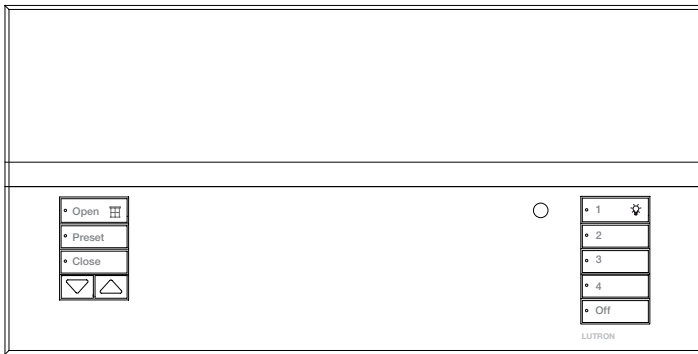


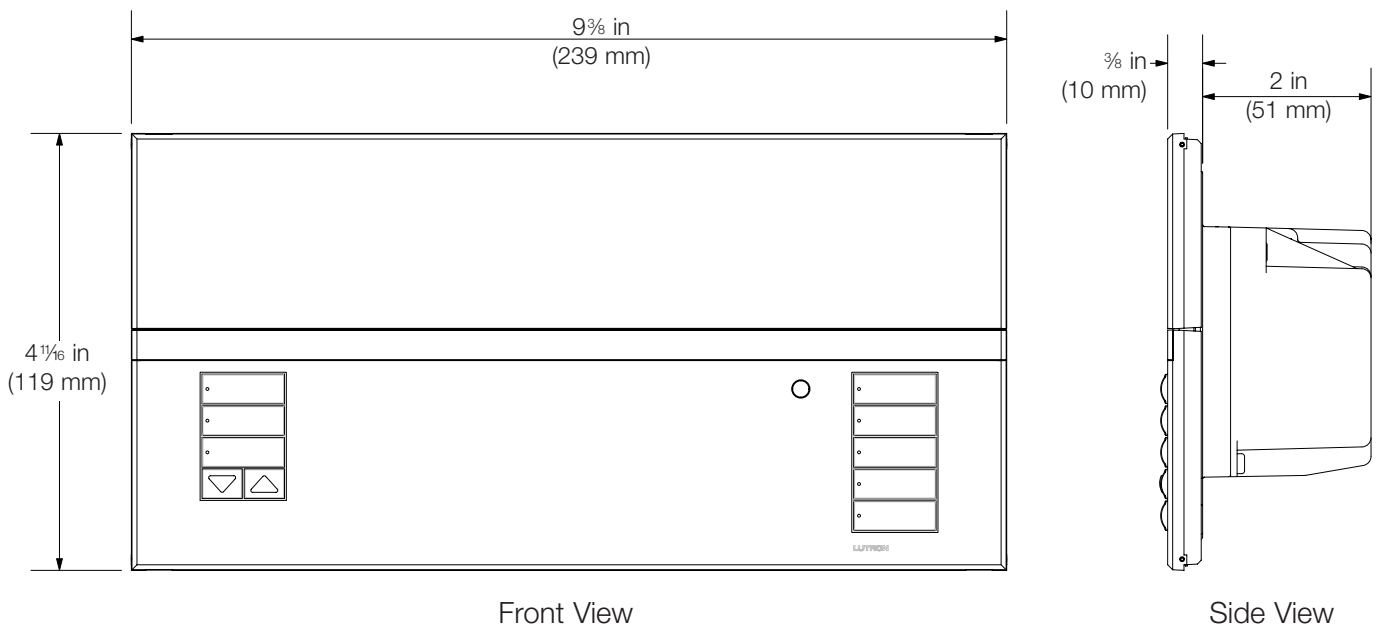
GRAFIK Eye® QS Control Unit



Description

GRAFIK Eye® QS is the premier energy-saving light and shade control. GRAFIK Eye® QS includes an astronomic timeclock, intuitive lighting presets, and direct shade control. Additionally, the GRAFIK Eye® QS is compatible with all Lutron wired QS products and systems, including Quantum®.

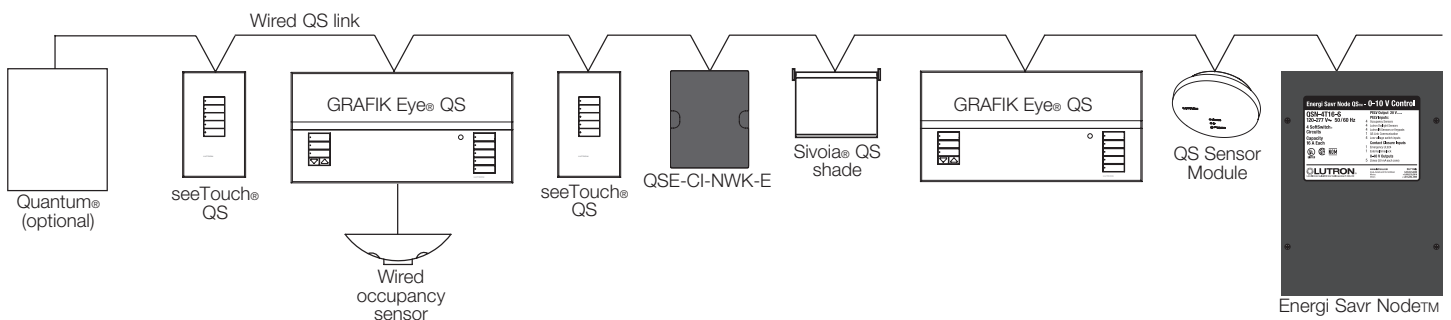
Mechanical Dimensions



Fits into a 4-gang U.S. backbox, 3 1/2 in (89 mm) deep; Lutron P/N 241-400.

