# Athena Edge Processor

The Athena Edge processor provides control and communication to Athena system components. The Ethernet links allow communication to the Athena designer software, integration with third-party systems, and communication between multiple processors. Athena Edge processors may be connected using either an Ethernet hub/switch or router, or by using Ethernet directly from a PC to the processor(s). All processors on a project must be connected to a single network. The Athena designer software and all integration equipment must be connected to the same network as the processors. The processor is powered from the QSPS-DH-1-75 power supply. Refer to the Athena designer software to determine link power requirements.

Features

- Designed to control, manage, and monitor Lutron Energi Savr Node units, QS and Pico wallstations, Sivoia and contract roller QS shades, and QS drapery systems.

- Athena Edge processors can be installed in the following panels:
  - PD4-42T-DV, PD8-65T-DV Configurable Athena DIN panels for North America
  - ALBP, ALP, ALRP Configurable Athena DIN panels for 220-240 V∼ regions
  - Third-party DIN enclosures

- The Athena system brings switching, dimming, motorized window shades, digital ballasts, digital LED drivers, and smart sensors together under one software tool.

- Can be connected to the same network as the other Athena Processors, gateways, and panels (requires Ethernet switch by others).

QP-2L shown

- Athena system cost-effectively scales from a single floor, to multiple floors, to the whole building.

- Compatible with Athena Clear Connect Gateway – Type X, which also requires a Q-POE-PNL or separate IEEE 802.3af-2003 or 802.3at-2009 compliant Power over Ethernet (PoE) supply (not by Lutron) powered with a normal feed.[1]

- Ships with mounting bracket for ease of installation into existing Lutron Athena panels.

- Supports both astronomic and time-of-day events to automatically control the lights and shades/draperies in the system.

- Supports integration via Lutron LEAP API and BACnet IP without additional interfaces. Refer to the Athena and myRoom XC API Integration specification submittal (P/N 3691208) at www.lutron.com for more details.
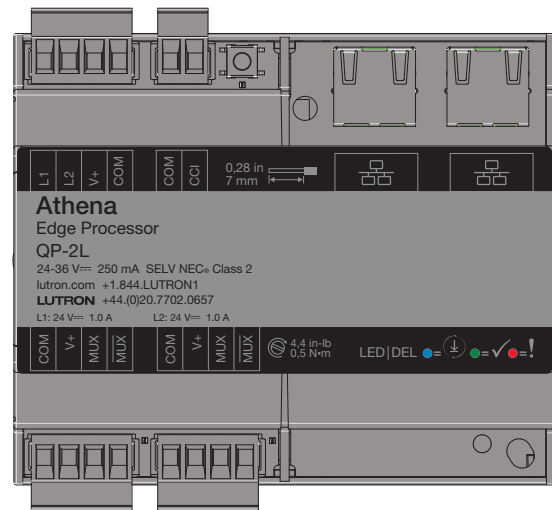
	Limitations per Processor			Limitations per QS Link				
Processor Model	Number of QS Links	Number of Ethernet ports	QS Device Count	Keypad Count	Occupancy Sensor Count	Daylight Sensor Count	Switchleg Count	DMX Interface Limit
QP-1L	1	2	25 (per Link)	25	25	25	256	8
QP-2L	2	2	99 (per Link)	100	100	100	512	16

[1] Athena Clear Connect Gateway - Type X not available in all regions

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Job Name:	Model Numbers:
Job Number:	

Specifications

Regulatory Approvals

- cULus
- NOM
- CE compliant
- UKCA compliant
- FCC
- ICC

Power

- Processor: 24–36 V$=\!=$ 250 mA
- Links: 24–36 V$=\!=$ 1 A per link

Environment

- Operating temperatures 32 °F to 104 °F (0 °C to 40 °C)
- Relative humidity: 0% to 90% non-condensing
- For indoor use only

Typical Power Consumption

- 4.2 W; 8 Power Draw Units (PDUs)
  Test conditions: Two Ethernet links connected, both device links in use

ESD Protection

- Tested to withstand electrostatic discharge without damage or memory loss, in accordance with IEC 61000-4-2

