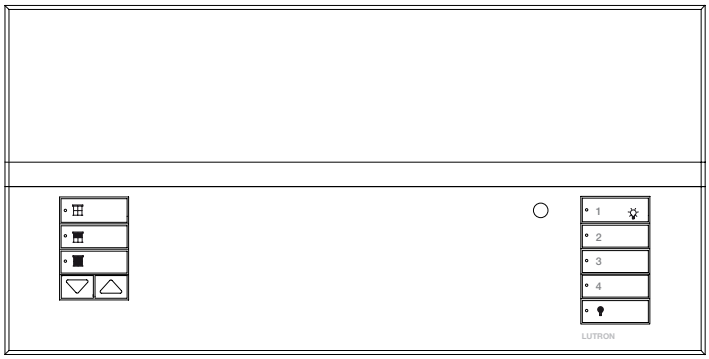
GRAFIK Eye® QS Wireless Control Unit (230 V~ CE)

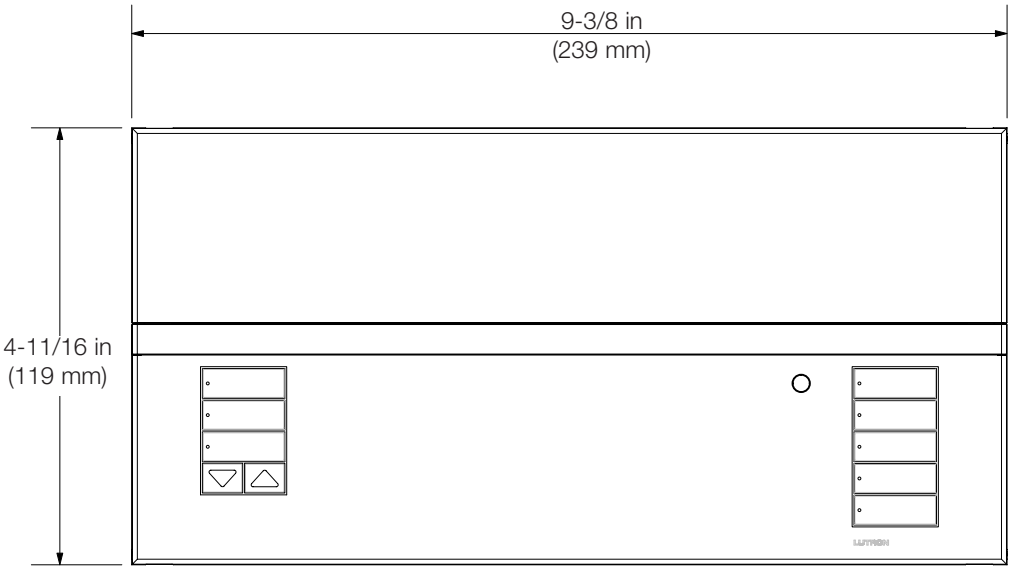


Description

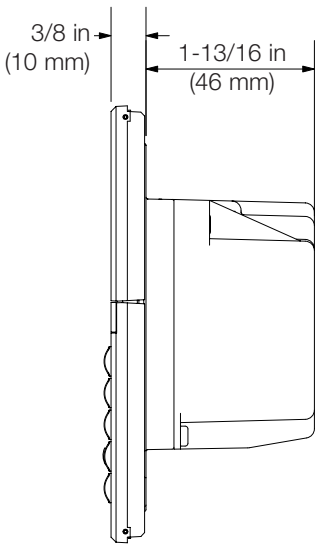
GRAFIK Eye QS Wireless is the premier energy-saving light and window treatment control. *GRAFIK Eye* QS includes an astronomic timeclock, intuitive lighting presets, and direct window treatment control. Now with wireless technology, you can use the *GRAFIK Eye* QS Wireless to seamlessly integrate with a variety of Lutron wireless products and systems, including Radio Powr Savr™ occupancy, vacancy, and daylight sensors, Sivoia® QS Wireless window treatments, Pico™ wireless control, and other *GRAFIK Eye* wireless products. Additionally, the *GRAFIK Eye* QS Wireless is compatible with all Lutron wired QS products and systems.

GRAFIK Eye QS Wireless is compatible with Quantum™.

Mechanical Dimensions



Front View



Side View

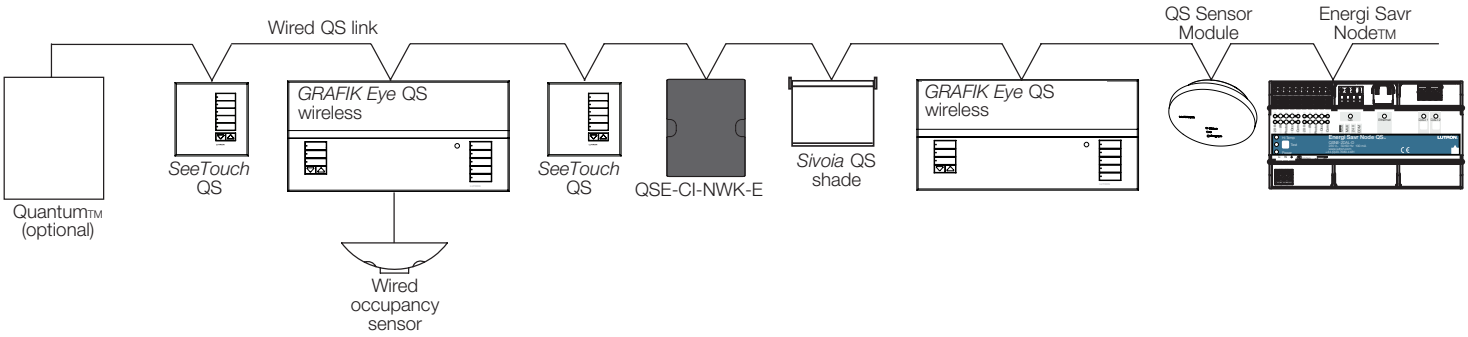
Fits into a 4-gang U.S. backbox, 3.5 in (89 mm) deep; Lutron P/N 241-400

