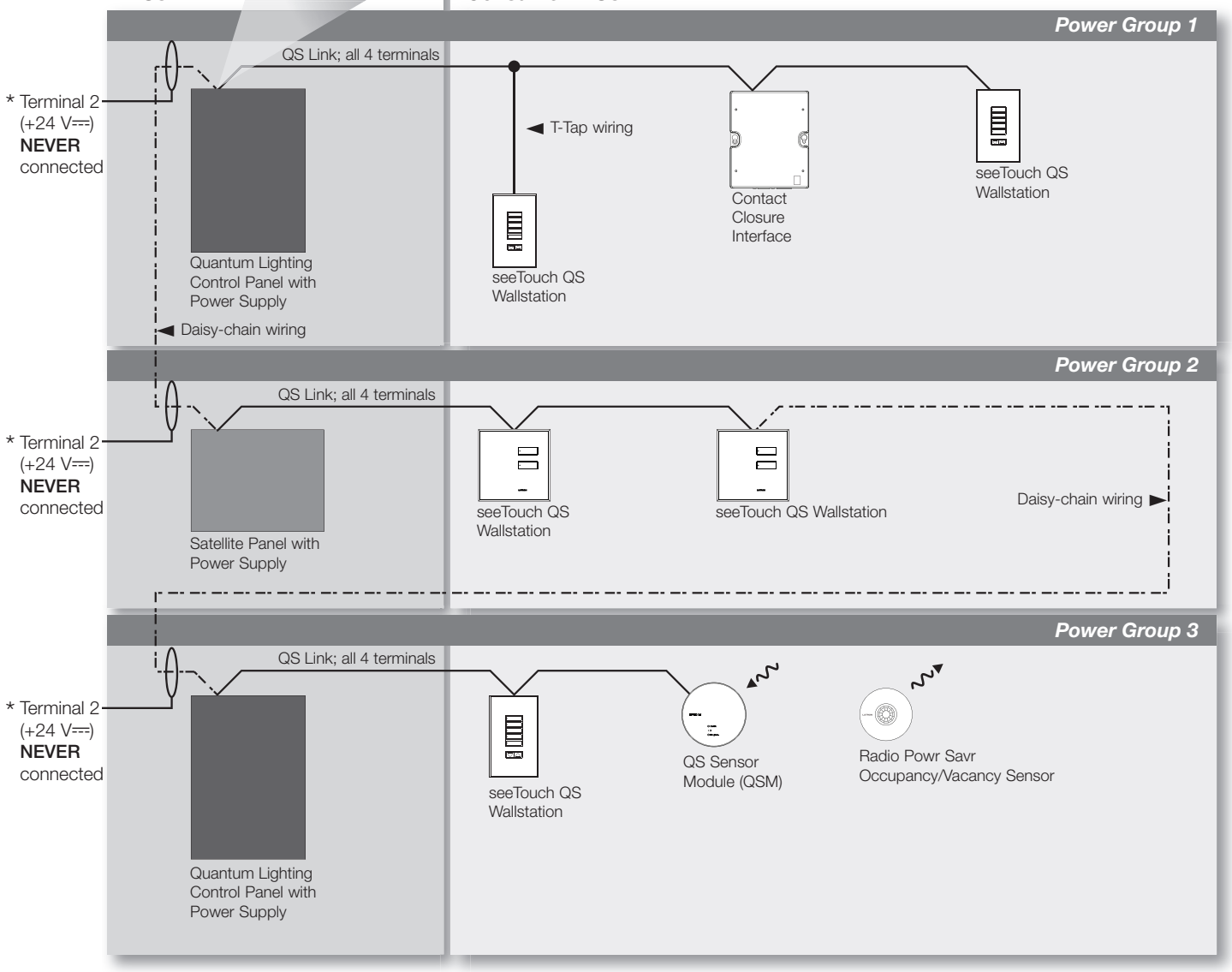
All four terminals connected to QS link devices that consume PDUs**



NOTES

* Terminal 2 (+24 V⎓) should NEVER be connected between devices that supply PDUs.

** For more information on Power Draw Units (PDUs), click on the PDU spec submittal link on page 20.



Job Name:	Model Numbers:	
Job Number:		

Module and Interface Specification Submittals

Product	P/N
PRO LED+ Phase Adaptive Module	3691158
Energi Savr Node for 0–10 V⎓/10 A Switching Module	369261
Energi Savr Node for EcoSystem Module	369450
Energi Savr Node for DALI Universal Module	3691142
Motor Control Module	369584
QSE-CI-DMX Control Interface	369372
QSE-IO Control Interface	369374
QSE-CI-NWK-E Control Interface	369373
Power Supply	369404
Power Draw Units (PDU)	369405
QS Wire Landing Board	369662

Job Name:	Model Numbers:	
Job Number:		