

## QSE-CI-DMX Control Interface

### Description

The QSE-CI-DMX operates either in a standalone QS system, a Quantum system, or a HomeWorks 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 or HomeWorks System

The DMX channels (maximum of 32) are mapped to Quantum or HomeWorks 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 or HomeWorks system, GRAFIK Eye QS zones cannot be programmed to control DMX channels.

### Features

- Map any zone on a GRAFIK Eye QS control unit, any Quantum zone, or any HomeWorks zone to any single DMX512 channel
- Map any zone on a GRAFIK Eye QS control unit, any Quantum zone, or any HomeWorks zone simultaneously to three DMX512 channels for RGB/CMY color-control
- Integral RGB/CMY lookup table that maps GRAFIK Eye QS zone intensities, Quantum zone intensities, or HomeWorks zone intensities to RGB/CMY values (colors)
- RGB/CMY table can be customized by using the Lutron QS Color Configuration Tool (PC application available at [www.lutron.com/qs](http://www.lutron.com/qs)) within the HomeWorks Designer software, or within the Quantum Q-Design software



<p>Job Name:</p>  <p>Job Number:</p>	<p>Model Numbers:</p>
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## Specifications

### Regulatory Approvals

- RoHS Compliant
- CE Marked
- NOM
- cULus

### Power Requirements

- Low-voltage SELV/PELV/NEC® Class 2
- Operating Voltage: 24–36 V $\overline{=}$  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/Device Capabilities/Limits

- Each QSE-CI-DMX control interface counts as 1 QS device and 0 zones. For QS system link limits, refer to the Lutron Residential and Commercial System Rules Specification Submittal (P/N 369982) at [www.lutron.com](http://www.lutron.com) for more information.
- Each DMX channel = 1 switch leg. Refer to the Lutron Residential and Commercial System Rules Specification Submittal (P/N 369982) at [www.lutron.com](http://www.lutron.com) for more information.
- One QSE-CI-DMX per QS link in QS standalone. This limitation does not apply when using a Quantum system or HomeWorks system.
- 32 DMX channels per QSE-CI-DMX control interface.
- Each QSE-CI-DMX control interface consumes 2 Power Draw Units (PDU) on the QS link. Refer to the QS Link Power Draw Units Specification Submittal (P/N 369405) at [www.lutron.com](http://www.lutron.com) for more information.

### 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<sup>2</sup>) 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-1a).
- Three pins on the DMX connector for connecting the QSE-CI-DMX to DMX512-controlled equipment.

### Limitations

- In a Quantum system or HomeWorks system, the 32 channels can be any of the 512 available addresses within the DMX universe. DMX mergers can be used if more than 32 DMX channels need to be controlled within 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.
- DMX 1-channel lighting can be raised/lowered, but DMX 1-channel integration and DMX 3-channel lighting cannot.

**Note:** In a QS standalone system, raise/lower can be used to cycle through colors from a customizable RGB color table using the Lutron QS DMX Color Programming Tool.

### 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  
or  
A HomeWorks 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-P1-1-35V or  
A Quantum Light Management Hub
- DMX512 link terminators at both ends of the DMX512 link (available from Lutron, part number LT-1a)
- QS Communication Link Wire (SELV/PELV/NEC® Class 2). See the **Wire Sizes** table.

<p><b>Job Name:</b></p> <p><b>Job Number:</b></p>	<p><b>Model Numbers:</b></p>
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### 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:

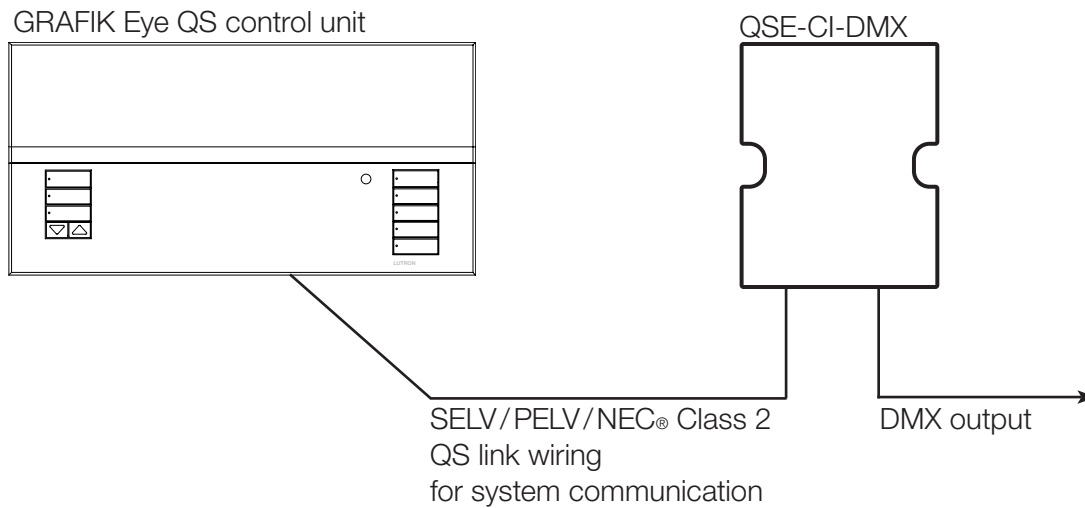
- Channels 3, 4, and 5 correspond to the red, green, and blue channels on the RGB LED fixture
- Channel 7 corresponds to the stage light

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:

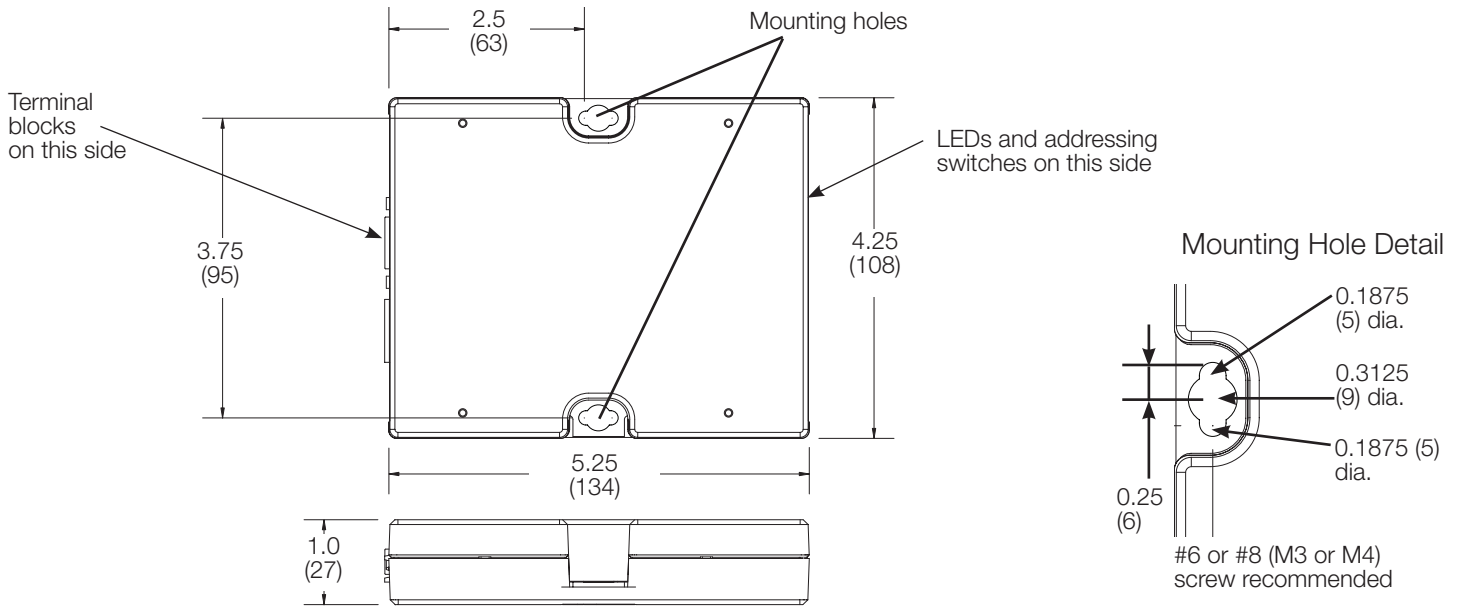
- The QSE-CI-DMX converts the zone intensities for that scene into DMX512 channel settings.
- The RGB LED fixture will go to the color programmed for that scene, and the stage light will go to the desired intensity.