Job Name:	Model Numbers:
Job Number:	

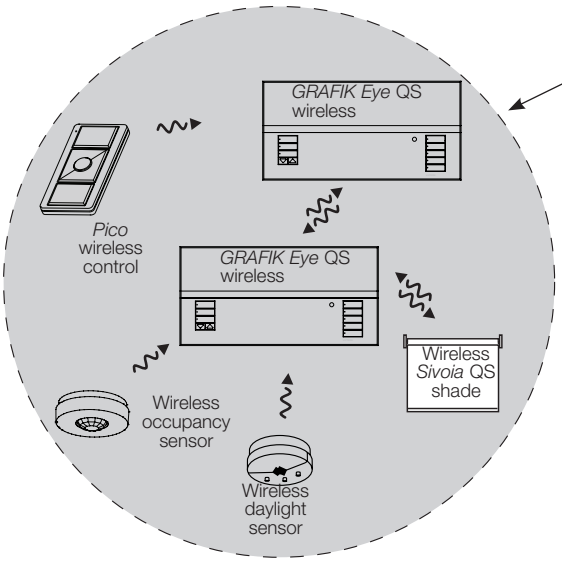
System Topologies

The *GRAFIK Eye* QS Wireless can be specified in three different system topologies. Examples of each are shown below.