Surge Protection

- Tested to withstand surge voltages without damage or loss of operation, in accordance with IEEE C62.41-1991 Recommended Practice for Surge Voltages in Low-Voltage AC Power Circuits

Power Failure

- **10-year power failure memory:** Should the power be interrupted, the processor will return to its previous state prior to the interruption when power is restored

Mounting

- Mounts into the following enclosures:
  - PD4-42T-DV, PD8-65T-DV Configurable Athena DIN panels for North America (using supplied mounting bracket and 2 supplied screws)
  - ALBP, ALP, ALRP Configurable Athena DIN panels for 220–240 V$\sim$ regions (using supplied mounting bracket and 2 supplied screws)
  - Third-party DIN enclosures

Low-Voltage Link Wire Type

- Two pairs — one pair 18 AWG (1.0 mm^2), one pair 22 AWG to 18 AWG (0.5 mm^2 to 1.0 mm^2) twisted screened — IEC SELV / NEC® Class 2 cable

Internet Connection

- Providing Athena hub(s) with an Internet Connection is highly recommended for all projects and applications. The following Athena features require an Internet Connection:
  - Lutron dashboard
  - Control of the Athena system via the Lutron App, iOS and Android
  - Automatic firmware update
  - DALI emergency testing functionality
  - Remote diagnostics, service, and support
- This Internet connection is outbound from the Athena processor to the cloud (see the Athena IT Guide at www.lutron.com/AthenaITGuide for details). Lutron can provide temporary internet connection for start-up. See Athena LTE modem specification, P/N 3691159 for more details
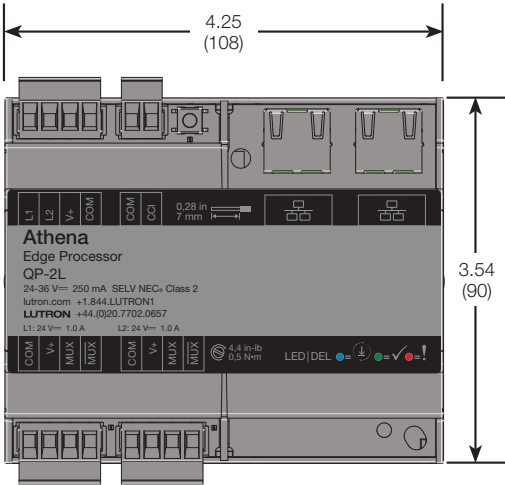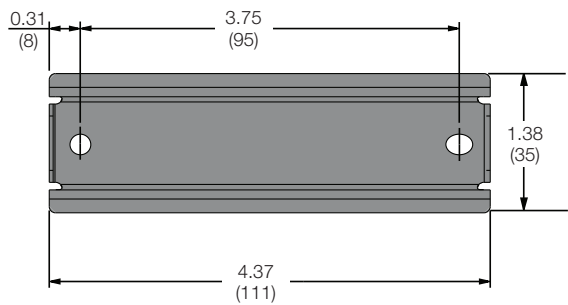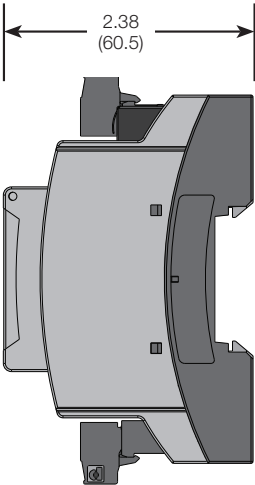
Job Name:	Model Numbers:
Job Number:	

Dimensions

All dimensions are shown as: in (mm)

Front View

4.25
(108)

Athena
Edge Processor
QP-2L
24-36 V⎓ 250 mA SELV NEC₂ Class 2
lutron.com +1.844.LUTRON1
LUTRON +44.(0)20.7702.0657
L1: 24 V⎓ 1.0 A   L2: 24 V⎓ 1.0 A

L1 | L2 | V+ | COM   COM | CCI   0.28 in / 7 mm

COM | V+ | MUX | MUX   COM | V+ | MUX | MUX   4.4 in-lb / 0.5 N•m   LED|DEL ●= ⊕ ●=✓●=!