Job Name:	Model Numbers:
Job Number:	

## Dimensions

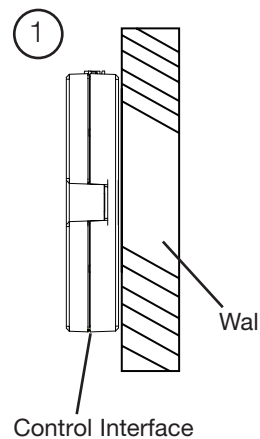
Dimensions are in inches (mm)



## 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<sup>2</sup>) 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:

### Mounting Methods



LUT-19AV-1U



LUT-5x10-ENC

### 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.

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Job Name:	Model Numbers:
Job Number:	

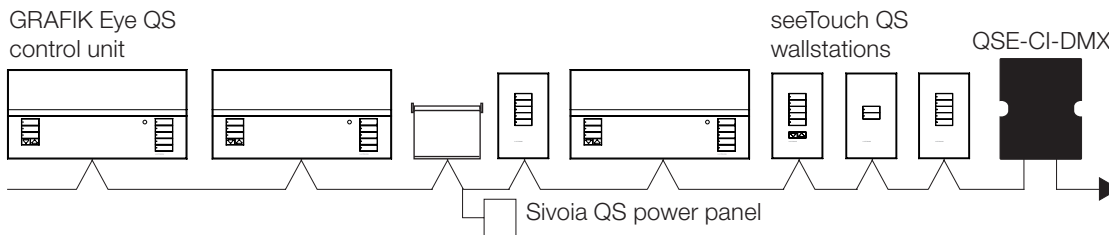
## SELV/PELV/NEC® Class 2 QS Link Requirements and Wiring

- 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](http://www.lutron.com/qs).

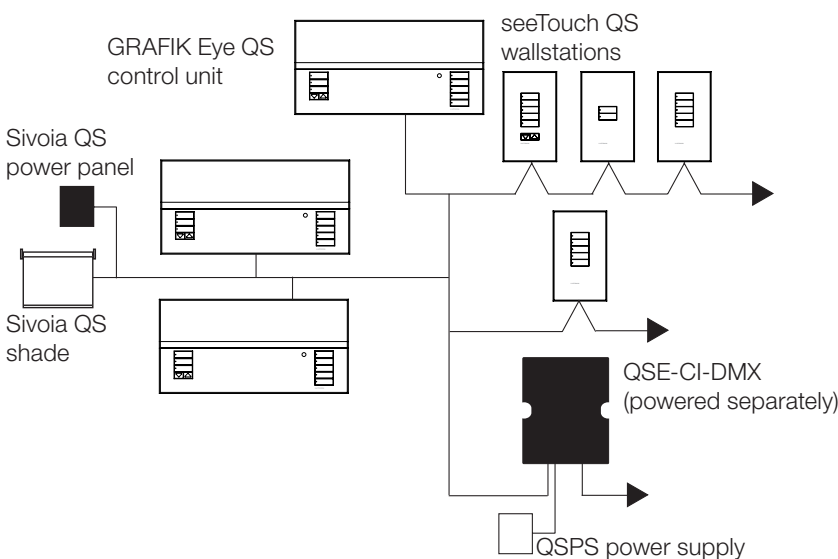
### Wire Sizes (check compatibility in your area)