Example of Wired System

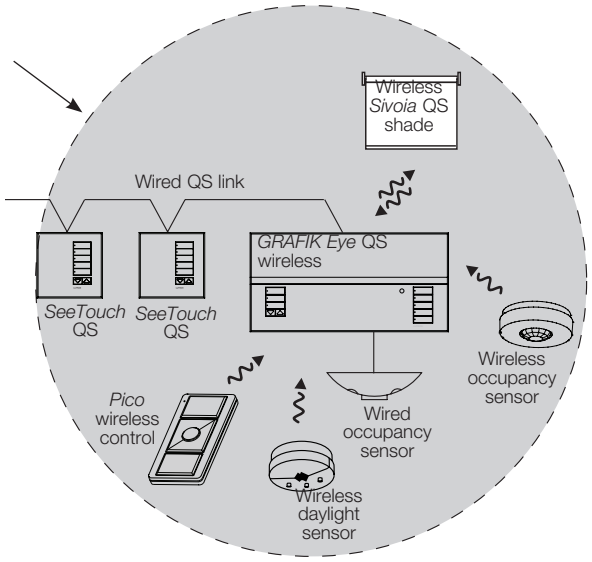


Example of *GRAFIK Eye*-centric Wireless System

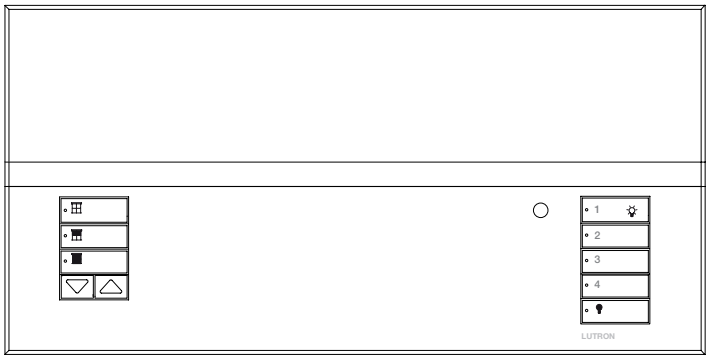


30-foot (10 m) wireless range

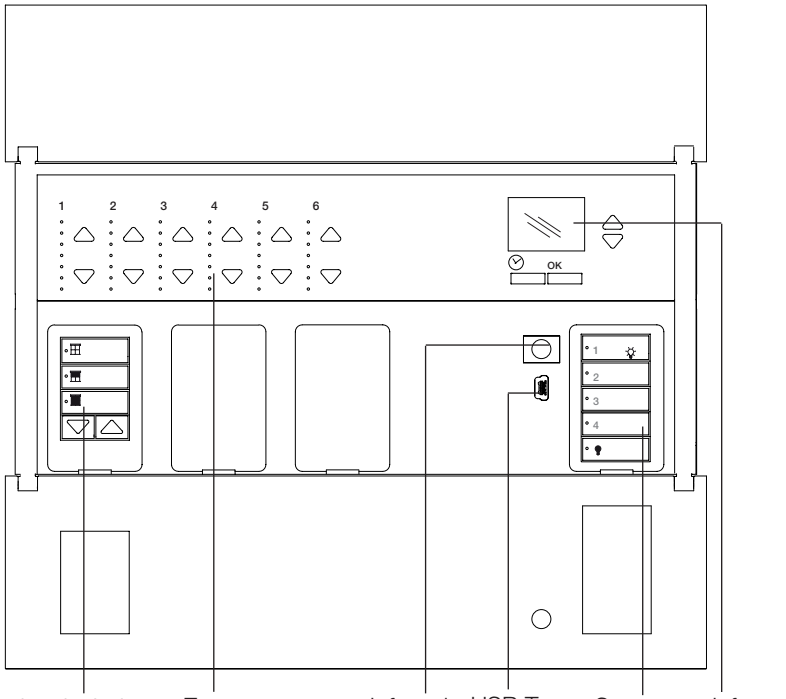
Example of Mixed Wired/*GRAFIK Eye*-centric Wireless System



Job Name:	Model Numbers:
Job Number:	



Note: Symbol-based Engraving (-SGN) shown.



Features

- Lutron's proprietary Clear Connect™ RF technology. Operates in 868 MHz band.
- 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 window treatment 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 window treatment 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, motorised window treatments, wallstations, and integration interfaces.
- Compatible with all Lutron QS system components.
- Wireless communication for seamless integration with a variety of Lutron wireless products and systems, including Radio PowrSavr™ occupancy and vacancy sensors, Sivoia® QS wireless window treatments, Pico™ wireless control, and other *GRAFIK Eye* QS wireless products.
- Backlit buttons with engraving make unit easy to locate and operate.
- Available in a variety of colours and finishes.

Job Name:	Model Numbers:
Job Number:	

Specifications

Input Power

- 230 V~ 50 Hz.

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)

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

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

Key Design Features

- RF meets IEC 801-2.
- 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 automatically restores lighting to the scene selected prior to power interruption, and stores timeclock and scene programming.
- Faceplate is hinged at the top and bottom, and stays open at 180° for ease of access.

Environment

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

Listings

- CE.
- Certified for IEC/EN compliance.

Scene and Window Treatment 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.

Preset Light and Window Treatment Control

- 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.
- Up to 3 columns of window treatment control.
- Open, preset, close, and raise/lower window treatment buttons. Each window treatment column can be programmed to operate one window treatment or a group of window treatments.

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 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 window treatment labels.

Job Name:	Model Numbers:
Job Number:	

Specifications

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.
- Astronomic times are programmable by integral city database or by entering latitude and longitude. Times automatically adjust throughout the year based on location.
- Automatically adjusts for Daylight Saving Time (DST), adjusted for the new dates; DST is programmable.
