

## Quantum® On-Site System Startup

### Model numbers LSC-OS-S-QTM, LSC-OS-PS-QTM, LSC-OS-ST-QTM, and LSC-OS-PST-QTM

#### Overview

The Quantum® total light management system optimizes the use of light to improve comfort and productivity, simplify operations, and save energy. Quantum® systems can dim or switch all electric lighting and control daylight using automated shades/draperies.

Please refer to the Lutron Bill of Material to determine which startup service was purchased.

- LSC-OS-PST-QTM - Includes a pre-wire, startup, and training visit.
- LSC-OS-PS-QTM - Includes a pre-wire and startup visit. Hardware training will occur during the startup visit. No software training will be given.
- LSC-OS-S-QTM - Includes only a startup visit. Hardware training will occur during the startup visit. No software training will be given.
- LSC-OS-ST-QTM - Includes a startup and training visit.

#### Quantum® service notes:

- Any site visits included in the service will occur between the hours of 7 AM and 5 PM on a Monday through Friday that is not a Lutron Holiday.
- Visits may require multiple days depending on the size of the system.
- Visits can be made outside these hours for an additional charge.
- Lutron requires fifteen (15) business days notice to schedule a startup date. Additional charges may apply for expediting service inside fifteen (15) business days.
- If an integration meeting is required, verify that one was included with the system purchase.

#### A Lutron factory certified technician performs all system startup items.

**All terminations will be done by the installing agency. A person from the installing agency needs to be present for the pre-wire and startup visits; this person should be familiar with the installation of the system.**

#### Items not included in standard Quantum® startup:

- Lutron service technicians will not perform work on non-Lutron® equipment. Lutron will work with other manufacturers on integration of equipment by others.
- Programming or any other changes that are requested to be performed counter to the approved submittal drawings must be approved via the proper channels.
- Field wiring changes or corrections that delay the startup process such that additional time is required for Lutron to complete the startup will result in additional charges.
- Replacement of controls damaged due to miswires, incorrect installation, or any other related issue not covered under the Lutron warranty is the responsibility of the installer.
- Reprogramming of any functions after initial programming and sign-off may result in additional charges.
- Phased construction schedules requiring multiple visits. If this is required, please contact your Lutron representative.

#### Logistics

- To schedule on-site service e-mail us at [www.lutron.com/scheduling](http://www.lutron.com/scheduling) or call at 1.800.523.9466.
- Please contact Lutron 3 weeks prior to the requested visit date.

<b>Job Name:</b>	<b>Toll Free 24/7 Tech Support Line 1.800.523.9466</b>
<b>Job Number:</b>	<b>Field Service Scheduling 1.800.523.9466 ext 4439 or <a href="http://www.lutron.com/scheduling">www.lutron.com/scheduling</a></b>

**Visit 1: System pre-wire inspection.**

- Familiarize the electrical contractor, project manager, owner's representative, with wiring and mounting of system devices.
- Understand the overall project schedule.
- Review preliminary mounting locations and wiring practices for PC/Server, QS devices or shades, dimming/switching panels, local wall controls, ceiling mount controls/sensors, interface devices, ballasts, and Quantum® hub(s).
- Review preliminary wiring plans of devices wired to ballasts (i.e., occupancy sensor xx is wired to fixture number xx). Ensure IR sensors are wired to ballasts on the same loop.
- Review preliminary drawings for proper hub to EcoSystem® loop wiring.
- Provide training to the appropriate parties in dipswitch overrides.
- Review preliminary Lutron® network topology (i.e., CAT5 hub interconnections and/or Lutron® PC/server).

**Visit 2: System startup.**

- Audit the system to ensure the Quantum® system is installed according to Lutron specifications.
- Verify/set up system PC/Server (if applicable).
- Verify proper wiring and operation of EcoSystem® loops.
- Verify Quantum® hubs and transfer system database.
- Check loads for shorts and overloads and remove bypass jumpers.
  - Dimming/switching panels should be energized in bypass, fully lamped and tested prior to our arrival.
- Verify proper wiring and operation of the Quantum® controls.
  
