

QS DMX Control Interface

Installation and Operation Instructions
Occupant Copy Please Read

QSE-CI-DMX
PELV (Class 2: USA) Device 24 V $\overline{\text{---}}$ 60 mA

The QSE-CI-DMX control interface allows zones on a GRAFIK Eye[®] QS Wireless to control DMX512-controlled devices. Any zone on the *GRAFIK Eye* QS Wireless can be mapped to either a single DMX512 channel or to three separate DMX512 channels, for RGB/CMY color-control applications.

Key Features

- Map any zone on a *GRAFIK Eye* QS Wireless control unit to any single DMX512 channel
- Map any zone on a *GRAFIK Eye* QS Wireless control unit simultaneously to three DMX512 channels for RGB/CMY color-control
- Integral RGB/CMY color lookup table that maps *GRAFIK Eye* QS zone intensities to RGB/CMY values
- RGB/CMY table can be customized by using the Lutron QS Color Configuration Tool (PC application available on the CD packaged with the QSE-CI-DMX, and on www.lutron.com/qs)

QS System

Lutron QS System components communicate over the highly flexible QS link. There are a few rules to keep in mind when designing and installing QS system components:

- Up to 100 devices on one QS link
- Up to 100 zones on one QS link
- Up to 2000 ft (610 m) wiring length
- Only one QSE-CI-DMX per QS link
 - Counts as one (1) device
 - Counts as zero (0) zones
- Contact Lutron for compatibility with Quantum[®]

Requirements

The QSE-CI-DMX requires the following:

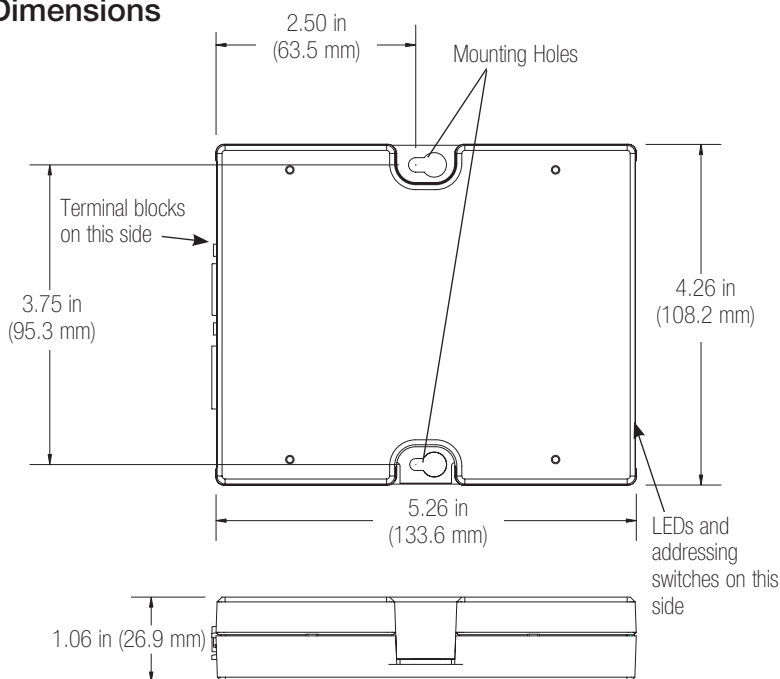
- At least one *GRAFIK Eye* QS Wireless control unit wired to the QSE-CI-DMX through the QS communication link
- A QS Link Power Supply, such as the QSPS-P1-1-50, is required if the *GRAFIK Eye* QS Wireless is powering any other QS link devices drawing a total of two (2) or more power draw units
- DMX512 link terminators at both ends of the DMX512 link (available from Lutron, part number LT-1)
- QS Communication Link Wire (PELV, Class 2: USA)
 - Two 18 AWG (1.0 mm²) conductors for control power
 - One twisted, shielded pair of 22 AWG (1.0 mm²) for data link
 - Available from Lutron, part number GRX-CBL-346S; check compatibility in your area

