QSE-CI-DMX Control Interface

Description

The QSE-CI-DMX operates either in a standalone QS system or a Quantum system. It performs different functions depending on the system in which it is operating.

QS Standalone System

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

Quantum System

The DMX channels (maximum of 32) are mapped to Quantum zones, and can be programmed as 1-channel lighting, 1-channel integration, or 3-channel RGB / CMY. If the QSE-CI-DMX is part of a Quantum system, GRAFIK Eye QS zones cannot be programmed to control DMX channels.

Features

- Map any zone on a GRAFIK Eye QS control unit or any Quantum zone to any single DMX512 channel
- Map any zone on a GRAFIK Eye QS control unit or any Quantum zone simultaneously to three DMX512 channels for RGB / CMY color-control
- Integral RGB / CMY lookup table that maps GRAFIK Eye QS zone intensities or Quantum zone intensities to RGB / CMY values (colors)
- 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 at www.lutron.com/qs), or within the Quantum Q-Design software

Job Name:	Model Numbers:
Job Number:	

Specifications

Regulatory Approvals
- RoHS Compliant

Power Requirements
- Low-voltage SELV/PELV/NEC® Class 2
- Operating Voltage: 24–36 V⎓ 65 mA

Environment
- 32 °F to 104 °F (0 °C to 40 °C).
- Relative humidity less than 90% non-condensing.
- Unit generates heat, maximum 8 BTU/hr.

System Capabilities/Limits

QS Link System Limits (for units controlled by a GRAFIK Eye QS control unit)
- 100 QS devices per QS link.
- 100 zones per QS link.

QS Link System Limits (for units controlled by a Quantum system)
- 99 QS devices per QS link.
- 512 switch legs per link (each DMX channel = 1 switch leg).
- 32 DMX channels per QSE-CI-DMX control interface.

QS Link Wiring Limits
- Total length of link must not exceed 2000 ft (610 m).
- Do not allow SELV/PELV/NEC® Class 2 wires to contact line/mains wires.

DMX512 Link System Limits
- Consult your DMX equipment installer.

DMX512 Link Wiring Limits
- Each terminal can accept up to two 18 AWG (1.0 mm^2) wires.
- Link must be 1000 ft (305 m) or less.
- DMX Link must begin and end with link terminators (available from Lutron; part number LT-1).
- Three pins on the DMX connector for connecting the QSE-CI-DMX to DMX512-controlled equipment.

Limitations
- In a Quantum system, only 32 DMX channels can be programmed per device. The 32 channels can be any of the 512 available addresses, so DMX combiners can be used if more than 32 DMX channels need to be controlled from a single DMX universe.
- Daylighting is not supported for DMX loads.
- Loadshedding is not supported for DMX loads.
- Nightlighting is not supported for DMX loads.
- 1-channel lighting can be raised/lowered, but 1-channel integration and RGB can not.
  Note: In a stand-alone system, raise/lower cycles through the RGB color table.

Requirements

The QSE-CI-DMX requires the following:
- At least one GRAFIK Eye QS control unit connected to the QSE-CI-DMX through the QS communication link, *or*
  A Quantum system
- QS Link power supply; either:
  - GRAFIK Eye QS control unit, as long as the GRAFIK Eye QS control unit is NOT powering any other QS link devices drawing a total of two (2) or more power draw units
  - QS Link power supply, such as the QSPS-P1-1-50 *or*
    A Quantum Light Management Hub
  Note: The QSE-CI-DMX consumes 2 power draw units on the QS link; see the **SELV/PELV/NEC® Class 2 QS Link Requirements and Wiring** section for more information
- DMX512 link terminators at both ends of the DMX512 link (available from Lutron, part number LT-1)
- QS Communication Link Wire (SELV/PELV/NEC® Class 2). See the **Wire Sizes** table.

Job Name:	Model Numbers:
Job Number:	

Example Application

The QSE-CI-DMX can be programmed so that any or all zones on a GRAFIK Eye QS control unit can control either 3 channels (e.g., RGB) or 1 channel (i.e., intensity of a single light). Raising or lowering a zone will change the color (for a 3-channel zone) or the intensity (for a 1-channel zone).