- Afterhours feature allows occupants to temporarily override timeclock events.

System Communications and Capacities

- Low-voltage type PELV (Class 2: USA) wiring connects control units, wallstations, motorised window treatments, and control interfaces.
- A QS system can have up to 100 devices and 100 zones (see System Limits table).
- A QS system can have up to 30 wireless devices.

Infrared

- Infrared (IR) receiver allows infrared transmitters to select 8 scenes, raise/lower lighting zones, or raise/lower window treatments.
- 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.

Accessory Controls and Devices

- Wired *SeeTouch* QS keypads can be added to the control link.
- Each *GRAFIK Eye* QS can power up to 3 wired *SeeTouch* QS controls.

Accessory Controls: Pico® Wireless Control (QSR8P or MRF2 models)

- The *Pico* Wireless Control is battery powered. It can control *GRAFIK Eye* QS wireless control units within a 30-foot range. It provides the following features:
  - Control of one or more zones on the *GRAFIK Eye* QS Wireless: turns zone(s) on or off, raises/lowers zone(s), and goes to user-defined preset level
  - Scene control: the *Pico* can access scene 1, scene 16, and Off on the *GRAFIK Eye* QS, and can raise and lower lighting levels

Accessory Controls: QS Sensor Module (QSM3)

- The QS Sensor Module provides a means to link wired or wireless occupancy and daylight sensors to a *GRAFIK Eye* QS via the wired QS link.
  - Occupancy sensors wired (or wirelessly linked) to a QS Sensor Module can be used by one or more *GRAFIK Eye* QS control units on the wired link.
  - Daylight sensors wired (or wirelessly linked) to a QS Sensor Module can be used by one or more *GRAFIK Eye* QS control units on the wired link.
  - *Pico* wireless controls **cannot** be used with the *GRAFIK Eye* QS through the QS Sensor Module. For operation with the *GRAFIK Eye* QS Wireless, *Pico* wireless controls must belinked directly to the *GRAFIK Eye* QS.
  - Infrared sensors **cannot** be used with the *GRAFIK Eye* QS through the QS Sensor Module.

Other Accessory Controls and Devices

- *Energi Savr Node* (ESN)
- QSE-IO
- QSE-CI-DMX
- QSE-CI-NWK-E

Wireless RF Compatibility

- Lutron's proprietary Clear Connect™ RF Technology operates in the 868 MHz band
- Compatible with other Lutron wireless products/ systems, such as:
  - *Pico* (P/N QSR8P and QSRKP)
  - *Radio Powr Savr* occupancy/vacancy/daylight sensors (P/N LRF3-)
  - *Sivoia* QS wireless products
  - Other *GRAFIK Eye* QS wireless units (P/N QSGRK-)

Job Name:	Model Numbers:
Job Number:	

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
  - Wireless Radio Powr Savr™ occupancy or vacancy sensors (model numbers starting with LRF3)
  - Wired or wireless 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.