Mounting

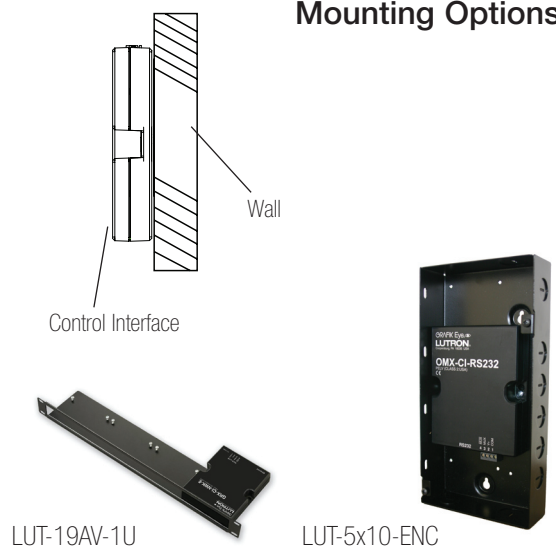
Choose a mounting method below. Mount the control interface in an accessible location.

- Wall Mounting.** Mount the control interface directly on a wall, as shown in the Mounting Diagram, using screws (not included). When mounting, provide sufficient space for connecting cables.
- Rack Mounting.** Place the interface in the LUT-19AV-1U AV rack using the screws provided with the interface. The LUT-19AV-1U will hold up to four units.
- Conduit Mounting.** If conduit is desired for wiring, the LUT-5x10-ENC can be used to mount one unit.