If, for example, you have an RGB LED fixture and a single stage light, you can configure your settings so that:
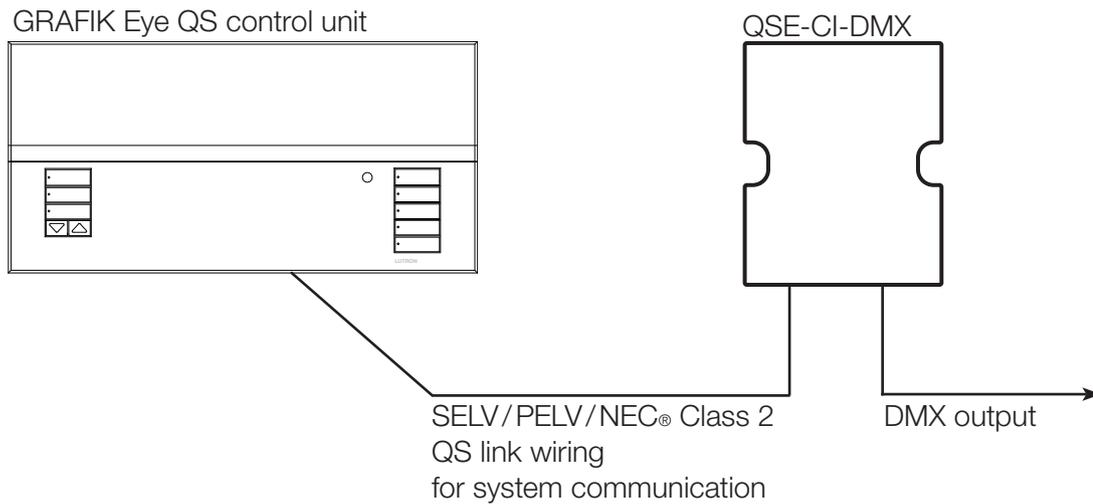• Channels 3, 4, and 5 correspond to the red, green, and blue channels on the RGB LED fixture
• Channel 7 corresponds to the stage light

You can then set up the GRAFIK Eye QS control unit so that:
• Zone 3's intensity = desired RGB fixture color
• Zone 6's intensity = desired stage light intensity

When you select a pre-programmed scene on the GRAFIK Eye QS control unit:
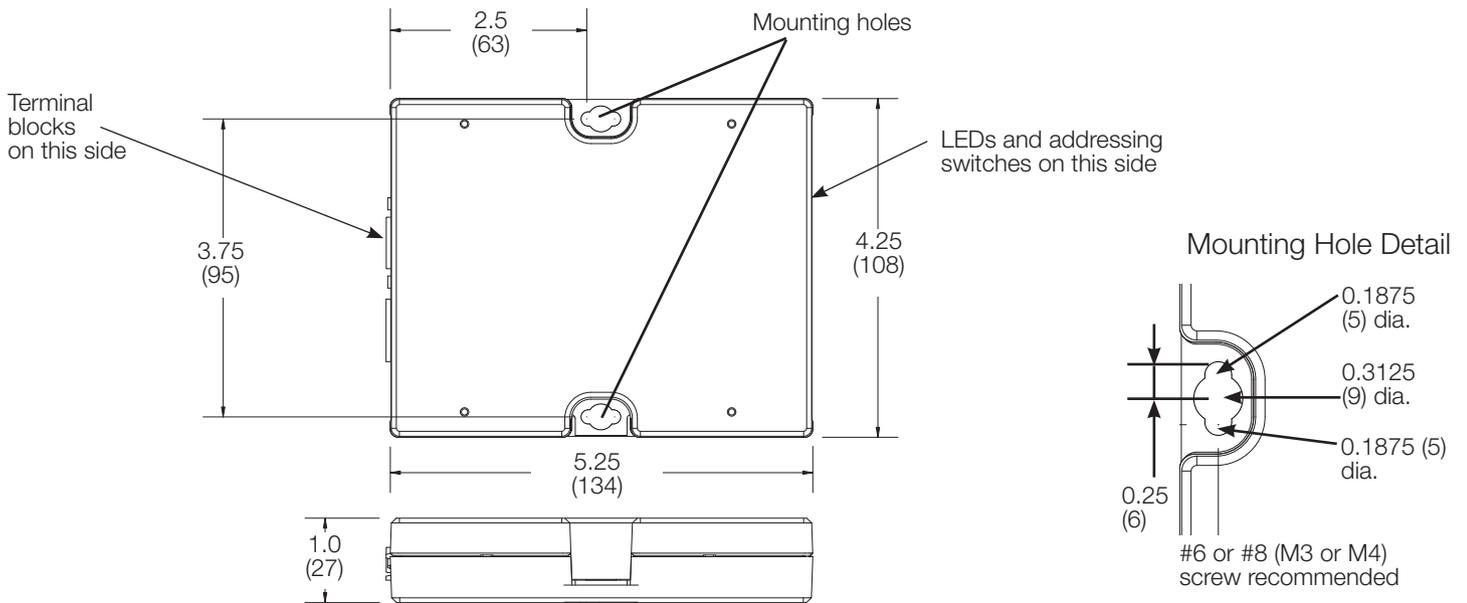• The QSE-CI-DMX converts the zone intensities for that scene into DMX512 channel settings.
• The RGB LED fixture will go to the color programmed for that scene, and the stage light will go to the desired intensity.