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:
  - Wireless *Radio Powr Savr* (model numbers starting with LRF3)
  - Wired or wireless 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.

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⎓.
- 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.

Job Name:	Model Numbers:
Job Number:	

Specifications

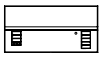
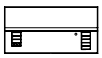
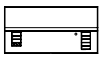
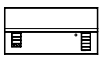
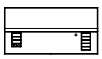
Capacities		
Zones	Unit Capacity (watts)	Zone Capacity Capacity (watts)
3	1 500	500
4	2 000	500
6	2 300	500

Load Type Notes

- For applications with load wattages exceeding the specified capacities, please refer to specifications for Lutron power modules (NGRX-PB-CE; ELVI-1000-CE).
- Not all loads must be connected; however, connected zones must have a minimum load of 40 W.
- Maximum total lighting load for a magnetic low-voltage zone is 500 VA / 400 W.
- No zone may be loaded with more than 500 W.

System Limits

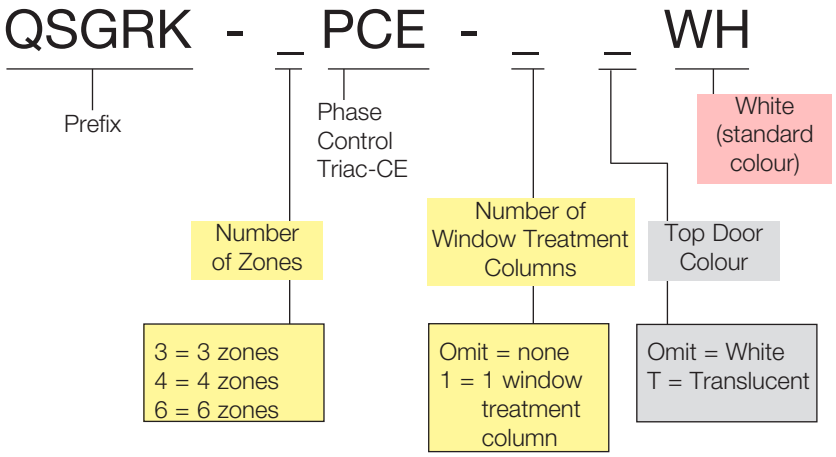
- The QS wired communication link is limited to 100 devices (wired or wireless) or 100 zones. Please note the zone count and power draw unit information in the following table.

	QS Device	Zone Count	Power Draw Units (supplied)	Power Draw Units (consumed)
	3-zone *GRAFIK Eye* QS	3	3	0
	4-zone *GRAFIK Eye* QS	4	3	0
	6-zone *GRAFIK Eye* QS	6	3	0
	8-zone *GRAFIK Eye* QS	8	3	0
	16-zone *GRAFIK Eye* QS	16	3	0
	*seeTouch* QS	0	0	1
	International *seeTouch* QS	0	0	1
	*Sivoia* QS	1	0	(Refer to Spec. Submittal)
	Contact closure interface	2	0	3
	Network interface	0	0	2
	DMX interface	0	0	2
	QS smart power panel	0	(Refer to Spec. Submittal)	0
	QS link power supply	0	8	0

Job Name:	Model Numbers:
Job Number:	

GRAFIK Eye QS Wireless
Standard Model Numbers

See following pages for Ordering Custom (Non-Standard) Model Numbers
See Standard Colour Combinations page for faceplate, stripe, and button colours



Example:
QSGRK-6PCE-1TWH
6-zone standard white unit with 1 window treatment column and translucent top door.

Unit will ship unengraved with engraving certificate that customer can redeem at no charge.

Available Standard Model Numbers

3 Zones	4 Zones	6 Zones
QSGRK-3PCE-WH	QSGRK-4PCE-WH	QSGRK-6PCE-WH
QSGRK-3PCE-TWH	QSGRK-4PCE-TWH	QSGRK-6PCE-TWH
QSGRK-3PCE-1WH	QSGRK-4PCE-1WH	QSGRK-6PCE-1WH
QSGRK-3PCE-1TWH	QSGRK-4PCE-1TWH	QSGRK-6PCE-1TWH

Important Note:

For any non-standard units, you must order **BOTH** a base unit and a Faceplate Kit. Please see the Custom Ordering Information on the following pages.