Dimensions



Mounting Options



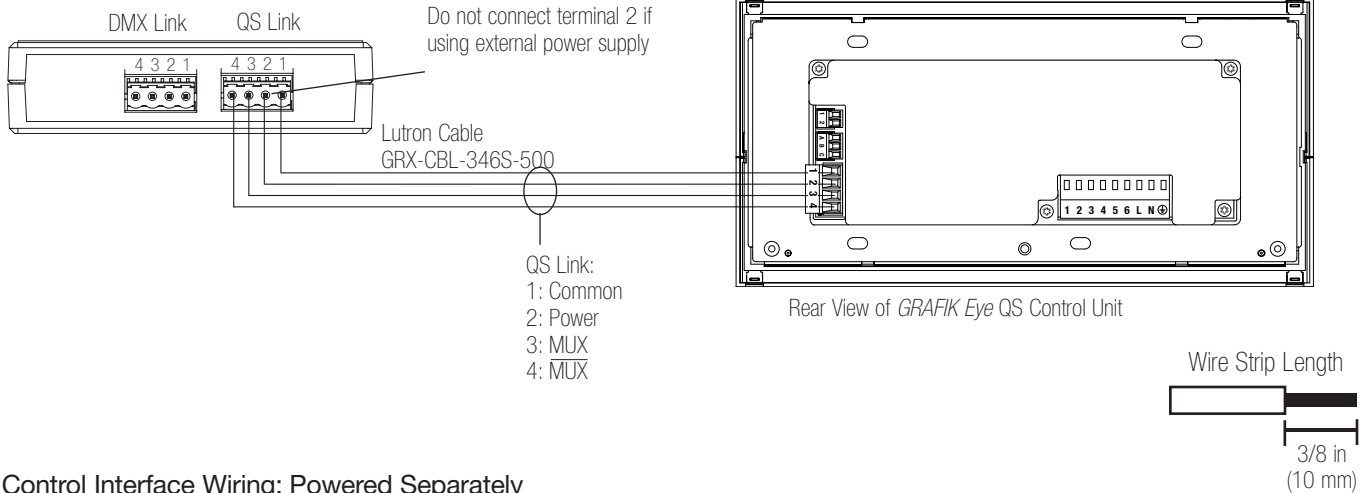
Control Interface Wiring

Power Options

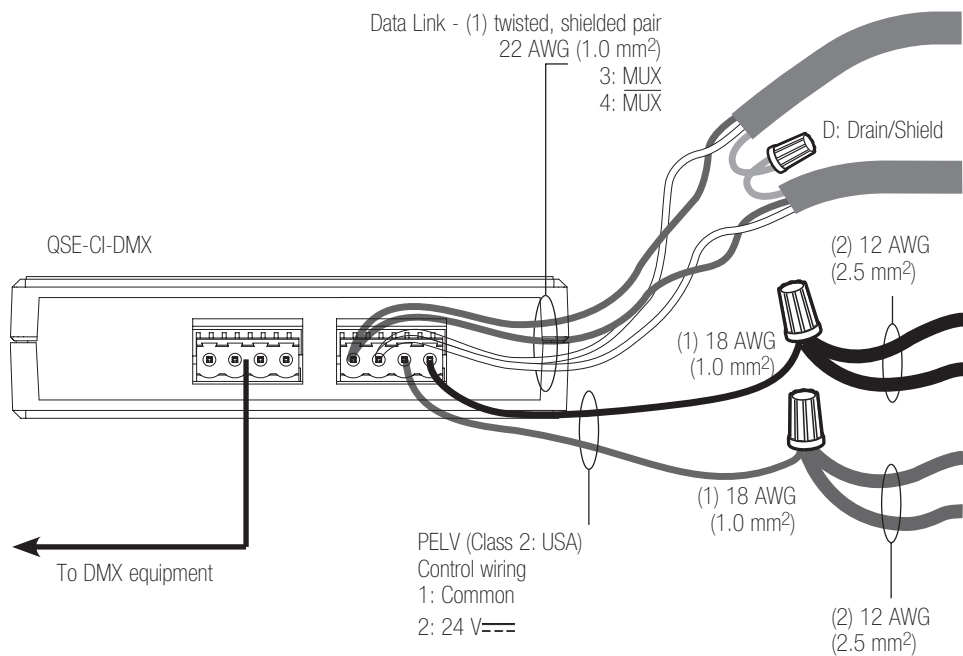
- The QSE-CI-DMX draws two (2) power draw units. A GRAFIK Eye® QS Wireless is capable of supplying up to three (3) power draw units, and can be used to supply power to the QSE-CI-DMX if the *GRAFIK Eye QS Wireless* is not powering any other QS link devices drawing a total of two (2) or more power draw units.
- Another option is to power the QSE-CI-DMX from a QS Link power supply (QSPS-P1-1-50, QSPS-P2-1-50, or QSPS-P3-1-50) or a QS shade panel power supply (QSPS-P2-10-60 for 230 V~, or QSPS-P1-10-60 for 120 V~). Please see www.lutron.com/qs for details.

Powered by GRAFIK Eye® QS Control Unit

- Each PELV (Class 2: USA) terminal accepts up to two 18 AWG (1.0 mm²) wires.
- Connect the terminal 1, 3, and 4 connections to all control units, wallstations, and control interfaces. See Power Options for pin 2 connectivity.
- Total length of control link must not exceed 2000 ft. (610 m).
- Do not allow PELV (Class 2: USA) wires to contact line/ mains wires.
- Common (terminal 1) and 24 V_{DC} (terminal 2): Two 18 AWG (1.0 mm²) conductors. Ensure that the terminal 2 connection is wired correctly. Refer to *GRAFIK Eye QS Specification Submittal* for more details.
- Data link (terminals 3 and 4): One shielded, twisted pair 22 AWG (1.0 mm²).



Control Interface Wiring: Powered Separately



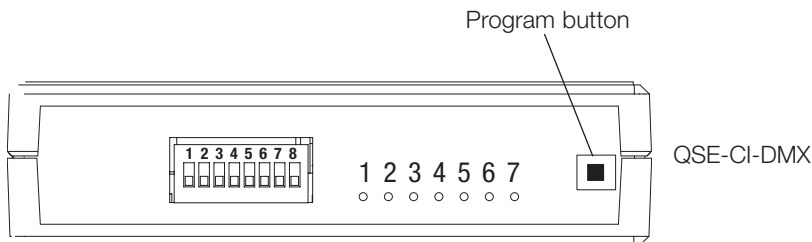
DMX-512 Link Wiring

Connect the DMX link terminals on the QSE-CI-DMX interface to input terminals on DMX512-controlled equipment.