3.54
(90)

Side View

2.38
(60.5)

0.31
(8)

3.75
(95)

1.38
(35)

4.37
(111)

Note: Includes (2) 8-32 x .25 in (6.35 mm) pan head machine screws for mounting

Processor Mounting

Job Name:	Model Numbers:
Job Number:	

Wiring: Power

(4) Red V+ Link 1
(3) Red V+ Link 2
(2) Red V+ Processor Power
(1) Black COM (Common)

Wiring: QS Link

(4) MUX
(3) MUX
(2) V+
(1) COM
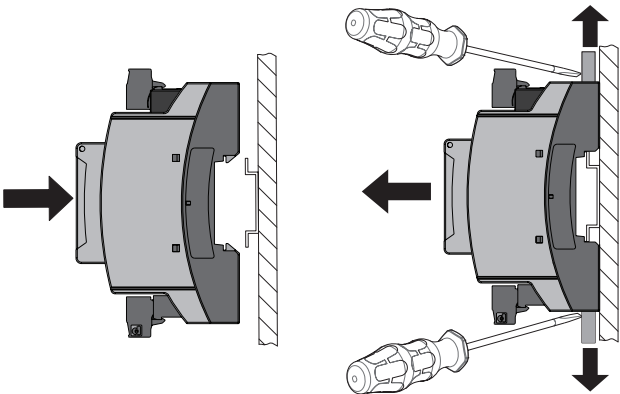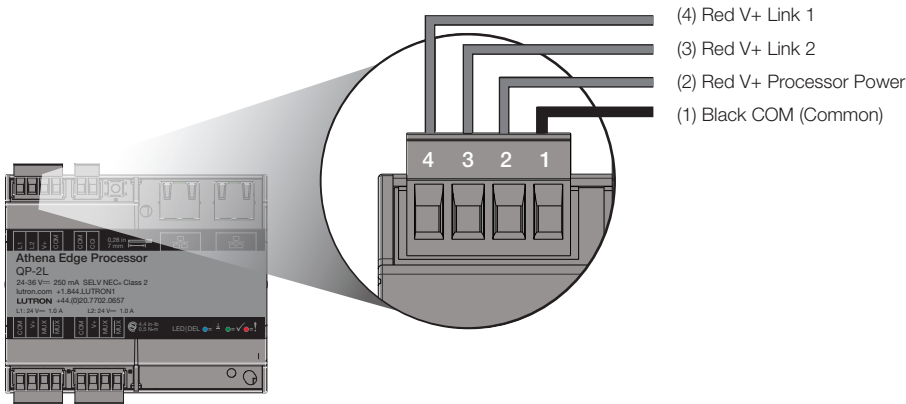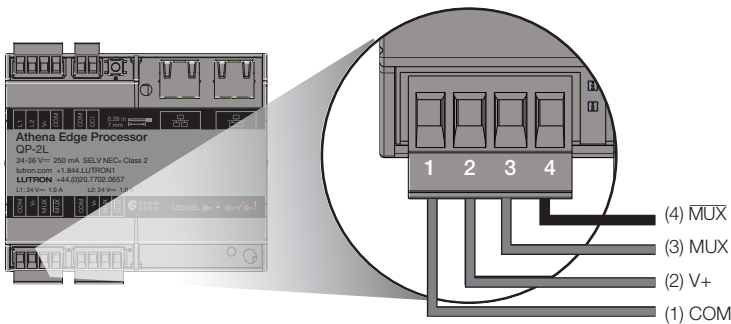
QS Link Wiring Options

QS Link Wiring Length	Wire Gauge	Available from Lutron in one cable:*
Less than 500 ft (153 m)	Power (terminals 1 and 2): 1 pair 18 AWG (1.0 mm²)	QS-CBL-LSZH (Low-Smoke Zero-Halogen)
	Data (terminals 3 and 4): 1 pair 22 AWG (0.5 mm²), twisted and screened	GRX-CBL-346S (non plenum) GRX-PCBL-346S (plenum)
500 ft to 2000 ft (153 m to 610 m)	Power (terminals 1 and 2): 1 pair 12 AWG (4.0 mm²)	GRX-CBL-46L (non plenum)
	Data (terminals 3 and 4): 1 pair 22 AWG (0.5 mm²), twisted and screened	GRX-PCBL-46L (plenum)

* Varies by region, refer to the cable spec.