System Topology

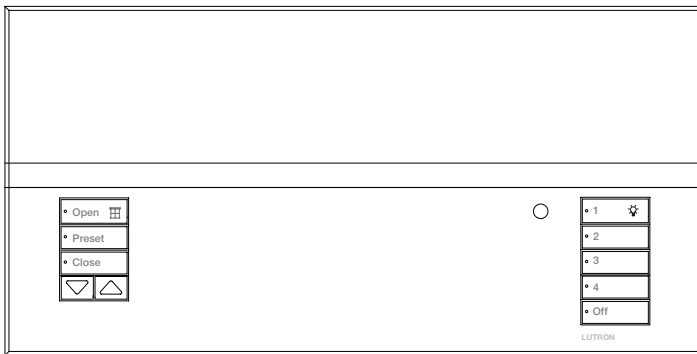
Example of Wired System



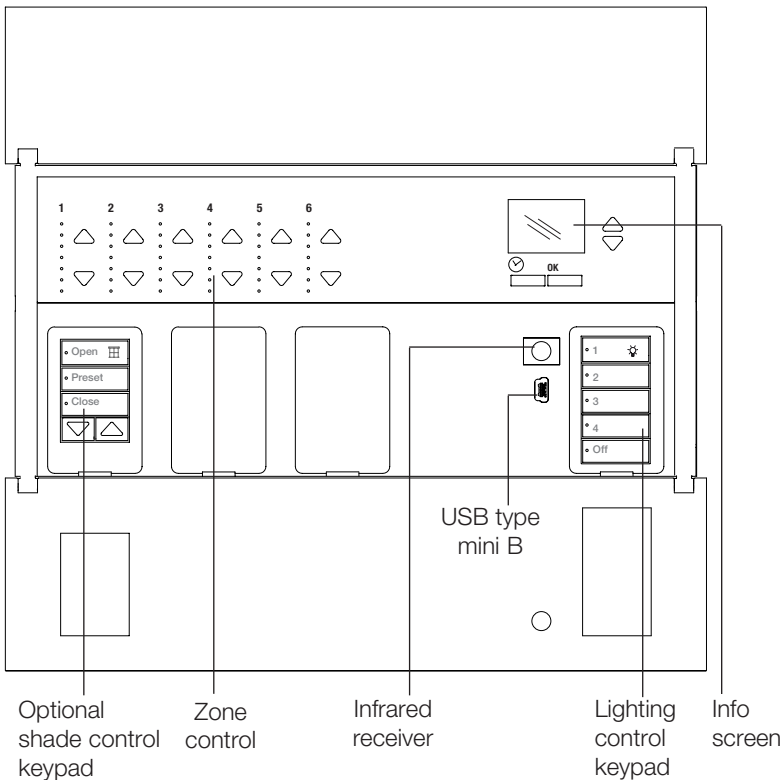
Job Name:

Model Numbers:

Job Number:



Note: General Engraving (-EGN) shown.



Features

- Pushbutton recall of four preset lighting scenes, plus Off.
- Twelve (12) additional scenes accessible through other QS devices, such as seeTouch® QS wallstations.
- Optional integrated shade control buttons, which can also be added to the unit after installation.
- Master override buttons to raise and lower all lights.
- Allows setup of lighting scenes and shade presets using buttons on the control unit.
- Built-in infrared (IR) receiver.
- External IR connection.
- Built-in astronomic timeclock.
- Info screen shows zone light level percentage, energy savings, zone labeling, and programming.
- Lockout option prevents accidental changes.
- One occupancy sensor input and 24 V== power for occupancy sensor.
- QS communication link for seamless integration of lights, motorized window treatments, occupancy sensors, wallstations, and integration interfaces.
- Compatible with all Lutron QS system components.
- Backlit buttons with engraving make unit easy to locate and operate.
- Available in a variety of colors and finishes.

Job Name:

Model Numbers:

Job Number:

Specifications

Input Power

- 100 V~ 50/60 Hz

Environment

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

Lighting Sources/Load Types

Controls the following lighting sources with a smooth, continuous square law dimming curve or on a full conduction non-dim basis:

- Incandescent
 - Halogen
 - Magnetic low-voltage transformer
 - Neon and cold cathode
 - Non-dim (incandescent, magnetic low-voltage, or neon/cold cathode)
- Please refer to “Capacities” for more information.

Controls the following lighting sources with a smooth, continuous square law dimming curve or on a full conduction non-dim basis through separate Lutron power interfaces:

- Electronic low-voltage transformer
- Non-dim
- 0 - 10 V

Capacities

	100 V~ 50 / 60 Hz
Unit Capacity (watts)	1600
MLV	1600 VA / 1200 W
Zone Capacity (watts)	25 – 600
MLV	25 – 600 VA / 25 – 480 W

Load Type Notes

- All electronic low-voltage (ELV) lighting used with an interface must be rated for reverse phase control dimming. Before installing an ELV light source, verify with the manufacturer that their transformer can be dimmed. When dimming, an ELV interface (such as the PHPM-PA-DV-WH) must be used with the control unit.
- Not all zones must be connected; however, connected zones must have a minimum load as specified above.
- No zone may be loaded with more than the capacity specified above. For higher wattage applications, use Lutron power module PHPM-PA-JA or PHPM-SW-JA.

System Limits

- The QS wired communication link is limited to 100 devices or 100 zones.