Job Name:	Model Numbers:
Job Number:	

GRAFIK Eye® QS Wireless
Custom Colour Options and Model Numbers
You must order a Base Unit and a Faceplate Kit

See Standard Colour Combinations page for faceplate, stripe, and button colours

Base Unit

QSGRK - _ PCE

- QSGRK — Prefix
- _ — Number of Zones
  - 3 = 3 zones
  - 4 = 4 zones
  - 6 = 6 zones
- PCE — Phase Control Triac-CE

Example:

QSGRK-6PCE
6-zone base unit
and
QSGFP-2IV-SGN
Ivory faceplate kit with two window treatment columns and symbol-based engraving

Faceplate Kit

(includes coordinating stripe and buttons; see Standard Colour Combinations page)

QSGFP - - -

- QSGFP — Faceplate Prefix
- Number of Window Treatment Columns
  - Omit = none
  - 1 = 1 column
  - 2 = 2 columns
  - 3 = 3 columns
- Top Door Colour
  - Omit = same as unit
  - T = Translucent
- Colour/Finish — see Faceplate Custom Colour/Finish Codes
- Keypad Engraving Code — see Keypad Engraving Codes

Faceplate Custom Colour/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

Anodised Aluminum Finishes

Clear	CLA
Black	BLA
Brass	BRA

Satin Colour Matte Finishes

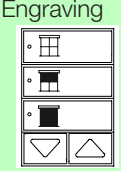
Snow	SW
Biscuit	BI
Eggshell	ES
Taupe	TP
Midnight	MN
Limestone	LS
Stone	ST
Desert Stone	DS
Terracotta	TC
Hot	HT
Goldstone	GS
Palladium	PD
Plum	PL
Turquoise	TQ
Bluestone	BG
Sea Glass	SG
Greenbrier	GB
Sienna	SI
Merlot	MR
Mocha Stone	MS

Keypad Engraving Codes

Omit = Unengraved
Ships with engraving certificate that customer can redeem at no charge

SGN = Symbol-based Engraving

Lighting keypad


Window treatment 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 Wireless
Custom Options and Model Numbers

See previous pages for Standard and Other Custom Model Numbers
See Standard Colour Combinations page for faceplate, stripe, and button colours

Custom Button Kit

QSGB - 5B - WH -

- QSGB — Custom Button Kit Prefix
- 5B — Button Configuration
- WH — Button Colour/Finish
- (Keypad Engraving Code)

Button Configuration

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

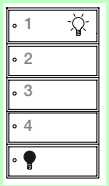
Button Kit Custom Colour/Finish Codes

Architectural Matte Finishes		Satin Colour Matte Finishes	
White	WH	Snow	SW
Ivory	IV	Biscuit	BI
Beige	BE	Eggshell	ES
Gray	GR	Taupe	TP
Brown	BR		
Black	BL		
Almond	AL		
Light Almond	LA		

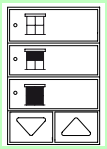
Keypad Engraving Codes

Omit = Unengraved
Ships with engraving certificate that customer can redeem at no charge

SGN = Symbol-based Engraving



Lighting keypad


Window treatment 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

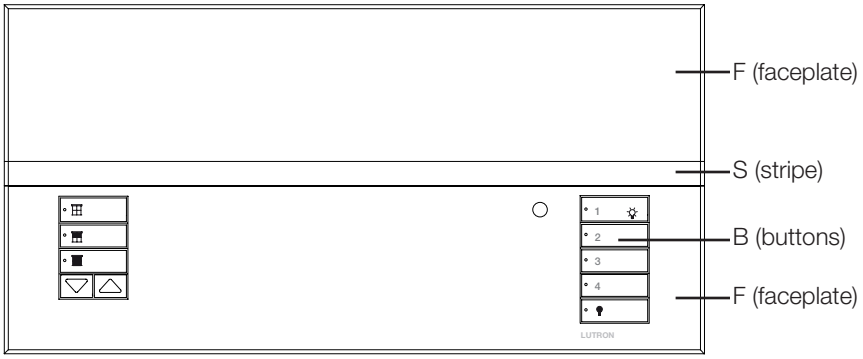
QSGS - WH

- QSGS — Stripe Kit Prefix
- WH — Stripe Colour/Finish

Stripe Custom Colour/Finish Codes
Same as Faceplate colours on previous page

Job Name:	Model Numbers:
Job Number:	

GRAFIK Eye QS Wireless Standard Colour Combinations
See previous pages for Standard and Custom Model Numbers



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

Example:
If you order QSGRK-4PCE-1WH, your *GRAFIK Eye* QS with 4 lighting zones and 1 window treatment column will come with a white faceplate (both top and bottom), gray stripe, and white buttons.

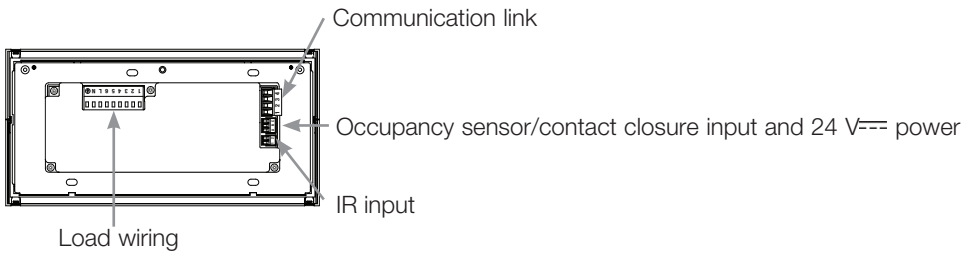
Suffix	Faceplate (F)	Stripe (S)	Button (B)
Architectural Matte			
WH	White	Gray	White
IV	Ivory	Beige	Ivory
BE	Beige	Ivory	Beige
GR	Gray	Black	Gray
BR	Brown	Black	Brown
BL	Black	Gray	Black
AL	Almond	Light Almond	Almond
LA	Light Almond	Almond	Light Almond
Architectural Metal			
BB	Bright Brass	Black	Black
BC	Bright Chrome	Black	Black
BN	Bright Nickel	Black	Black
SB	Satin Brass	Black	Black
SC	Satin Chrome	Black	Black
SN	Satin Nickel	Black	Black
QB	Antique Brass	Black	Black
QZ	Antique Bronze	Black	Black
Anodised			
CLA	Clear	Black	Black
BLA	Black	Black	Black
BRA	Brass	Black	Black
International Wallbox			
AR	Argentum	Black	Black
MC	Mica	Gray	Black
AW	Arctic White	Gray	White