Notes

- Link communication uses IEC SELV/NEC® Class 2 low-voltage wiring.
- Follow all local and national electrical codes when installing IEC SELV/NEC® Class 2 wiring with line voltage/mains wiring.
- Terminals accept:
  – One 22 AWG to 12 AWG (0.5 mm² to 4.0 mm²) wire
  – Up to two 18 AWG (1.0 mm²) wires

- The total wire length of a link must not exceed 2000 ft (610 m)
- The Athena Edge Processor provides 33 power draw units (PDUs) on each QS Link. For more information, see "Power Draw Units on the QS Link" (Lutron P/N 369405) at www.lutron.com
- QS Link Wiring can be T-tapped or daisy-chained.

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Job Name:	Model Numbers:
Job Number:	

QS Link Wiring Options *(continued)*

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

All 4 terminals connected to QS link
devices that consume PDUs

COM

MUX
$\overline{\text{MUX}}$

COM
V+
MUX
$\overline{\text{MUX}}$

Terminal 2 NEVER
connected between devices
that supply PDUs

1 2 3 4

Devices that
supply PDUs

Devices that
consume PDUs

Lutron Panel

QS link; all 4 terminals

QS
Keypad

QSM

QSM

Terminal 2 (V+)
NEVER connected*

QS Link
power supply

QS link; all 4 terminals
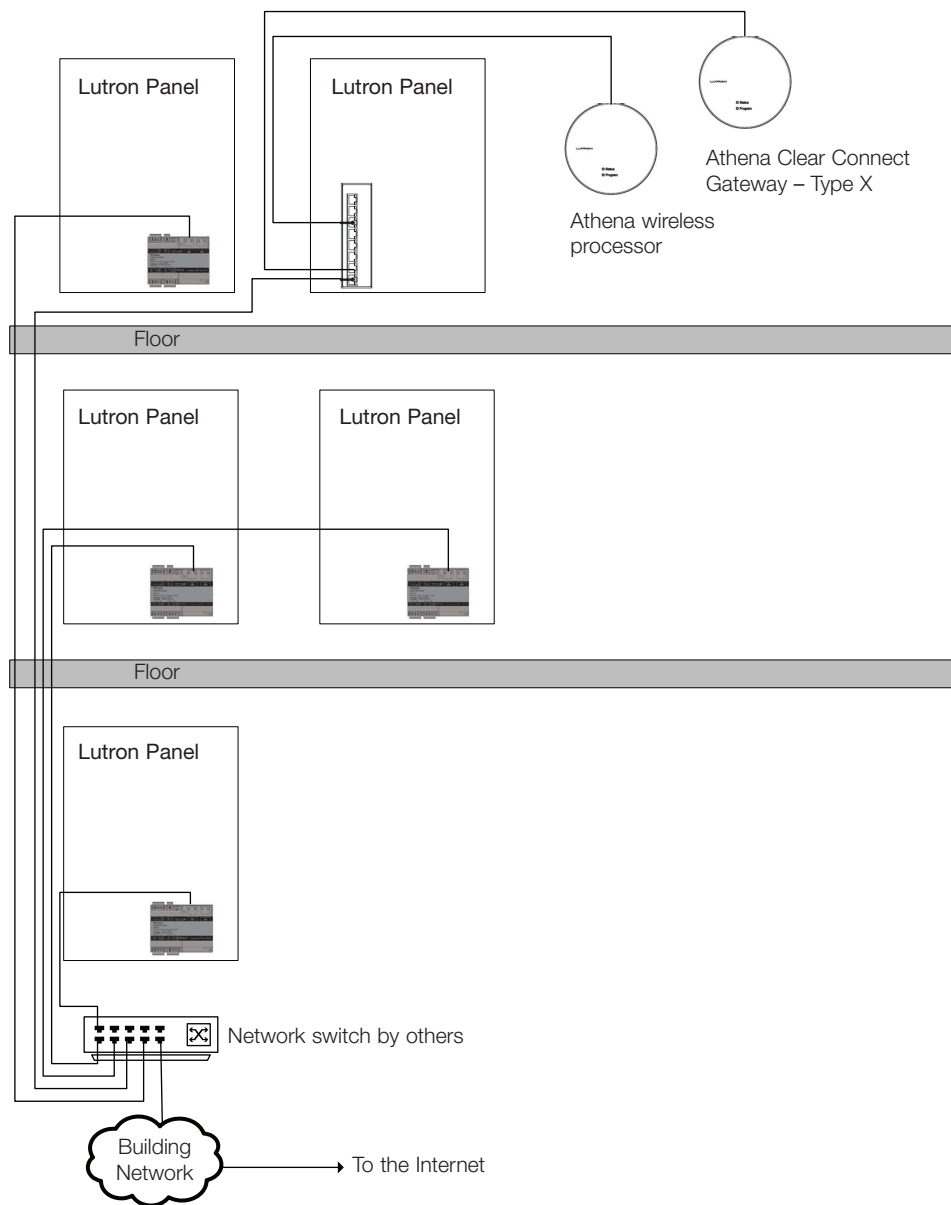
1 2 3 4

**

QS Keypad

QS Device
Interface

QS
Keypad

QS Link Wiring Rules

* Terminal 2 (V+) should NEVER be connected between devices that supply PDUs.
** For QS Link power supply wiring connection details, refer to the installation instructions for the specific power supply model being used.

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System Riser Diagram - North America

Lutron Panel

Lutron Panel

Athena Clear Connect
Gateway – Type X

Athena wireless
processor

Floor

Lutron Panel

Lutron Panel

Floor

Lutron Panel

Network switch by others

Building
Network

→ To the Internet

Note: Refer to the IT Guide at www.lutron.com/AthenaITguide
for more information and networking requirements.

System Riser Diagram - 220–240 V∼ Regions
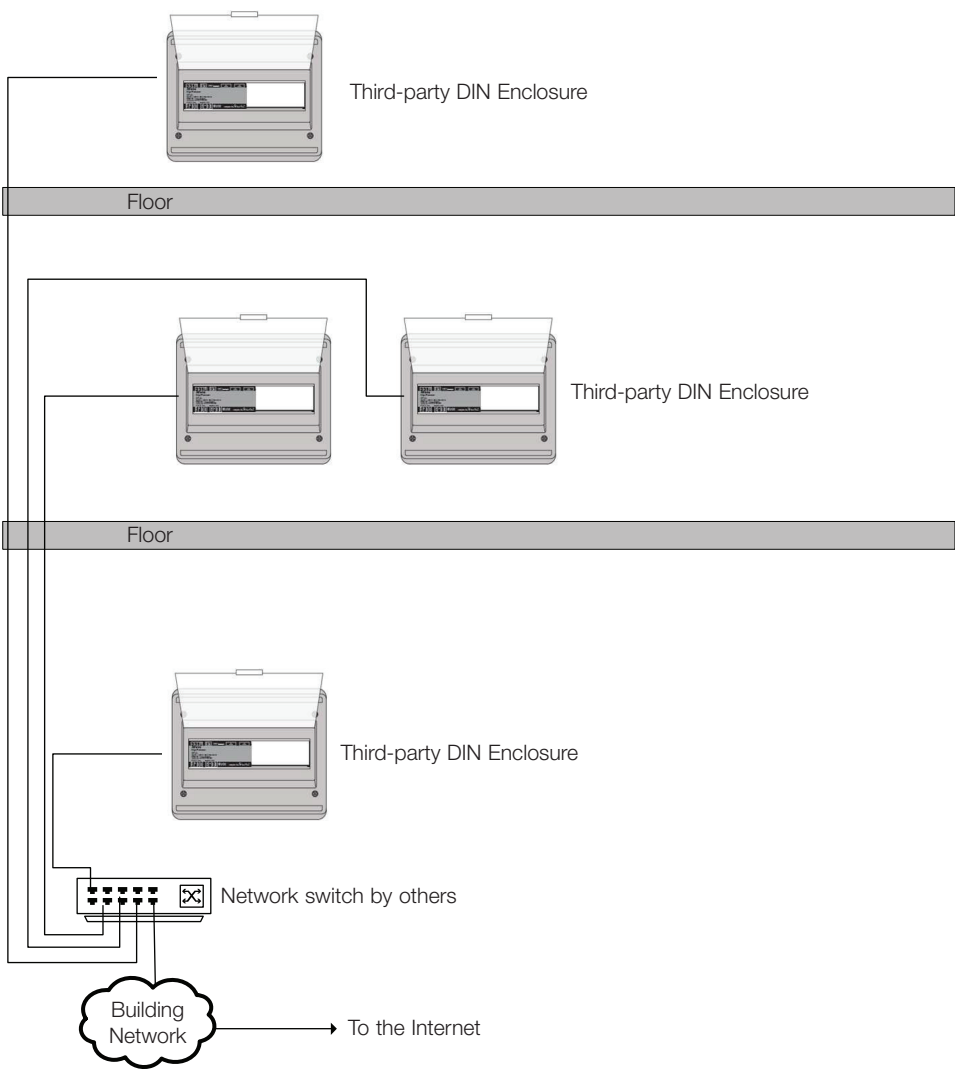
Third-party DIN Enclosure