- Each terminal on the QSE-CI-DMX accepts two 18 AWG (1.0 mm²) wires.
- Link must be 1000 feet (305 m) or less.
- Link must begin and end with link terminators (available from Lutron; part number LT-1).

Pin on QSE-CI-DMX Terminal	Connection to DMX Equipment
1: DMX512 system COMMON	Pin 1 Note: Do NOT connect to COMMON on <i>GRAFIK Eye QS</i> control unit or processor
NC	Not connected
3: DMX512 system DATA +	Pin 3 on DMX equipment
2: DMX512 system DATA -	Pin 2 on DMX equipment

Functionality of LEDs and Configuration Switches



Configuration Switches

- 1: Unused
- 2: Up = 44 packets per second (DMX refreshes 44 times per second)
Down = 22 packets per second (DMX refreshes 22 times per second; for older/slower DMX devices)
- 3: Unused
- 4: Unused
- 5: Unused
- 6: Up = Override to 0 intensity on all DMX channels
Down = Normal operation
- 7: Up = Override to Minimum levels on all DMX channels
Down = Normal operation
- 8: Up = Override to Maximum levels on all DMX channels
Down = Normal operation

- LED 1: Power
- LED 2: Unused
- LED 3: Status
- LED 4: DMX Link Tx
- LED 5: DMX Link Rx
- LED 6: QS Link Tx
- LED 7: QS Link Rx

Switch Logic



Switch up

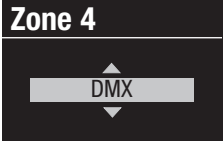


Switch down

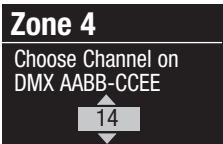
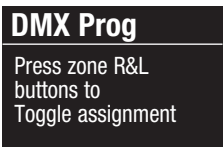
Programming

Assigning a Single DMX Channel to a GRAFIK Eye® QS Zone

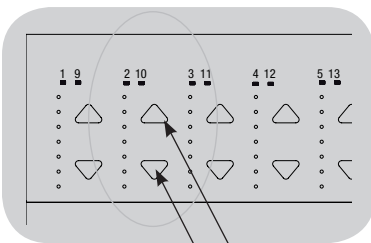
Most DMX fixtures use single-channel assignment. If you are using single-channel DMX, follow the instructions below. If your DMX fixture has 3 channels (RGB or CMY), refer to the instructions at right for 3-channel DMX assignment.



1. Enter programming mode on the *GRAFIK Eye QS*. Choose “Zone Setup” then “Load Type” from the Main Menu. For the zones you wish to assign to DMX channels, change the load type to DMX.
2. Exit programming mode on the *GRAFIK Eye QS*.
3. Enter programming mode on the QSE-CI-DMX: Press and hold the programming button for 3 seconds. The yellow status LED will blink rapidly.



4. The *GRAFIK Eye QS* will display the selected zone and an unassigned DMX channel. Use the master buttons on the *GRAFIK Eye QS* to choose a DMX channel (from 1 to 512) for this zone.

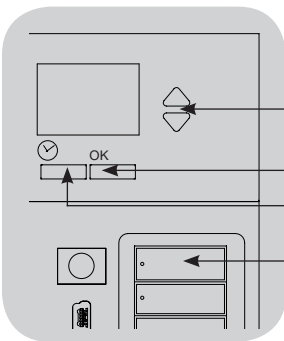


GRAFIK Eye QS control unit
Zone LEDs

Zone LEDs full on and flash
(zone assigned to QSE-CI-DMX)

Zone LEDs Off
(zone **un**assigned to QSE-CI-DMX)

Press the Zone raise and Zone lower buttons simultaneously to assign a DMX channel



Master buttons
OK button
Cancel
Scene 1 button

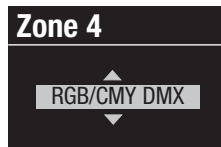
Press cancel to go back to step 4. Press the Scene 1 button on the *GRAFIK Eye QS* to cause the currently selected DMX channel to flash. Press OK to assign the selected DMX channel to the selected zone and proceed.