GRAFIK Eye QS control unit

QSE-CI-DMX

SELV/PELV/NEC® Class 2
QS link wiring
for system communication

DMX output

Job Name:	Model Numbers:
Job Number:	

Dimensions

Dimensions are in inches (mm)

2.5 (63)

Mounting holes

Terminal blocks on this side

LEDs and addressing switches on this side

3.75 (95)

4.25 (108)

5.25 (134)

1.0 (27)

Mounting Hole Detail

0.1875 (5) dia.

0.3125 (9) dia.

0.1875 (5) dia.

0.25 (6)

#6 or #8 (M3 or M4) screw recommended

Mounting Options

Mount where terminal blocks, switches, and LEDs are accessible. Strip 3/8 in (10 mm) of insulation from wires. Each data link terminal will accept up to two 18 AWG (1.0 mm^2) wires. Connect wiring as shown on the Wiring page. LED 1 is continuously lit (Power) and LED 7 blinks rapidly (Data Link RX) when the SELV/PELV/NEC® Class 2 Data Link is installed correctly. Choose from the following mounting methods:
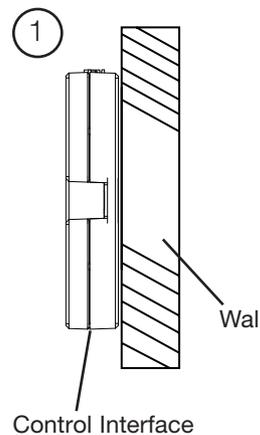
1. Direct Wall Mounting

Mount the control interface directly on a wall, as shown in Mounting Methods at right, using screws (not included). When mounting, provide sufficient space for connecting cables.

2. Rack Mounting

Place the unit in the LUT-19AV-1U AV rack using screws provided with the unit. The LUT-19AV-1U will hold up to four units.

3. Enclosed Wall Mounting

If conduit is desired for wiring, use the LUT-5x10-ENC to mount one unit.

Mounting Methods

1

Wall

Control Interface

2

LUT-19AV-1U

3

LUT-5x10-ENC

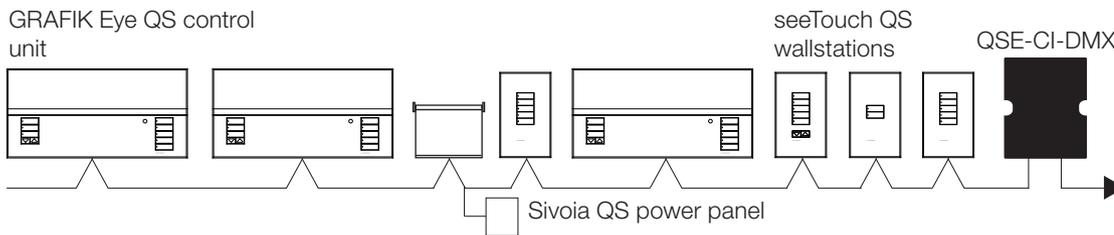| Job Name:	Model Numbers:
Job Number:	