- Programming the dimming/switching panels includes:
  - Panel addressing.
  - Verify proper wiring and operation of control link.
  - Proper load types assigned as installed or as per approved submittal drawings. As installed conditions take precedence. This may be a modular system and if load types differ from the original design additional/different equipment may be required.
  - Circuit to button assignments as per approved submittal drawings. If no button information exists prior to start-up, programming will be done according to written instructions from end user or end users representative, contractor, or will be based upon the Lutron provided sequence of operations, in that order of priority.
  - Program emergency function per the installation guide for the system. This may not be applicable for every system.
  
- Programming the wall controls/interfaces includes:
  - Control addressing
  - Verify proper wiring and operation of control link
  - Set up controls to function as per the approved submittal drawings. If no control functionality is included, controls will be programmed according to written instructions from end user or end users representative, contractor, or will be based upon the following rules:
    - o Motion sensors:
      - In spaces with a wall control, motion sensors will be set up as a vacancy sensor (only automatically turning off the lights) with 15-minute +/- 1-minute timeout.
      - In spaces without a wall control, motion sensors will be set up as occupancy sensors (automatically turning the lights on and off) with a 15-minute +/- 1-minute timeout.

<b>Job Name:</b>	<b>Toll Free 24/7 Tech Support Line 1.800.523.9466</b>
<b>Job Number:</b>	<b>Field Service Scheduling 1.800.523.9466 ext 4439 or <a href="http://www.lutron.com/scheduling">www.lutron.com/scheduling</a></b>

- o Daylight sensors:
  - Calibrated in such a manner to provide 40 fc +/- 5 fc 3 ft (91 cm) off the floor at a specific point in the room, typically the center of a desk or directly under a fixture. Note the consistency of light distribution throughout the space is highly dependent upon fixture design and placement.
- o Wall controls:
  - One button – Toggle lights on and off.
  - Two button – Top button will turn lights on and bottom button will turn lights off.
  - More than two buttons.
    - For Dimmed zones: Top buttons will set the lights to different levels. Bottom button will turn the lights off.
- o Timeclock settings:
  - Lights on the Lutron® system on the building's exterior will turn on at sunset and turn off at sunrise.
- Test all buttons to assure proper operation
- Set light levels and fade times on controls as per approved submittal drawings. If no information is provided, test scenes will be set to 100%, 75%, 50%, and 25%, and default fade times will be set to 3 seconds.
- o **Occupancy sensor:**
  - Verification of proper installation and operation. If a sensor is not installed in accordance with Lutron procedures, Lutron will not continue startup activities on that sensor until the installation issues are corrected.
  - Unless otherwise noted, a rough calibration will be performed at system startup. Final calibration is the responsibility of the end user since it is very dependent on furniture placement, HVAC operation, and space usage. Lutron will not fine-tune occupancy sensors to detect minor movements in the space or to not detect motion that contributes to false-trips.
- o **Daylight sensor:**
  - Verification of proper installation and operation. If a sensor is not installed in accordance with Lutron procedures, Lutron will not continue startup activities on that sensor until the installation issues are corrected.
  - Calibration will be performed at system startup. Final adjustment is the responsibility of the end user since it is very dependent on furniture placement, window treatments, outside weather conditions, and space usage. End user will be trained on making final adjustments. Lutron will not fine-tune daylight sensors to achieve specified foot-candle readings.
- o **Timeclock setup:**
  - Lutron will set up the system location, daylight savings, and time of day preparation for event programming.
  - Lutron will set up timeclock events as per the approved submittal drawings or written instructions from end user or end user's representative or contractor, in that order of priority.
  - In lieu of instructions, the timeclock will not be programmed. End user will be trained on how to set up and adjust timeclocks.

### **Visit 3: End user training visit on overall system operation:**

- It is the responsibility of the person scheduling the startup to ensure the appropriate end users are present for training. Lutron typically does not have these contacts.
- Additional charges will apply if additional visits are required for training the end user.
- Lutron does not provide video media for training sessions. This may be provided by "others" for turnover to the end user or job site documentation.
- System demonstration and sign-off by the end user.
- Typical training agenda is attached.