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 mm <sup>2</sup> )	GRX-CBL-346S (non-plenum) GRX-PCBL-346S (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm <sup>2</sup> )	
500 to 2000 ft (153 to 610 m)	Power (terminals 1 and 2) 1 pair 12 AWG (4.0 mm <sup>2</sup> )	GRX-CBL-46L (non-plenum) GRX-PCBL-46L (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm <sup>2</sup> )	

### Daisy-Chain Wiring Example



### T-Tap Wiring Example



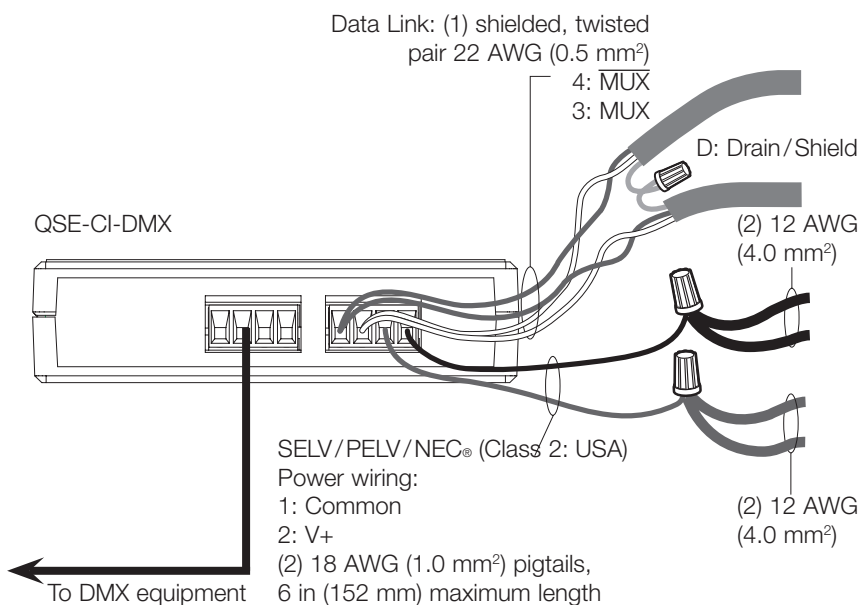
Job Name:	Model Numbers:
Job Number:	

# 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 mm <sup>2</sup> )	GRX-CBL-346S (non-plenum) GRX-PCBL-346S (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm <sup>2</sup> )	
500 to 2000 ft (153 to 610 m)	Power (terminals 1 and 2) 1 pair 12 AWG (4.0 mm <sup>2</sup> )	GRX-CBL-46L (non-plenum) GRX-PCBL-46L (plenum)
	Data (terminals 3 and 4) 1 twisted, shielded pair 22 AWG (0.5 mm <sup>2</sup> )	

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.



**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 mm<sup>2</sup>) conductors for Common (terminal 1) and V+ Power (terminal 2) will not fit in terminals; use 18 AWG (1.0 mm<sup>2</sup>) pigtails (< 6 in [152 mm]).