369372e 5 02.05.18

SELV/PELV/NEC® Class 2 QS Link Requirements and Wiring

- System communication uses SELV/PELV/NEC® Class 2 wiring.
- Wiring can be daisy-chained or T-tapped (see below).
- Wiring must be run separately from line/mains voltage.
- Total length of control link must not exceed 2000 ft (610 m).
- Connect the terminal 1, 3, and 4 connections to all control units, wallstations, and control interfaces.
  See **Powering the QSE-CI-DMX** for pin 2 connectivity.
- The QSE-CI-DMX consumes 2 Power Draw Units (PDUs) on the QS link. For more information, see **Power Draw Units on the QS Link**, PN 369405, at www.lutron.com/qs.
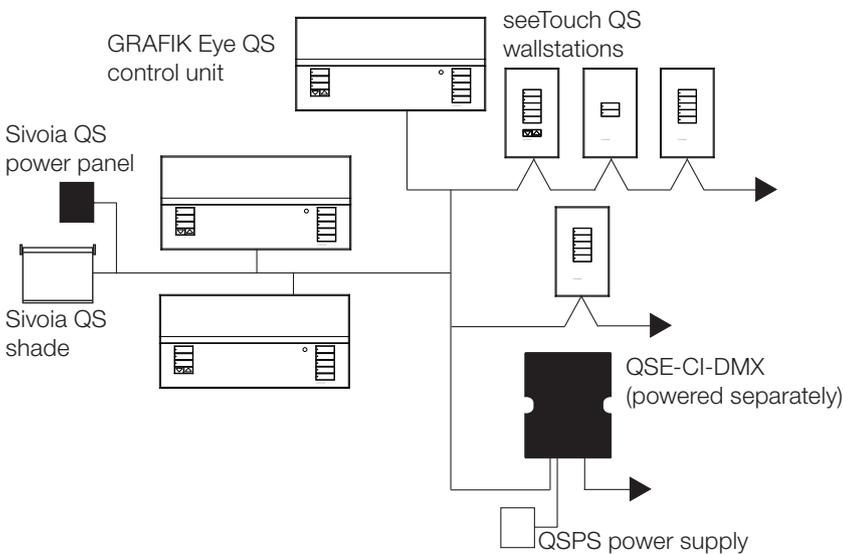
Wire Sizes (check compatibility in your area)

| QS Link Wiring Length	Wire Gauge	Lutron Cable Part Number
Less than 500 ft (153 m)	Power (terminals 1 and 2) 1 pair 18 AWG (1.0 mm²)	GRX-CBL-346S (non-plenum) GRX-PCBL-346S (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm²)	
500 to 2000 ft (153 to 610 m)	Power (terminals 1 and 2) 1 pair 12 AWG (4.0 mm²)	GRX-CBL-46L (non-plenum) GRX-PCBL-46L (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm²)	

Daisy-Chain Wiring Example

GRAFIK Eye QS control unit

seeTouch QS wallstations

QSE-CI-DMX

Sivoia QS power panel

T-Tap Wiring Example

GRAFIK Eye QS control unit

seeTouch QS wallstations

Sivoia QS power panel

Sivoia QS shade

QSE-CI-DMX (powered separately)

QSPS power supply

Job Name:	Model Numbers:
Job Number:	

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SELV / PELV / NEC® Class 2 Terminal Connections

Wire Sizes (check compatibility in your area**)**

QS Link Wiring Length	Wire Gauge	Lutron Cable Part Number
Less than 500 ft (153 m)	Power (terminals 1 and 2) 1 pair 18 AWG (1.0 mm²)	GRX-CBL-346S (non-plenum) GRX-PCBL-346S (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm²)	
500 to 2000 ft (153 to 610 m)	Power (terminals 1 and 2) 1 pair 12 AWG (4.0 mm²)	GRX-CBL-46L (non-plenum) GRX-PCBL-46L (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm²)	

Connect Drain/Shield as shown. Do not connect to Ground (Earth) or Wallstation/Control Interfaces. Connect the bare drain wires and cut off the outside shield.