Note: Do not use the Flash feature with DMX devices containing moving parts (shade motors, motorized light fixtures, smoke-producing machines, etc.) to avoid damaging those devices or causing unexpected motion.

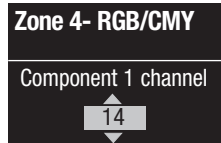
If the selected channel is already assigned to a zone, the *GRAFIK Eye QS* will prompt you to confirm replacing the channel with the new selection. Press OK to confirm the replacement, or cancel to go back.

5. Repeat step 4 for each DMX zone.
6. Exit programming mode: Press and hold the programming button on the QSE-CI-DMX for 3 seconds. The yellow status LED will blink once per second.

Assigning RGB/CMY DMX Channels (3-Channel DMX) to GRAFIK Eye® QS Zones



1. Enter programming mode on the *GRAFIK Eye QS*. Choose “Zone Setup” then “Load Type” from the Main Menu. For the zones you wish to assign to RGB/CMY channels, change the load type to RGB/CMY DMX.
2. Exit programming mode on the *GRAFIK Eye QS*.
3. Enter programming mode on the QSE-CI-DMX: Press and hold the programming button for 3 seconds. The yellow status LED will blink rapidly.



4. The *GRAFIK Eye QS* will display the selected zone and an unassigned DMX channel. Use the master buttons on the *GRAFIK Eye QS* to choose a DMX component channel (from 1 to 512) for this zone. Press the Scene 1 button on the *GRAFIK Eye QS* to cause the currently selected DMX channel to flash. Press OK to assign the selected DMX channel to the selected zone and proceed. Repeat for all 3 channels. Press cancel to go back.

If the selected channel is already assigned to a zone, the *GRAFIK Eye QS* will prompt you to confirm replacing the channel with the new selection. Press OK to confirm the replacement, or cancel to go back.

5. Repeat step 4 for all the RGB DMX zones.
6. Exit programming mode: Press and hold the programming button on the QSE-CI-DMX for 3 seconds. The yellow status LED will blink once per second.

To unassign DMX channels from a *GRAFIK Eye QS*:

1. Enter programming mode on the QSE-CI-DMX: Press and hold the programming button for 3 seconds. The yellow status LED will blink rapidly.
2. The LEDs of the zones assigned to DMX channels will be flashing full on. To toggle assignment, press the desired zone's raise and lower buttons together.

Zone 4

Channels 1,2,3
on DMX AAB-CCDD

Unassign?

3. Press "OK" to confirm, or "Cancel" to cancel the operation.
4. Exit programming mode: Press and hold the programming button on the QSE-CI-DMX for 3 seconds. The yellow status LED will blink once per second.

Note: The RGB/CMY table can be edited to map a zone intensity to a specific RGB/CMY color using the color configuration tool for the QSE-CI-DMX (available at www.lutron.com/qs).

Display Type Setup

There are two display types to choose from: "% display", which displays light intensity as a percentage, and "0-255 display", which displays intensity as a numeric value. For RGB DMX zones, it may be desirable to select "0-255 display" in order to step through each entry in the RGB/CMY table. This option is available only after DMX channel assignment.

Display type

← Set zones

1. Enter programming mode on the *GRAFIK Eye QS*, and choose "Zone Setup" from the Main Menu. Select "Display type". The LEDs of the zones assigned to DMX channels will be flashing full on.
2. Use the zone raise/lower buttons to toggle between display types. Press "OK" to confirm. Repeat for all desired zones.
3. Exit programming mode.

Trim Setup

The high end and low end trim settings of a zone assigned to a DMX channel can be manually set as desired, but only for zones assigned to DMX channels. High and low end trim settings limit the maximum and minimum output of a dimming zone. Trim levels are set automatically when the load type is programmed.

Remote high end

← Set zones

1. Enter programming mode on the *GRAFIK Eye QS*, and choose "Zone Setup" from the Main Menu. Select "Remote high end" or "Remote low end". The LEDs of the zones assigned to DMX channels will show the high end or low end intensity.
2. Use the zone raise/lower buttons to set the desired trim levels. Repeat for all desired zones and trims. Press "OK" to confirm.
3. Exit programming mode.