<b>Job Name:</b>	<b>Toll Free 24/7 Tech Support Line 1.800.523.9466</b>
<b>Job Number:</b>	<b>Field Service Scheduling 1.800.523.9466 ext 4439 or <a href="http://www.lutron.com/scheduling">www.lutron.com/scheduling</a></b>

**Additional items that are not included with standard startup, but may be purchased—check your quote to verify an item has been included with your quote. Additional details of each item are available from your Lutron representative.**

- LSC-AF-VISIT - Aim and focus visit with design team or end user.
- LSC-SYSOPT - System optimization visit with end user.
- LSC-WALK - Startup agent or design team walk-through visit.
- LSC-SILV-IW - This is the initial 2-year Technology Support Plan included with the purchase of the system start-up. Details are supplied within the submittal documentation.
- LSC-GOLD-IW or LSC-PLAT-IW - These are upgraded Technology Support Plans which include expedited response time and a scheduled maintenance visit.
- LSC-TRAINING - This visit is for additional time on the job for training the end user.
- LSC-AH-SU - Afterhours startup.
- LSC-INT-VISIT - Integration meeting visit. Typically conducted prior to start-up, meeting is intended to meet with other equipment manufacturers to discuss integration with Lutron® equipment.
- LSC-LEED-DOC - Solution Assurance Documentation that describes the pre-functional tests, functional tests, and test results.
- LSC-SMA - Annual subscription for Quantum® customers that ensures Microsoft Product Patches (Internet Explorer, Operating Systems, SQL Server) and application compatibility.

**Additional items listed below may be charged for job sites.**

- LSC-NS-TRAVEL - Non-standard travel arrangements
- LSC-RETURN - Job site contact schedules start-up but job is not ready when field service engineer arrives, requiring a return visit.
- LSC-CHANGE-ORDER - For on-site time required to implement changes in system operation after programming has begun.
- LSC-SRVC-OVERRUN - For on-site time for additional manpower/time required due to contractor space-turnover issues.

Job Name:	Toll Free 24/7 Tech Support Line 1.800.523.9466
Job Number:	Field Service Scheduling 1.800.523.9466 ext 4439 or <a href="http://www.lutron.com/scheduling">www.lutron.com/scheduling</a>

## Quantum® Training Visit—Typical Agenda (duration—approximately 6 to 8 hours)

- Review system with end-user (control/sensor/lighting hub locations and functions).
- Discuss system model numbers.
- Discuss Lutron lexicon—what is an area, scene, fade time, etc.
- Review all system components:
  - EcoSystem® ballasts
  - Lighting Hub
  - Occupancy sensors
  - Daylight sensors
  - IR receivers
  - Wall controls
  - Sivoia® QS shades/draperies
  - QS Devices
  - Dimming and Switching Panels
- Q-Manager™ and Q-Admin™ software:
  - Area tree
  - Control and Monitoring tab
    - o Scene selects, Area Levels, Zone Levels, Shade/Drapery Levels
    - o Occupancy
    - o Daylighting
    - o Timeclock programming
    - o Load Shedding
    - o Diagnostics
    - o Graphical View
  - Standard Reports tab
    - o Energy usage
    - o Power usage
    - o Failed Lamps
    - o System Activity
    - o Devices status
    - o Sensors status
  - Administration tab
    - o Users
    - o Publish Graphical Floorplan
    - o Backup/Publish Project Database
- Quantum® Green Glance® software.
- Troubleshooting of the system.
- Preventative maintenance.
- Warranty information.
- Review Service and Support Guide | Lighting Control System.
- Technical support.
- Lutron Facility Managers EcoSystem® and Quantum® Training
- Q/A

NOTE: All topics may not be relevant to every system. The topics listed above represent a standard Lutron training agenda.

<b>Job Name:</b>	<b>Toll Free 24/7 Tech Support Line 1.800.523.9466</b>
<b>Job Number:</b>	<b>Field Service Scheduling 1.800.523.9466 ext 4439 or <a href="http://www.lutron.com/scheduling">www.lutron.com/scheduling</a></b>