Data Link: (1) shielded, twisted pair 22 AWG (0.5 mm²)
4: MUX
3: MUX
D: Drain / Shield

QSE-CI-DMX

(2) 12 AWG (4.0 mm²)
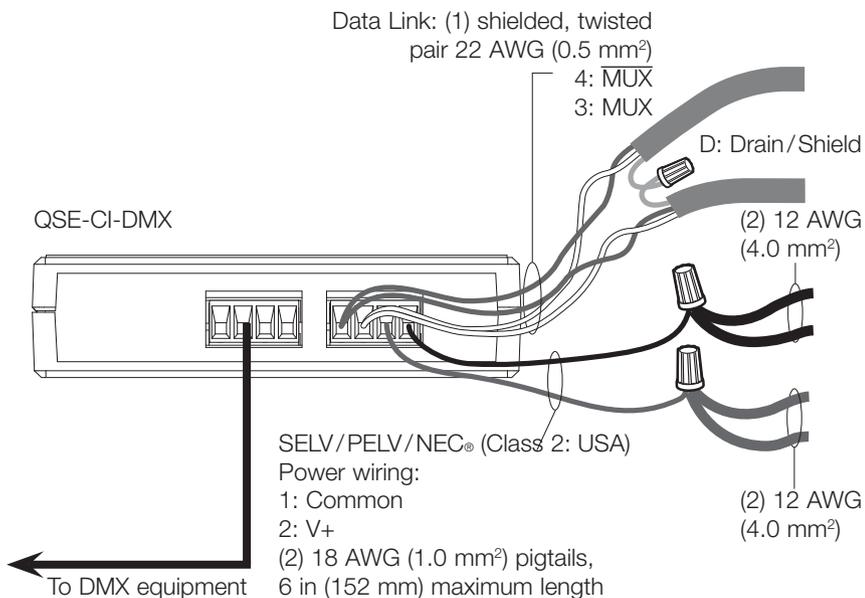
Note: Do not connect Drain / Shield to Ground (Earth) or Wallstation / Control Interfaces. Connect the bare drain wires and cut off the outside shield.

Note: 12 AWG (2.5 mm²) conductors for Common (terminal 1) and V+ Power (terminal 2) will not fit in terminals; use 18 AWG (1.0 mm²) pigtails (< 6 in [152 mm]).
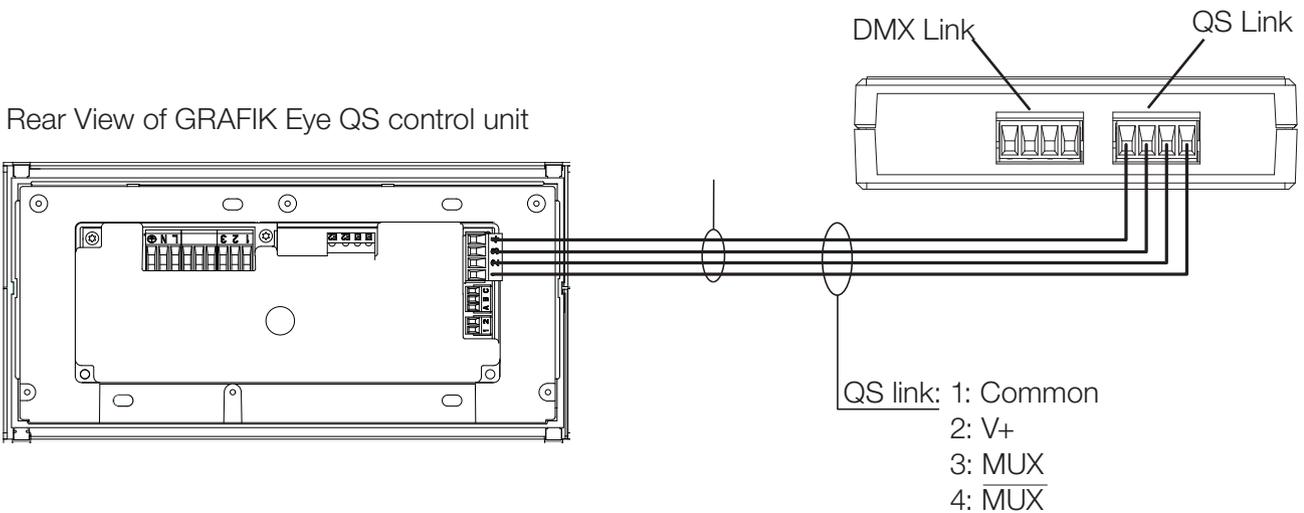
SELV / PELV / NEC® (Class 2: USA)
Power wiring:
1: Common
2: V+
(2) 18 AWG (1.0 mm²) pigtails,
6 in (152 mm) maximum length