Key Design Features

- 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.
- Tested to withstand 16 kV electrostatic discharge without damage or memory loss.
- RTISS™-equipped: Compensates in real time for incoming line voltage variations (no visible flicker with +/-2% change in RMS voltage per cycle, and +/-2% Hz change in frequency per second).
- Power failure memory retains programming and light level settings for up to 10 years in the event of a power loss.
- The GRAFIK Eye® QS supplies 3 Power Draw Units (PDUs) on the QS link.
For complete information, see “Power Draw Units on the QS Link,” Lutron PN 369405.
- Faceplate is hinged at the top and bottom, and stays open at 180° for ease of access.

Scene and Shade Buttons

- Large, rounded buttons are easy to use.
- Backlit buttons with optional engraving make it easy to find and to operate the control unit in low light conditions (backlight can be disabled).
- Optional button engraving is angled up to the eye for easy reading.
- Predefined label stickers are included for field labeling.
- 4 preset lighting scenes, plus Off, are accessible from the front of the control unit.
- 12 additional scenes are stored in the control unit and are accessible from seeTouch® QS wallstations and QS interfaces.
- Light levels fade smoothly between scenes. Fade time can be set differently for each scene: 0 to 59 seconds, or 1 to 60 minutes. Maximum fade time from Off is 3 seconds.

Job Name:	Model Numbers:
Job Number:	

Specifications

Shade Control

- The GRAFIK Eye® QS can include up to 3 shade button columns. Each column has backlit open, preset, close, and raise/lower buttons.
- Each shade button column can be programmed to operate one shade or a group of shades. (Shades may be assigned to more than one shade button column).
- Faceplates are available with 1, 2 and 3 shade button columns.

Zone Control

- Each zone has a dedicated raise and lower button to adjust the zone.
- Each zone has a dedicated 7 LED bar graph for level status. Percentage of light level and energy saved is displayed on the info screen.
- All zone information has blue backlit LEDs. Backlight turns off when idle for 30 seconds.

Info Screen

- OLED (organic LED) screen is viewable from all angles.
- Screen turns off when idle for 30 seconds.
- Programmable zone labels.
- Programmable scene labels.
- Status of real-time zone percentage and energy savings.
- Programmable timeclock schedules.
- Programmable shade labels.

Astronomic Timeclock

- Integral to all units.
- 7 daily schedules available.
- One available holiday schedule is programmable by date up to one year in advance.
- 25 events per day maximum.
- Timeclock events are programmable to control scenes that affect any Energi Savr Node™ unit connected on the QS link without changing the local scene on the GRAFIK Eye® QS.
- Astronomic times are programmable by integral city database or by entering latitude and longitude. Times automatically adjust throughout the year based on location.
- Local timeclock events can activate any of the following features:
 - Scenes 1 to 16 and Off
 - Any available shade presets
 - Start and End afterhours mode
 - Enable and Disable daylighting for all zones/groups
 - Enable and Disable occupancy for occupancy/vacancy sensors
 - Enable and Disable occupied events for all occupancy sensors

System Communications and Capacities

- Low-voltage type IEC PELV/NEC® Class 2 wiring connects control units, wallstations, motorized shades, and control interfaces.
- A QS system can have up to 100 devices and 100 zones.

Infrared

- Infrared (IR) receiver allows infrared transmitters to select 8 scenes, raise/lower lighting zones, or raise/lower shades.
- Transmitter buttons imitate buttons on faceplate.
- 50 ft (15 m) line of sight range.
- Terminal block infrared input for connection to a wired IR input from third-party equipment.
- IR can be disabled via programming.
- Works with Lutron GRX-IT and GRX-8IT infrared remote controls.

Job Name:

Model Numbers:

Job Number:

Specifications

Accessory Controls: seeTouch® QS Wallstations (QSWS2)

- Wired seeTouch® QS keypads provide the following features:
 - Access to one or more of the 16 scenes on the GRAFIK Eye® QS
 - Zone toggle, partitioning, sequencing, fine tune, panic mode, and timeclock enable/disable
 - Contact closure inputs
 - Certain functions are only available on specific wallstation configurations. Refer to the *seeTouch* QS specification submittal.

Accessory Controls: QS Sensor Module (QSMX-4W)

- The QS Sensor Module provides a means to link wired occupancy and daylight sensors to a GRAFIK Eye® QS via the wired QS link.
 - Occupancy sensors wired to a QS Sensor Module can be used by one or more GRAFIK Eye® QS control units on the wired link.
 - Daylight sensors wired to a QS Sensor Module can be used by one or more GRAFIK Eye® QS control units on the wired link.
 - Infrared sensors can control either one or more zones or scenes on the GRAFIK Eye® QS. Functionality varies; refer to the documentation for the QS Sensor Module for details.

Accessory Controls: Contact Closure Input/Output Interface (QSE-IO)

- Recalls preset light levels for the following set of scenes on the GRAFIK Eye® QS:
 - Scenes 1-4 and Off Scenes 9-12 and Off
 - Scenes 5-8 and Off Scenes 13-16 and Off
- Sequence scenes 5-16, Enable/Disable Zone Lockout, Enable/Disable Scene Lockout, Enable/Disable Panic Mode, Enable/Disable Timeclock.
- Occupancy Sensors. An individual input counts as 1 occupancy sensor for the GRAFIK Eye® QS. Each input can be assigned to either Scene Control or Zone Control (please refer to the Occupancy Sensor(s) section of this guide).
- Zone Toggle. Allows an input to toggle one or more zones to a preset level and off.
- Shade Output mode. A Shade Column on the GRAFIK Eye® QS can be linked to control outputs 1-3 and/or outputs 4-5 on the QSE-IO.