Suffix	Faceplate (F)	Stripe (S)	Button (B)
Satin Matte			
MN	Midnight	Gray	Black
TP	Taupe	Gray	Taupe
SW	Snow	Gray	Snow
ES	Eggshell	Beige	Eggshell
BI	Biscuit	Eggshell	Biscuit
LS	Limestone	Gray	Gray
ST	Stone	Gray	Gray
DS	Desert Stone	Taupe	Taupe
TC	Terracotta	Taupe	Taupe
BG	Bluestone	Gray	Gray
HT	Hot	Taupe	Taupe
MR	Merlot	Taupe	Taupe
SI	Sienna	Brown	Brown
GB	Greenbrier	Gray	Gray
SG	Sea Glass	Gray	Gray
MS	Mocha Stone	Taupe	Taupe
GS	Goldstone	Ivory	Ivory
PD	Palladium	Gray	Gray
PL	Plum	Taupe	Taupe
TQ	Turquoise	Gray	Gray

Job Name:	Model Numbers:
Job Number:	

Wiring Diagrams

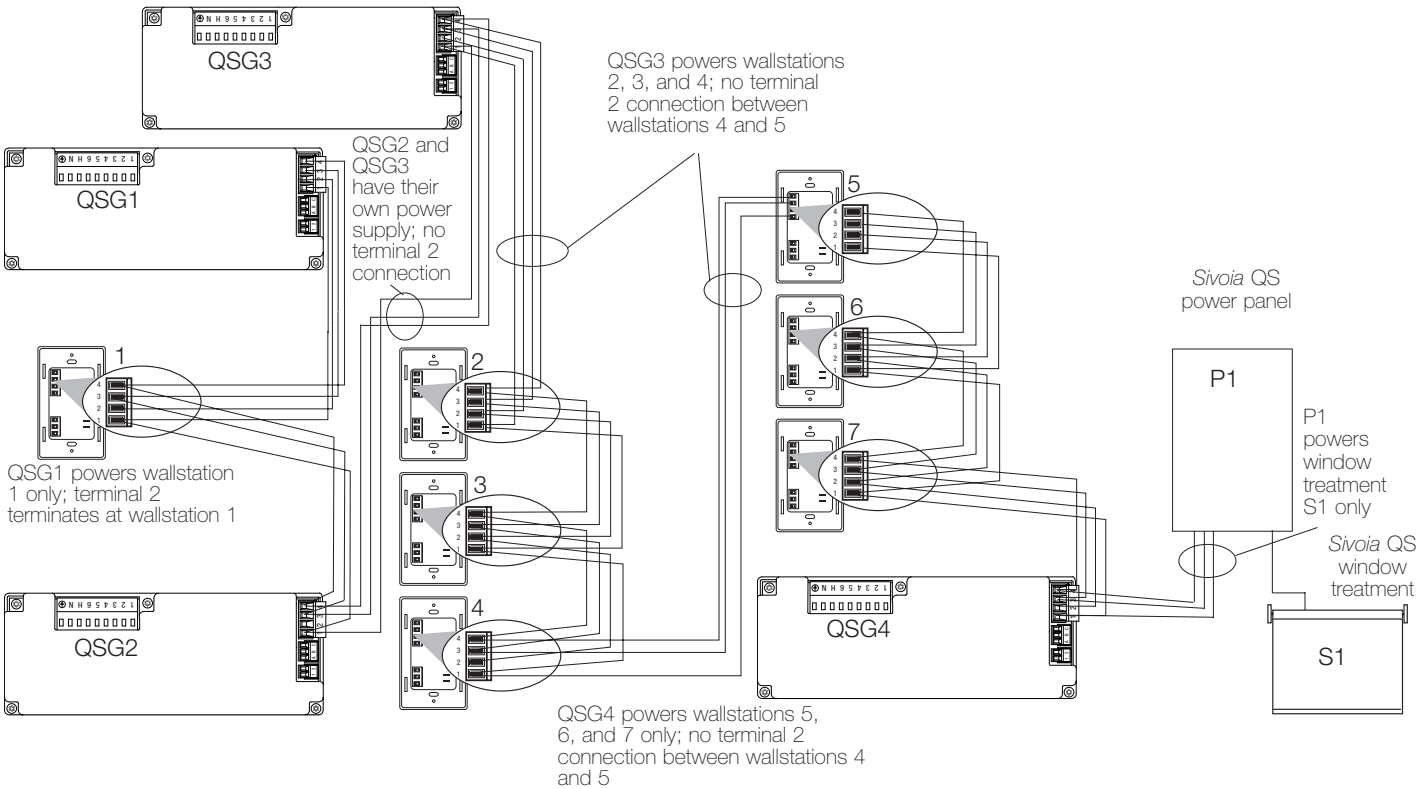
Terminations



PELV (Class 2: USA) QS System Low-Voltage Terminal Connections

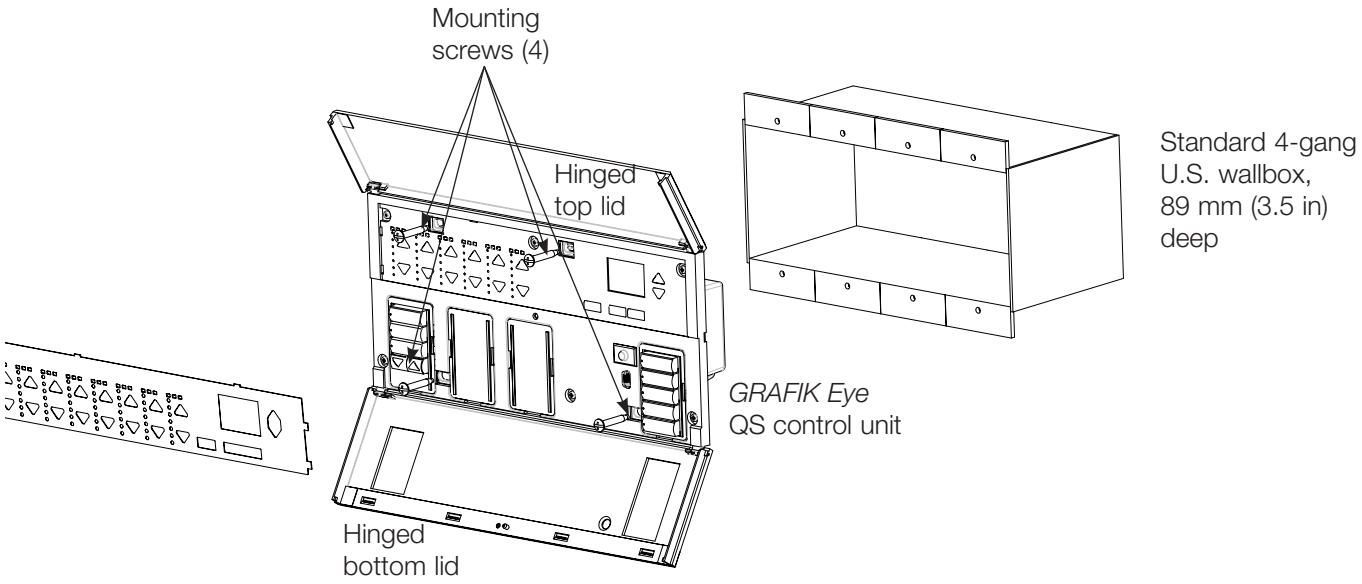
- Each PELV (Class 2: USA) terminal accepts up to two 1.0 mm² (18 AWG) wires.
- Connect the terminal 1, 3, and 4 connections to all control units, wallstations, and control interfaces.
- Each control unit has its own power supply. Terminate the terminal 2 connection (24 V⎓ power) so that each control unit supplies power to a maximum of three wallstations. Each wallstation should receive power from only one control unit.
- Total length of control link must not exceed 610 m (2,000 ft).
- Do not allow PELV (Class 2: USA) wires to contact line/mains wires.