Floor

Third-party DIN Enclosure

Floor

Third-party DIN Enclosure

Network switch by others

Building Network → To the Internet

Note: Refer to the IT Guide at www.lutron.com/AthenaITguide
for more information and networking requirements.

Job Name:	Model Numbers:
Job Number:	

Software

User Access

- myLutron username and password required for user access

OpenADR Compliant

- OpenADR 2.0b compliant when used with LUT-Q-OPNADR-CPN8064

Lutron App

- System processors require an internet connection
- The Athena system can have up to 10 simultaneously connected mobile app clients
- Compatible with iOS® and Android®
- Requires iOS® 13 or newer for Apple® devices and Android 12 or newer for Android® devices

Software Capabilities

DALI® Emergency Testing

- System capability that enables the Athena processor to schedule, manage, and report test results of DALI®-2 certified emergency loads connected to the QSN-2DALUNV-D/S modules.
- Processor must be connected to the internet to obtain the test results report

Lighting Control

- Monitor current status of areas, scenes, and zones
- Activate lighting scenes
- Adjust lighting zone levels
- Modify lighting zone levels in area scenes
- Control the intensity and color of Ketra fixtures
- Adjust saturated color and vibrancy of Ketra fixtures

QS Shade Control

- Monitor current status of shade groups and drives
- Activate shade presets
- Adjust shade levels

Scheduling

- Events can be scheduled to occur at fixed times or relative to sunrise/sunset and can be programmed to occur once or to be reoccurring

Load Shed/Demand Response

- Participate in load shed/demand response programs offered by local utility companies
- Apply a load shed reduction to the system, thereby reducing the building's lighting power usage

Job Name:	Model Numbers:
Job Number:	

Athena Security Statement

Lutron takes cybersecurity very seriously. We actively monitor the threat landscape and take a proactive approach to security and privacy, continuously working to update and enhance our systems and processes.

At Lutron, we call our approach to cybersecurity **"Secure Lifecycle"**, and we would like to present the following steps we take to protect your security and privacy:

- **Security by Design.** When building a new system, Lutron utilizes a dedicated security team to ensure best practices are implemented. Security is built in. It is not an afterthought or an add-on.
- **Third-Party Validation.** Security is complicated. Lutron has a dedicated team of internal experts, but we also leverage external experts to double-check our work, and to make security recommendations.
- **Continuous Monitoring and Improvements.** Security is a constantly moving target. Lutron uses a dedicated security team to continuously monitor for potential threats and, when needed, send out security patches to update installed systems.
- **Ongoing Support.** Lutron has the resources you need to answer questions about security when they arise

We incorporate a variety of security features into our product designs. These features include recommendations from the National Institute of Standards and Technology (NIST) among others, and they are aimed at meeting our secure lifecycle protections. While we do not publish a comprehensive list of our security features, the following list is a small example of some of the techniques employed in our system designs for Athena Processors, Light Management Hubs, Clear Connect – Type X Gateway devices, and associated services (such as mobile applications and cloud resources):