Accessory Controls:

DMX Output Interface (QSE-CI-DMX)

- Any zone on the GRAFIK Eye® QS control unit can be mapped to any single DMX512 Channel.
- Any zone on the GRAFIK Eye® QS control unit can be simultaneously mapped to any three DMX512 channels (providing RGB/CMY control).
- DMX loads cannot be used with daylighting.

Accessory Controls: Ethernet and RS232 Interface (QSE-CI-NWK-E)

- Allows for monitoring and control of the outputs and local scenes of the GRAFIK Eye® QS.

Accessory Controls: QS Keyswitch Wallstations (QSWS2-KS)

- Recalls preset light levels for any two scenes including Off.
- Allows fine-tuning (raise/lower level) of a zone or group of zones.
- Starts/Stops scene sequencings (Scenes 1-4 or Scenes 5-16)
- Enables/Disables Timeclock
- Enables/Disables occupancy sensors
- Enables/Disables daylight sensors
- Allows toggle of Zone(s) to a preset level and off.
- Enables/Disables panic mode.
- Starts/Stops afterhours mode.

Other Accessory Controls and Devices

- Energi Savr Node™ QS (ESN)

Occupancy Sensor(s)

- The GRAFIK Eye® QS works with occupancy sensors through either:
 - Scene Control: Up to four sensors activate user-selectable occupancy and vacancy scenes.
 - Zone Control: up to four sensors per zone activate user-selected occupancy and vacancy zone levels.
- Occupancy sensors may include:
 - Contact closure sensors wired to CCI input on back of GRAFIK Eye® QS
 - Wired sensors connected QS Sensor Module (QSM)
- If any sensor in a group detects occupancy, then the GRAFIK Eye® QS will go to the designated occupancy scene or zone level.
- If all sensors in a group detect vacancy, then the GRAFIK Eye® QS will go to the designated vacancy scene or zone level.

Job Name:

Model Numbers:

Job Number:

Specifications

Daylight Sensor(s)

- The GRAFIK Eye® QS allows daylight sensors to control one or more lighting zones to adjust electric light levels based on measured daylight levels.
- Daylight sensors may include:
 - Wired sensors connected to a QS sensor module (QSM)
- A daylight sensor can control one or more GRAFIK Eye® QS zones:
 - Each zone can be calibrated to target light levels
 - A zone can be controlled by no more than one daylight sensor
- Daylight control can be enabled or disabled on a scene-by-scene basis
 - By default, daylight control is enabled in all scenes

Note: Daylight control through the GRAFIK Eye® QS only affects lighting loads. Shade groups cannot be controlled by daylight sensors. Daylighting does not affect DMX or RGB/CMY DMX loads.

Contact Closure Input (CCI) with Power Supply Output

- Each GRAFIK Eye® QS has one contact closure input (Terminal A).
 - The attached device must provide a dry contact closure or solid-state output.
 - Input is miswire-protected up to 36 V==.
- The contact closure is capable of accepting the following types of inputs:
 - Maintained (default): The GRAFIK Eye® QS control unit will act on both a contact closure and a contact open/release event.
 - Momentary: The GRAFIK Eye® QS control unit will act on only contact closure events.
- Each GRAFIK Eye® QS can supply 50 mA maximum at 24 V==.
 - Useful for powering occupancy sensors.
 - An auxiliary power supply must be used if the device requires more than 50 mA.
- The CCI is capable of operating in the following modes
 - Occupancy: If an occupancy sensor is wired directly to the GRAFIK Eye® QS.
 - Emergency: This setting allows the GRAFIK Eye® QS to work with a LUT-ELI. When an emergency situation is detected, all lights will go to full on, and no operations will be allowed until the emergency signal is cleared.
 - Afterhours: Allows the CCI to start and end the afterhours mode.
 - Timeclock: Allows the CCI to enable and disable the timeclock.
 - Scene Lockout: Prevents the user from making any changes to the control unit. The current scene will stay on until the CCI enables normal operation.
 - Save Never: Prevents any changes from being saved while the CCI is being used.
 - Disable CCI: The CCI will have no effect on the system and will not appear on the list of available sensors.

Security Lockout Password

- A 4-digit password (using characters A to Z and 0 to 9) can be enabled/disabled to lock out access to the Programming Menu.
- By default there is no password enabled on the GRAFIK Eye® QS.
- If case the 4-digit password is forgotten, contact Lutron Technical Support to regain access.

Job Name:	Model Numbers:
Job Number:	

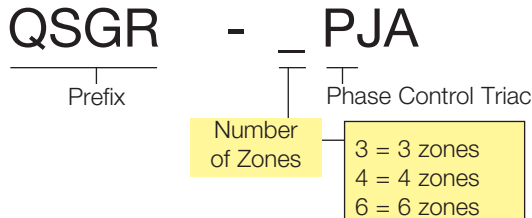
GRAFIK Eye® QS

Custom Color Options and Model Numbers

You must order a Base Unit and a Faceplate Kit

See Standard Color Combinations page for faceplate, stripe, and button colors

Base Unit



Example:

QSGR-6PJA

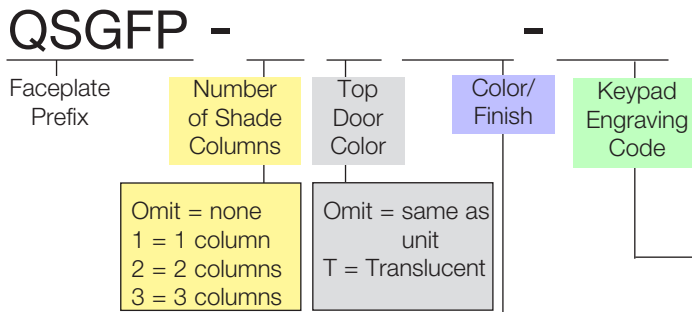
6-zone base unit
and

QSGFP-2IV-EGN

Ivory faceplate kit with two
shade columns and general
engraving

Faceplate Kit

(includes coordinating stripe and buttons)