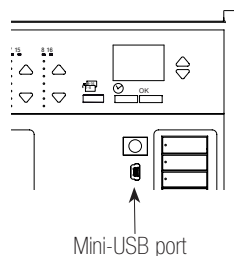
To enable/disable Master Raise/Lower from affecting RGB/CMY zones (disabled by default)

1. After assigning RGB/CMY zones to the *GRAFIK Eye QS*, enter programming mode on the *GRAFIK Eye QS* and choose "Zone Setup" from the Main Menu. Select "RGB/CMY config".
2. Use the Master Button to choose "Enabled" or "Disabled". Press "OK" to save.
3. Exit programming mode.

Color Programming Tool

The QSE-CI-DMX comes with a standard table of colors already loaded. Users can modify the table to achieve desired colors.

1. Install the program from the CD.
2. Create a new project, or use the provided default color table.
3. If you are creating a new project, you can enter individual color values in either RGB (red-green-blue) or CMY (cyan-magenta-yellow) format. Values can be entered in either decimal or hexadecimal format. Additionally, the interpolate function will fill in values automatically when you define the boundary values.
4. Use the "Test" feature on the title bar to view your edited color table.



5. Connect a mini-USB cable between your PC and the mini-USB port under the bottom hinged door of your *GRAFIK Eye QS* Wireless.
6. Use the "Transfer" command to either download your color table into the QSE-CI-DMX, or to extract a color table from a QSE-CI-DMX to your PC for further editing.

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One Year Limited Warranty**

For a period of one year from the date of purchase, and subject to the exclusions and restrictions described below, Lutron warrants each new unit to be free from manufacturing defects. Lutron will, at its option, either repair the defective unit or issue a credit equal to the purchase price of the defective unit to the Customer against the purchase price of comparable replacement part purchased from Lutron. Replacements for the unit provided by Lutron or, at its sole discretion, an approved vendor may be new, used, repaired, reconditioned, and/or made by a different manufacturer.

If the unit is commissioned by Lutron or a Lutron approved third party as part of a Lutron commissioned lighting control system, the term of this warranty will be extended, and any credits against the cost of replacement parts will be prorated, in accordance with the warranty issued with the commissioned system, except that the term of the unit's warranty term will be measured from the date of its commissioning.

EXCLUSIONS AND RESTRICTIONS

This Warranty does not cover, and Lutron and its suppliers are not responsible for:

1. Damage, malfunction or inoperability diagnosed by Lutron or a Lutron approved third party as caused by normal wear and tear, abuse, misuse, incorrect installation, neglect, accident, interference or environmental factors, such as (a) use of incorrect line voltages, fuses or circuit breakers; (b) failure to install, maintain and operate the unit pursuant to the operating instructions provided by Lutron and the applicable provisions of the National Electrical Code and of the Safety Standards of Underwriter's Laboratories; (c) use of incompatible devices or accessories; (d) improper or insufficient ventilation; (e) unauthorized repairs or adjustments; (f) vandalism; or (g) an act of God, such as fire, lightning, flooding, tornado, earthquake, hurricane or other problems beyond Lutron's control.
2. On-site labor costs to diagnose issues with, and to remove, repair, replace, adjust, reinstall and/or reprogram the unit or any of its components.
3. Equipment and parts external to the unit, including those sold or supplied by Lutron (which may be covered by a separate warranty).
4. The cost of repairing or replacing other property that is damaged when the unit does not work properly, even if the damage was caused by the unit.

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TO MAKE A WARRANTY CLAIM

To make a warranty claim, promptly notify Lutron within the warranty period described above by calling the Lutron Technical Support Center at (800) 523-9466. Lutron, in its sole discretion, will determine what action, if any, is required under this warranty. To better enable Lutron to address a warranty claim, have the unit's serial and model numbers available when making the call. If Lutron, in its sole discretion, determines that an on-site visit or other remedial action is necessary, Lutron may send a Lutron Services Co. representative or coordinate the dispatch of a representative from a Lutron approved vendor to Customer's site, and/or coordinate a warranty service call between Customer and a Lutron approved vendor.

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