1. Secure and authenticated remote access with unique keys for every Athena system
2. A secure hardware element ("chip") on all Athena processors and Clear Connect – Type X Gateway to guard the keys used for secure communication and authentication
3. Enforcing industry-standard encrypted communication and techniques for our integration protocols to the highest extent possible. Any integrated third-party components or systems should be evaluated independently.
4. Secure commissioning – all communication between the system programming software tool/app and the processors is encrypted and authenticated. Programming a system requires permission to access that system.
5. Security updates are pushed out automatically to the lighting system for urgent security patches. Lutron is committed to one year of security support from system start-up date.
6. Use of industry-standard techniques for cloud-based integrations, such as OAuth2.0
7. Signed processor firmware to ensure a firmware update is authentically from Lutron.

If you have additional questions or would like to make a vulnerability disclosure to Lutron, please contact Lutron's 24/7 Technical Support Line at 1.844.LUTRON1 or email us at support@lutron.com.

Compatible Models - North America

Load controls
– QSN-4T5-120-D
– QSN-2DALUNV-D
– QSN-4S8-120-D
– QSN-4A5-S
– QSN-4A5-120-D
– QSN-2ECO-120-D
– QSN-4S16-S
– QSN-4T16-S
– QSN-2ECO-S
– QSE-CI-DMX
– QSN2-4T20-S
– QSN2-4T16-S-347
– QSN2-4S20-S
– QSN2-2ECO-S
– QSN-2DALUNV-S

Wall controls
– PJ2-*
– PX-*
– QSWA-*
– QSWAS-*
– QSWE-*
– QSWS2-*
– QSWS2-KS-*
– QWP-*
– Q-TOUCH5-WH

Shades
– Contract Roller Shades
– Sivoia QS Shades

Sensors
– GRX-IRPS
– EC-DIR*
– GRX-CES*
– LOS-*
– LRF2-OCR2B*
– LRF2-DCRB*
– LUT-WS*
– QSM2-*

Accessories
– LUT-19AV-1U
– LUT-5x10-ENC
– LFG*
– LTR-*
– LPFP-*
– L-PED*
– PICO-*

Power Interfaces
– TVI-LMF-2A
– C5-*
– PHPM-*
– GRX-TVI

Integration Interfaces
– LUT-Q-OPNADR-CPN8064
– QSE-CI-NWK-E
– QSE-IO
– QSE-CI-WCI

Emergency
– LUT-ELI-3PH (for QSN-* load control panels)
– LUT-SHUNT-A-TD (for Ketra loads)
– LUT-SHUNT-FM (for Athena wireless loads)

Power Supplies
– QSPS-*

Cable
– QS-CBL-*
– GRX-CBL-*
– GRX-PCBL-*

In-Fixture Controls
– A-WN-D01-RF-*
– A-WN-D01-OCC-*
– DFC-OEM-DBI

* Designates additional model number characters that may vary depending on the specific model chosen.

Job Name:	Model Numbers:
Job Number:	

Compatible Models - 220-240 V∿ Regions

Load controls
– QSNE-4A5-230-D
– QSNE-4T10-230-D
– QSN-2DALUNV-D
– QSE-CI-4M-D
– QSNE-4S5-230-D
– QSE-CI-DMX

Wall controls
– Pxy-*
– PX-*
– QSWA-*
– QSWAS-*
– QSWE-*
– QSWS2-*
– QSWS2-KS-*
– QWP-*
– Q-TOUCH5-WH

Shades
– Contract Roller Shades
– Sivoia QS Shades

Sensors
– GRX-IRPS
– EC-DIR*
– GRX-CES*
– LOS-*
– LRFx-OCR2B*
– LRFx-DCRB*
– LUT-WS*
– QSMx-*

Accessories
– LUT-19AV-1U
– LUT-5x10-ENC
– LFG*
– LTR-*
– LPFP-*
– L-PED*
– PICO-*

Power Interfaces
– C5-*

Integration Interfaces
– QSE-CI-NWK-E
– QSE-IO
– QSE-CI-WCI

Emergency
– LUT-ELI-3PH (for QSN-* load control panels)

Power Supplies
– QSPS-*

Cable
– QS-CBL-*
– GRX-CBL-*
– GRX-PCBL-*

* Designates additional model number characters that may vary depending on the specific model chosen.