Faceplate Custom Color/Finish Codes

Architectural Matte Finishes

Standard	
(ship in 48 hours)	
White	WH
Ivory	IV
Beige	BE
Gray	GR
Brown	BR
Black	BL
Almond	AL
Light Almond	LA

Architectural Metal Finishes

Bright Brass	BB
Bright Chrome	BC
Bright Nickel	BN
Satin Brass	SB
Satin Chrome	SC
Satin Nickel	SN
Antique Brass	QB
Antique Bronze	QZ

Anodized Aluminum

Clear	CLA
Black	BLA
Brass	BRA

Satin Color Matte Finishes

Snow	SW
Biscuit	BI
Eggshell	ES
Taupe	TP
Midnight	MN
Limestone	LS
Stone	ST
Desert Stone	DS
Terracotta	TC
Hot	HT
Goldstone	GS
Palladium	PD
Plum	PL
Turquoise	TQ
Bluestone	BG
Sea Glass	SG
Greenbrier	GB
Sienna	SI
Merlot	MR
Mocha Stone	MS

Keypad Engraving Codes

Omit = Unengraved

Ships with engraving certificate that
customer can redeem at no charge

EGN = General Engraving



Lighting
keypad



Shade
column

NST = Non-Standard Text Engraving
Please visit the GRAFIK Eye® QS website
at www.lutron.com/grafikeyeqs
for custom engraving forms. Submit
completed form with order, and unit will
ship engraved as specified by customer.

Job Name:

Model Numbers:

Job Number:

GRAFIK Eye® QS

Custom Options and Model Numbers

See previous page for Other Custom Model Numbers

See Standard Color Combinations page for faceplate, stripe, and button colors

Custom Button Kit

QSGB - 5B - WH -

Custom Button
Kit Prefix

Button
Configuration

Button
Color/
Finish

Keypad
Engraving
Code

3BRL = 3-button with
raise/lower
(shade column)
5B = 5-button
(lighting keypad)

Button Kit Custom Color/Finish Codes

Architectural Matte Finishes

White	WH
Ivory	IV
Beige	BE
Gray	GR
Brown	BR
Black	BL
Almond	AL
Light Almond	LA

Satin Color Matte Finishes

Snow	SW
Biscuit	BI
Eggshell	ES
Taupe	TP

Keypad Engraving Codes

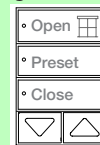
Omit = Unengraved

Ships with engraving certificate that
customer can redeem at no charge

EGN = General Engraving



Lighting
keypad



Shade
column

NST = Non-Standard Text Engraving

Please visit the GRAFIK Eye® QS website
at www.lutron.com/grafikeyeqs
for custom engraving forms. Submit
completed form with order, and unit will
ship engraved as specified by customer.

Custom Stripe Kit

QSGS - WH

Stripe
Kit
Prefix

Stripe Color/
Finish

Stripe Custom Color/Finish Codes

Same as Faceplate colors on previous page

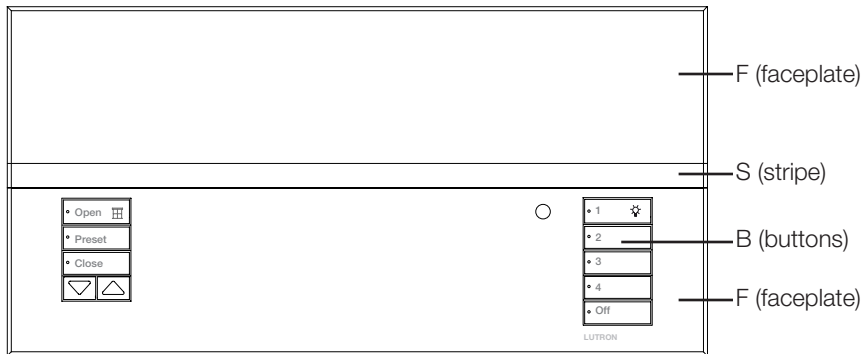
Job Name:

Model Numbers:

Job Number:

GRAFIK Eye® QS Standard Color Combinations

See previous pages for Custom Model Numbers



Faceplate is comprised of a top and bottom. The bottom will always be the color indicated under “faceplate.” The top may be the same color or translucent. Use the chart for faceplates that have the same color top and bottom. If a translucent lid is chosen, the stripe will automatically be the same color as the bottom lid.

Example:

If you order QSGR-4P-1WH, your GRAFIK Eye® QS with 4 lighting zones and 1 shade zone will come with a white faceplate (both top and bottom), gray stripe, and white buttons.