Control units shown in rear view

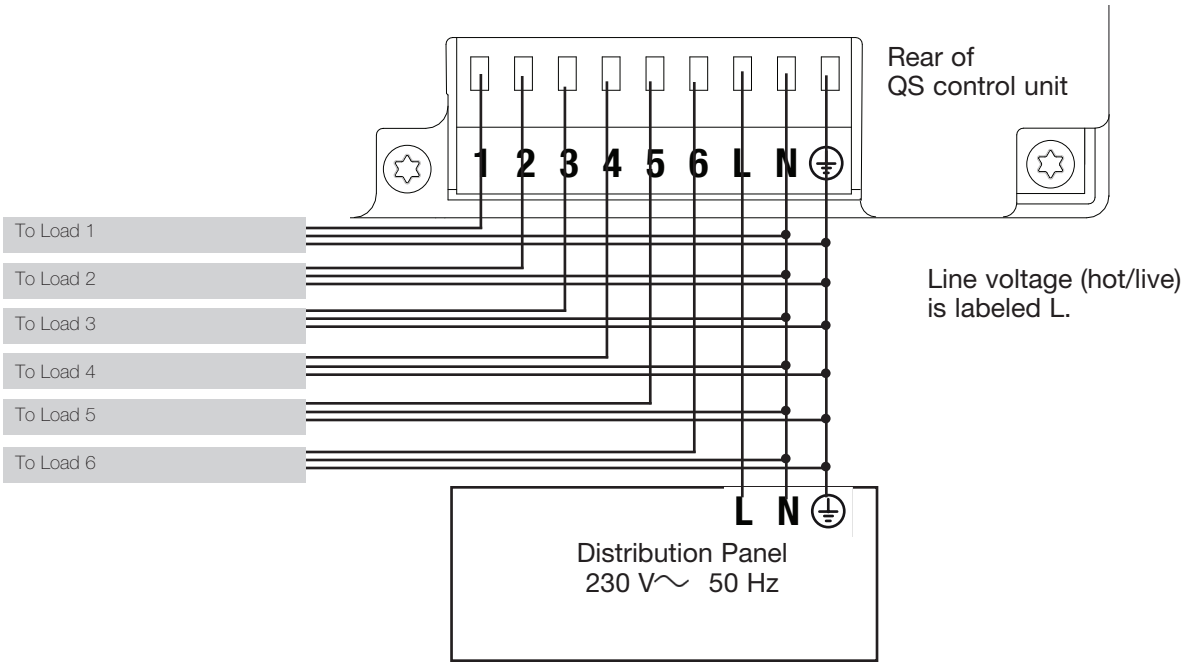


Job Name:	Model Numbers:
Job Number:	

Mounting



Line Voltage Wiring



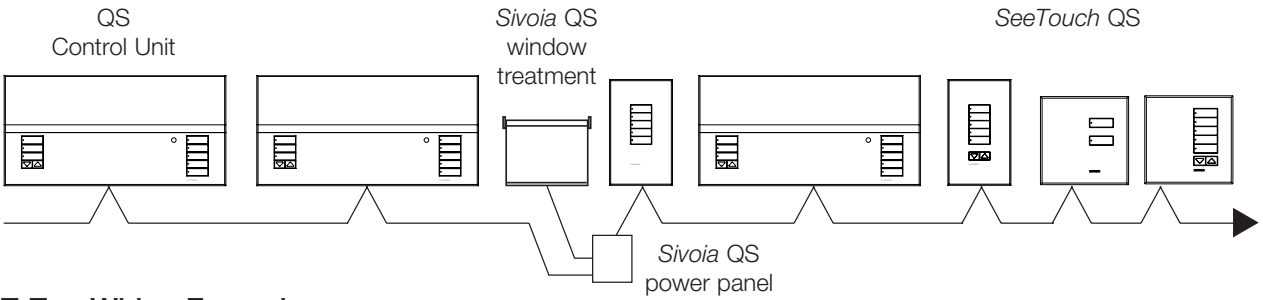
- Pull power wiring from distribution panel and to light fixtures.
- Each line voltage terminal can accept one 2.5 mm^2 (12 AWG) wire.
- Consult Lutron for non-dim relay wiring and/or load side emergency transfer wiring.

Job Name:	Model Numbers:
Job Number:	

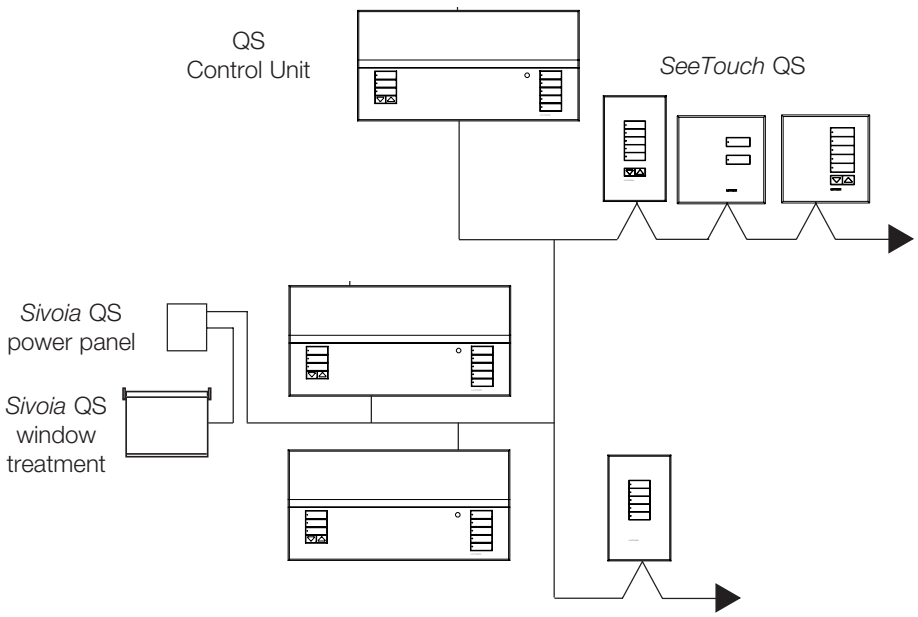
PELV (Class 2: USA) QS System Low-Voltage Wiring

- System communication uses low-voltage wiring.
- Wiring can be daisy-chained or T-tapped.
- Wiring must be run separately from line/mains voltage.
- PELV (Class 2: USA) wiring link requires:
  Two 1.0 mm² (18 AWG) conductors for control power.
  One twisted, shielded pair of 0.5 mm² (22 AWG) for data link.
  Available from Lutron, P/N GRX-CBL-346S; check compatibility in your area.
- Total length of control link must not exceed 610 m (2,000 ft).

Daisy-Chain Wiring Example



T-Tap Wiring Example



Job Name:	Model Numbers:
Job Number:	