

## Quantum® System Onsite 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 with training overview.
- LSC-OS-S-QTM: Includes only a startup visit with training overview.
- 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 A.M. and 5 P.M. on a Monday through Friday that is not a Lutron® Holiday.
- Visits can be made outside these hours for an additional charge.
- Visits may require multiple days depending on the size of the system.
- Lutron requires fifteen (15) business days' notice to schedule a startup visit. Additional charges may apply for expediting service within fifteen (15) business days.
- Lutron offers a portfolio of elective services that support the startup process; these services are offered a-la-carte and are not included as part of the typical scope of startup. If they are required, verify that they were included with the system purchase.

#### A Lutron® service representative performs all system startup items.

**All terminations will be done by the installing agency. A representative from the installing agency must be present for the pre-wire and startup visits and must be familiar with the installation of the system.**

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

- Lutron® service representatives will not perform work on non-Lutron® equipment. If System and Network Integration Consultation visits (LSC-INT-VISIT) were purchased, Lutron will work with other manufacturers on integration with equipment by others.
- Programming or any other changes that are requested to be performed counter to the approved submittal sequence of operations must be approved via the proper channels and may result in additional charges.
- 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.
- Construction phasing, which may require multiple visits, is not included in a standard Quantum® startup. If this is required, please contact your Lutron® representative.

#### Logistics

- To schedule an onsite service, please submit a "Schedule a Visit" form at [www.lutron.com/scheduling](http://www.lutron.com/scheduling) or call: 1.800.523.9466.
- Please contact Lutron at least 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, follow the prompts for "field service," then "scheduling onsite visit" 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, and/or 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 infrared (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/setup 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 equipment may be required.
  - Circuit to button assignments as per approved submittal sequence of operations. If no button information exists prior to startup, programming will be done according to written instructions from the end user or the end users' representative, contractor, or will be based upon the Lutron® provided sequence of operations, in that order of priority.
  - When applicable, program emergency function per the installation guide for the system.
- Programming the wall controls/interfaces includes:
  - Control addressing.
  - Verify proper wiring and operation of the control link.
  - Setup controls to function as per the approved submittal sequence of operations. If no control functionality is included, controls will be programmed according to written instructions from the end user or end users' representative, contractor, or will be based upon the following rules:
    - o Occupancy/Vacancy sensors:
      - In spaces with a wall control, occupancy/vacancy sensors will be set up as a vacancy sensor (only automatically turning off the lights) with 15-minute, plus/minus 1-minute, time-out.
      - In spaces without a wall control, occupancy/vacancy sensors will be set up as occupancy sensors (automatically turning the lights on and off) with a 15-minute, plus/minus 1-minute, time-out.

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- o Daylight sensors:
  - Calibrated in such a manner to provide 40 fc, plus/minus 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; 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 ensure 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/Vacancy sensor:**
  - Verification of proper installation and operation. If a sensor is not installed in accordance with Lutron® procedures, Lutron will cease startup activities on that sensor until the installation issues are corrected.
  - Unless a Sensor Layout and Tuning Service has been purchased or 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 neither fine-tune occupancy sensors to detect minor movements in the space nor to 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 the end user or the end user's representative or contractor, in that order of priority.
  - In the absence of instructions, the timeclock will not be programmed. The end user will be trained on how to set up and adjust timeclocks.
- **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. The training may be recorded by others to be provided to the end-user.
  - System demonstration and sign-off by the end user.
  - Typical training agenda is attached.

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

- LSC-AF-VISIT: Onsite Scene and Level Tuning visit with the design team or the end user.
- LSC-SYSOPT: System Optimization visit with end user.
- LSC-WALK: Startup agent or design team System Performance-Verification Walkthrough.
- LSC-E8S: This is the 8-year, Pro-rated Enhanced Warranty that was included with the purchase of the system startup. Details are supplied within the submittal documentation.
- LSC-E8G and LSC-E8P: These are upgraded Enhanced Warranties which include expedited response time and a scheduled Preventive Maintenance visit.
- LSC-TRAINING: Customer-Site Solution Training visit for additional time on the job for training the end user.
- LSC-AH-SU: After-Hours Startup.
- LSC-INT-VISIT: System and Network Integration Consultation. Typically conducted prior to startup, meeting is intended to meet with other equipment manufacturers, system integrators, and/or IT managers to discuss integration with Lutron® equipment.
- LSC-LEED-DOC: Solution Performance-Verification Documentation that describes the pre-functional tests, functional tests, and test results.
- LSC-SMA: Software Maintenance Agreement. Annual subscription for Quantum® customers that ensures Microsoft Product Patches (Internet Explorer, Operating Systems, SQL Server) and application compatibility.
- LSC-SENS-LT: Sensor Layout and Tuning. Ensures that the Lutron® sensors are properly positioned and programmed.

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

- LSC-NS-TRAVEL: Non-standard travel arrangements.
- LSC-RETURN: Job site contact schedules startup but job is not ready when field service engineer arrives, requiring a return visit.
- LSC-CHANGE-ORDER: For onsite or remote service time required to implement changes that fall outside of the scope of work for services quoted and ordered set forth in this document.

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## Quantum® Training Visit: Typical Agenda

- System Overview
  - Controls
  - Components
  - Functionality Walk-through
- System Software
  - Navigation
  - System Features
  - Report Generation
  - Administration
- Preventive Maintenance
- Warranty Information
- Additional Lutron® Service & Support
  - Dial 800.523.9466 and follow the prompts for field service, then scheduling.
  - Lutron® Services Catalog
  - Technical Support
  - Remote Services
  - Onsite Services
  - Additional Training Opportunities
- Questions/Discussion

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

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