Suffix	Faceplate (F)	Stripe (S)	Button (B)	Suffix	Faceplate (F)	Stripe (S)	Button (B)
Architectural Matte				Satin Matte			
WH	White	Gray	White	MN	Midnight	Gray	Black
IV	Ivory	Beige	Ivory	TP	Taupe	Gray	Taupe
BE	Beige	Ivory	Beige	SW	Snow	Gray	Snow
GR	Gray	Black	Gray	ES	Eggshell	Beige	Eggshell
BR	Brown	Black	Brown	BI	Biscuit	Eggshell	Biscuit
BL	Black	Gray	Black	LS	Limestone	Gray	Gray
AL	Almond	Light Almond	Almond	ST	Stone	Gray	Gray
LA	Light Almond	Almond	Light Almond	DS	Desert Stone	Taupe	Taupe
Architectural Metal				TC	Terracotta	Taupe	Taupe
BB	Bright Brass	Black	Black	BG	Bluestone	Gray	Gray
BC	Bright Chrome	Black	Black	HT	Hot	Taupe	Taupe
BN	Bright Nickel	Black	Black	MR	Merlot	Taupe	Taupe
SB	Satin Brass	Black	Black	SI	Sienna	Brown	Brown
SC	Satin Chrome	Black	Black	GB	Greenbrier	Gray	Gray
SN	Satin Nickel	Black	Black	SG	Sea Glass	Gray	Gray
QB	Antique Brass	Black	Black	MS	Mocha Stone	Taupe	Taupe
QZ	Antique Bronze	Black	Black	GS	Goldstone	Ivory	Ivory
Anodized				PD	Palladium	Gray	Gray
CLA	Clear	Black	Black	PL	Plum	Taupe	Taupe
BLA	Black	Black	Black	TQ	Turquoise	Gray	Gray
BRA	Brass	Black	Black				

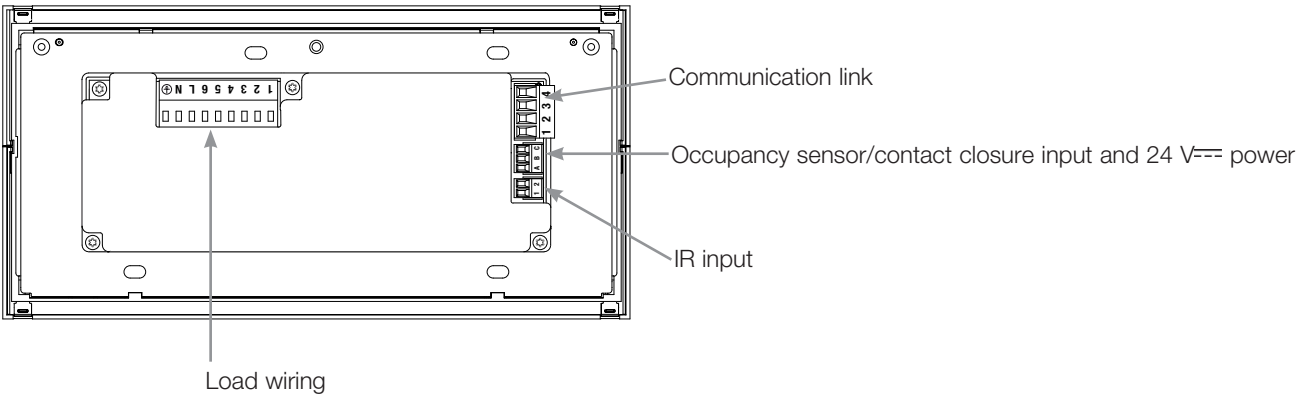
Job Name:

Model Numbers:

Job Number:

Wiring Diagrams

Terminations



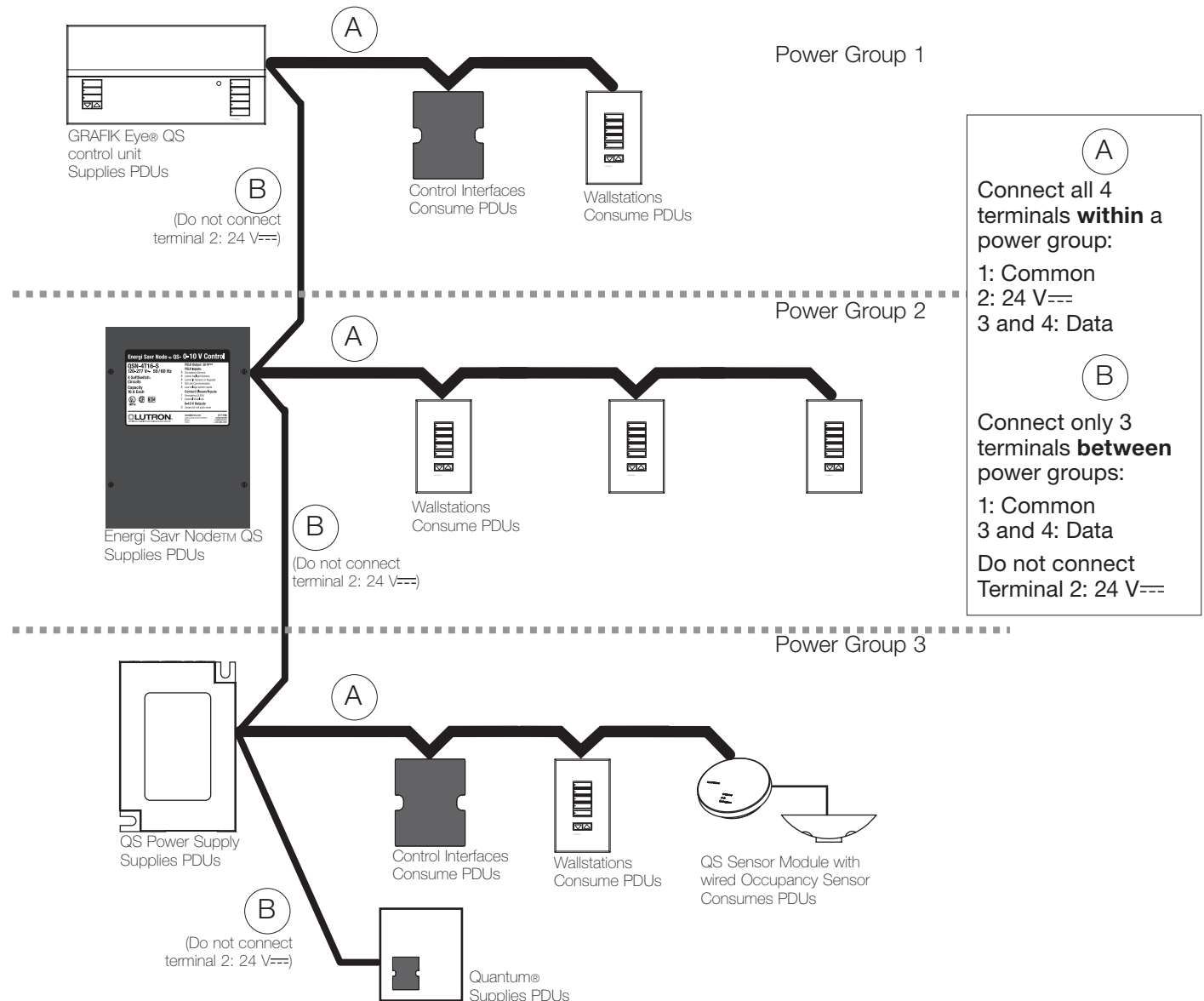
Job Name:	Model Numbers:
Job Number:	