(2) 12 AWG (4.0 mm²)

To DMX equipment

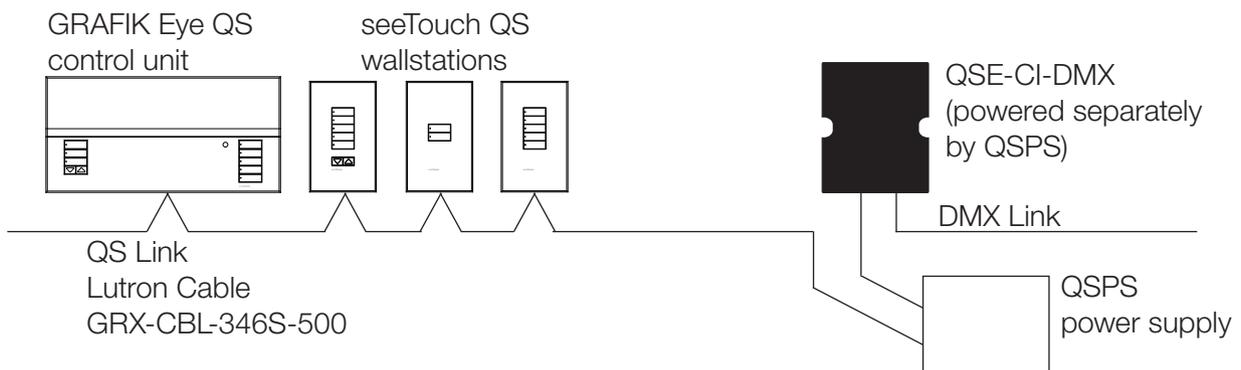| Job Name:	Model Numbers:
Job Number:	

Powering the QSE-CI-DMX

- Power for one QSE-CI-DMX counts as two devices toward the maximum of three devices per GRAFIK Eye QS control unit when powered off of Pin 2 of the GRAFIK Eye QS.
- 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); a QS shade panel power supply (QSPS-P2-10-60 for 230 V∼, or QSPS-P1-10-60 for 120 V∼); or a Quantum light management hub.

Wiring Examples

QSE-CI-DMX Powered by a GRAFIK Eye QS Control Unit

DMX Link   QS Link

Rear View of GRAFIK Eye QS control unit

QS link: 1: Common
2: V+
3: MUX
4: $\overline{\text{MUX}}$

QSE-CI-DMX Powered by a QSPS Power Supply

GRAFIK Eye QS control unit

seeTouch QS wallstations

QSE-CI-DMX (powered separately by QSPS)

DMX Link

QS Link Lutron Cable GRX-CBL-346S-500

QSPS power supply

Job Name:	Model Numbers:
Job Number:	

DMX512 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 mm^2) wires.
- Link must be 1000 ft (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	DMX512 system COMMON Note: Do NOT connect to COMMON on GRAFIK Eye QS control unit or other Lutron equipment
NC	Not connected
3: DMX512 system DATA +	DMX512 system DATA +
4: DMX512 system DATA -	DMX512 system DATA -

❋LUTRON SPECIFICATION SUBMITTAL   Page

Job Name:	Model Numbers:
Job Number:	