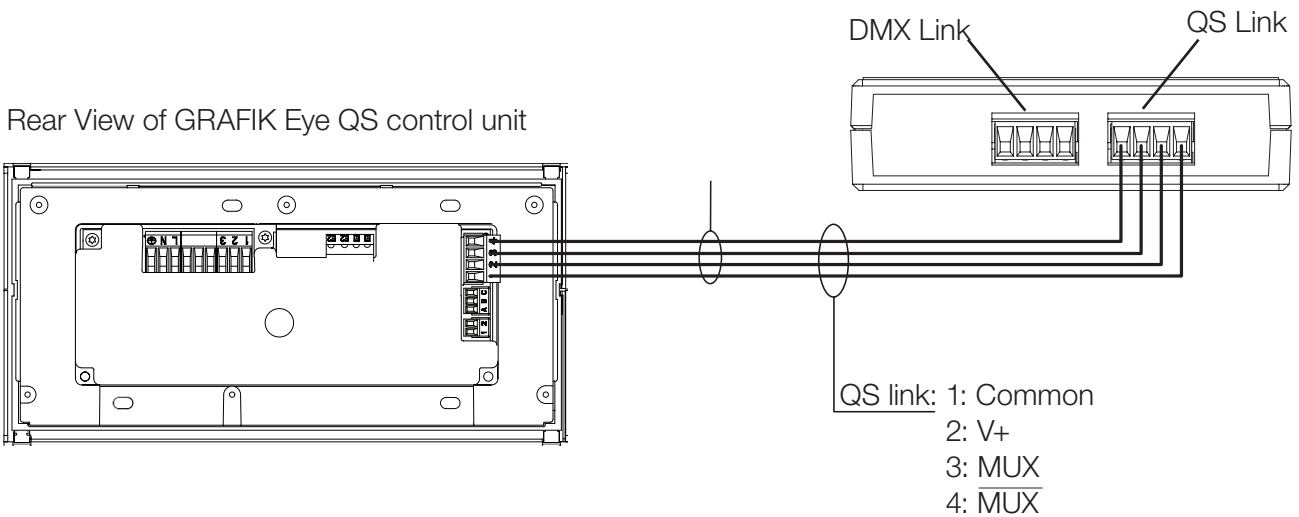
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## Powering the QSE-CI-DMX

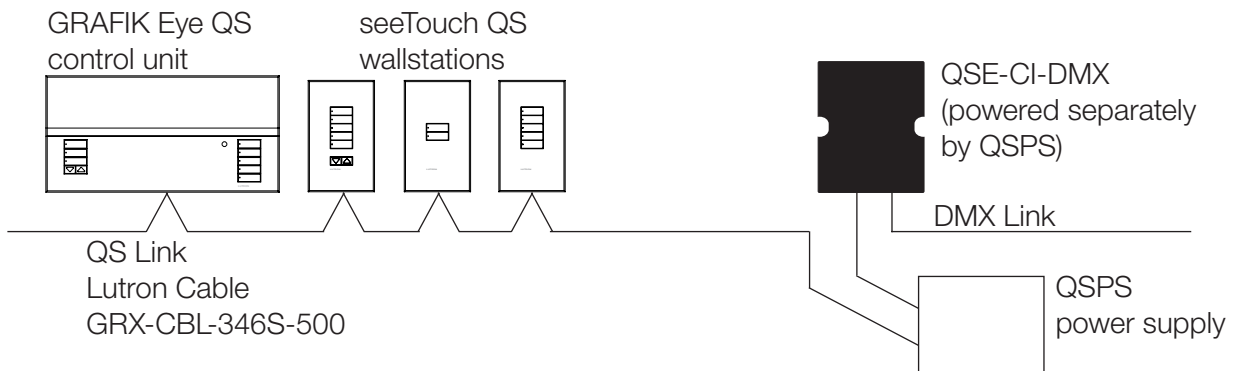
- The QSE-CI-DMX requires 2 PDUs (Power Draw Units) on the QS link. The GRAFIK Eye QS outputs 3 PDUs on the QS link, so it is capable of powering a single QSE-CI-DMX with 1 PDU to spare.
- The QSE-CI-DMX can also be powered from a QS Link power supply (QSPS-P1-1-35V, QSPS-P2-1-35V, or QSPS-P3-1-35V); a QS shade panel power supply (QSPS-10PNL for 230 V~, or QSPS-10PNL for 120 V~); or a Quantum light management hub.
- For more information on PDUs (Power Draw Units), see the Lutron PDU Spec Submittal (P/N 369405) at [www.lutron.com](http://www.lutron.com)

## Wiring Examples

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



### QSE-CI-DMX Powered by a 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<sup>2</sup>) wires.
- Link must be 1000 ft (305 m) or less.
- Link must begin and end with link terminators (available from Lutron; part number LT-1a).

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 -

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Page

<b>Job Name:</b>	<b>Model Numbers:</b>
<b>Job Number:</b>	