Power Group Wiring Example

On the QS link, there are devices that supply power and devices that consume power. Each device has a specific number of Power Draw Units (PDUs) it either supplies or consumes. A Power Group consists of one device that supplies power and one or more devices that consume power; each Power Group may have only one power-supplying device. Refer to the QS Link Power Draw Units specification submittal (Lutron PN 369405) for more information concerning PDUs.

Within Power Groups on the QS link, connect all 4 terminals (1, 2, 3, and 4), shown by the letter A in the diagram. Between devices on the QS link that supply power, connect only terminals 1, 3, and 4 (NOT terminal 2), shown by the letter B on the diagram.

Wiring can be T-tapped or daisy-chained.

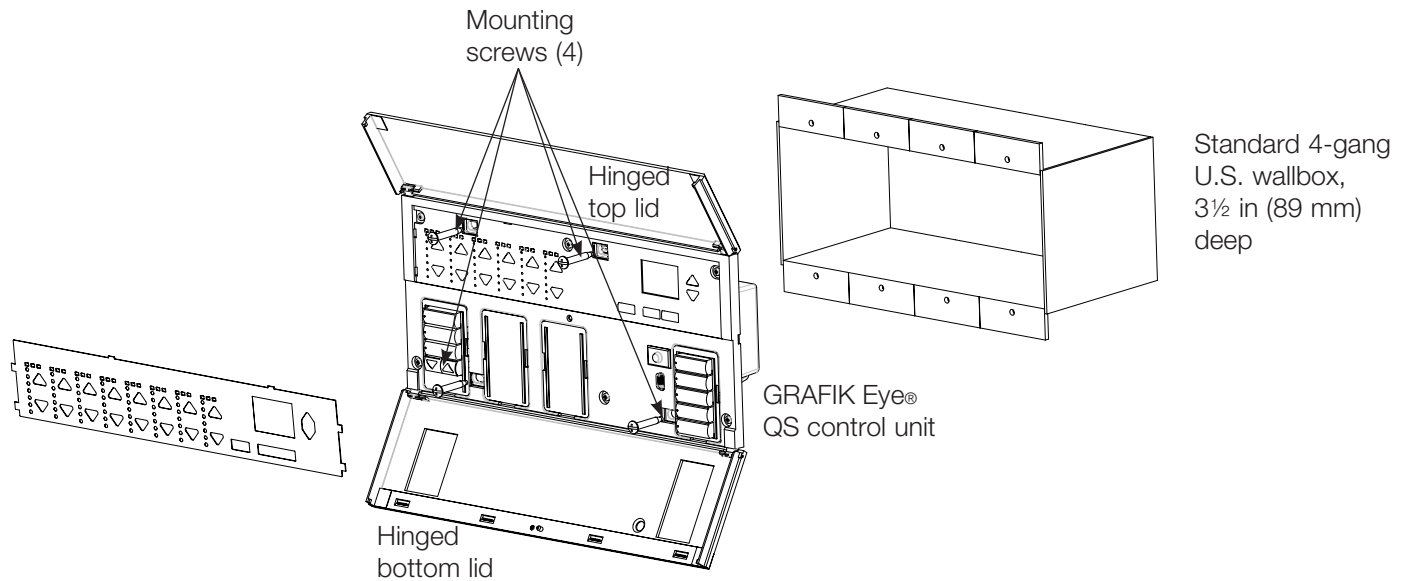


Job Name:

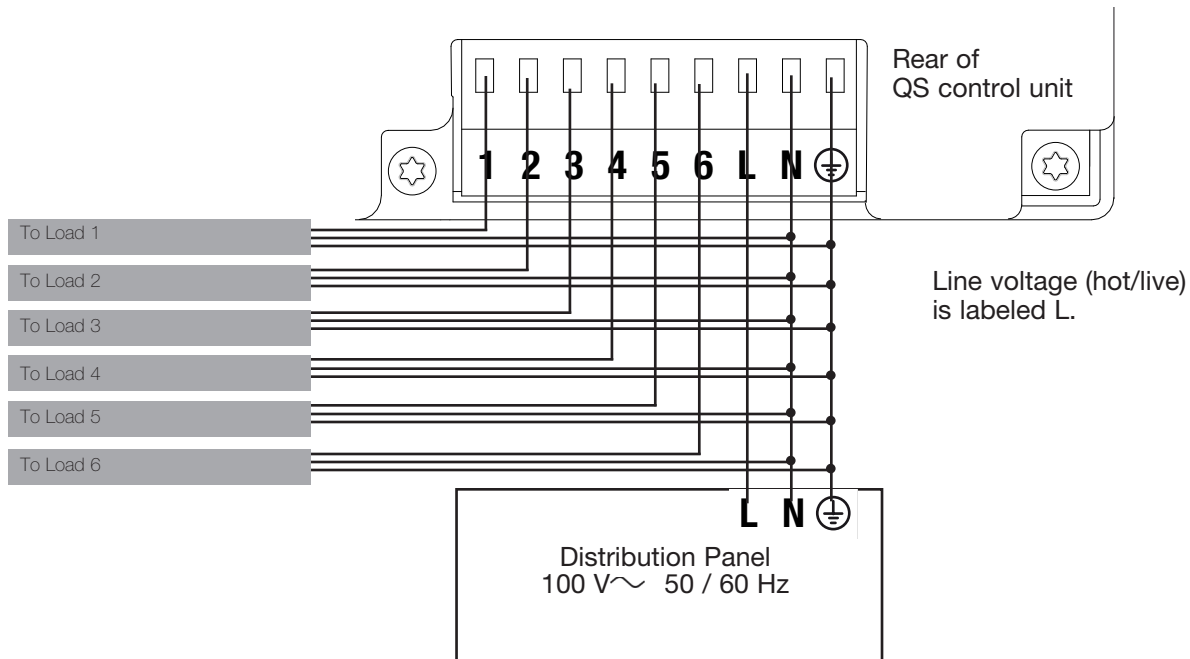
Model Numbers:

Job Number:

Mounting



Line Voltage Wiring



- Pull power wiring from distribution panel and to light fixtures.
- Each line voltage terminal can accept one 12 AWG (2.5 mm²) wire.
- Consult Lutron for non-dim relay wiring and/or load side emergency transfer wiring.

Job Name:

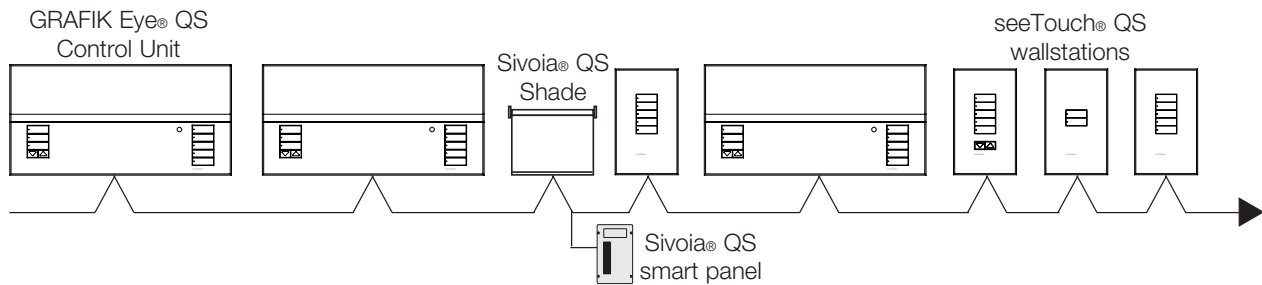
Model Numbers:

Job Number:

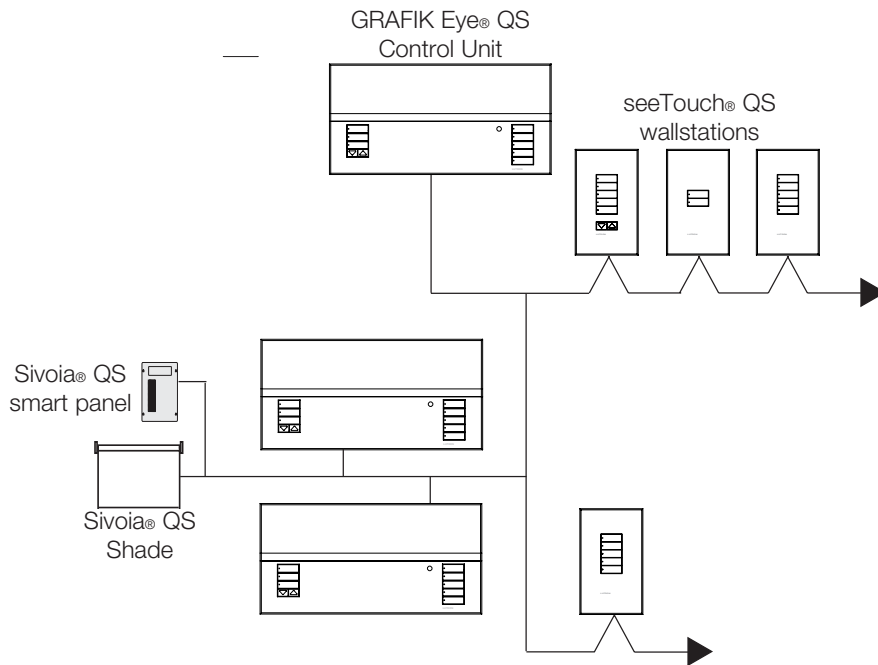
IEC PELV/NEC® Class 2 QS System Low-Voltage Wiring

- System communication uses low-voltage wiring.
- Wiring can be daisy-chained or T-tapped.
- Wiring must be run separately from line/mains voltage.
- IEC PELV/NEC® Class 2 wiring link requires:
 - Two 18 AWG (1.0 mm²) conductors for control power.
 - One twisted, shielded pair of 22 AWG (0.5 mm²) for data link.
 - Available from Lutron, P/N GRX-CBL-346S; check compatibility in your area.
- Total length of control link must not exceed 2000 ft (610 m).

Daisy-Chain Wiring Example



T-Tap Wiring Example



Job Name:

Model Numbers:

Job Number: