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# **Quantum System On-site Startup**

### Model numbers:

- LSC-OS-S-QTM
- LSC-OS-RPS-QTM
- LSC-OS-PS-QTM
- LSC-OS-ST-QTM
- LSC-OS-RPST-QTM
- LSC-OS-PST-QTM

# **Abbreviation Descriptions:**

- S=On-site Startup
- RP=Remote Pre-wire Session
- P=On-site Pre-wire Visit
- T=Training Package

#### 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-S-QTM: On-site Quantum startup by a Lutron services company representative for this system includes the following services:
  - On-site startup visit(s) after Lutron equipment is installed; equipment installation is verified, and the system is programmed and tested during this time to comply with the approved sequence of operations.
    - Unless noted on BOM, a separate pre-wire and training visit are not included with this system. A brief system
      overview will be conducted on the last day of commissioning at time of system turnover.
- LSC-OS-RPS-QTM: On-site Quantum startup by a Lutron services company representative for this system includes the following services:
  - A remote pre-wire session with the electrical contractor, project manager, and owner's representative to discuss
    the project scope (including installation details on all equipment), review the Lutron submittal package (specifically
    the system one-line, device spec sheets and system layout) and discuss the construction timeline.
  - On-site startup visit(s) after Lutron equipment is installed; equipment installation is verified, and the system is
    programmed and tested during this time to comply with the approved sequence of operations. A system overview
    to provide instruction on the lighting control system maintenance and operation, including the use of any system
    software on the last day of commissioning before conclusion of visit.
    - Unless noted on BOM, a separate training visit is not included with this system. A brief system overview will be conducted on the last day of commissioning at time of system turnover.
- LSC-OS-PS-QTM: On-site Quantum startup by a Lutron services company representative for this system includes the following services:
  - An on-site pre-wire visit with the electrical contractor, project manager, and owner's representative to discuss the project scope (including installation details on all equipment), review the Lutron submittal package (specifically the system one-line, device spec sheets and system layout) and discuss the construction timeline.
  - On-site startup visit(s) after Lutron equipment is installed; equipment installation is verified, and the system is programmed and tested during this time to comply with the approved sequence of operations. A brief system overview to provide instruction on the lighting control system maintenance and operation, including the use of any system software on the last day of commissioning before conclusion of visit.
    - Unless noted on BOM, a separate training visit is not included with this system. A brief system overview will be conducted on the last day of commissioning at time of system turnover.
- LSC-OS-ST-QTM: On-site Quantum startup by a Lutron services company representative for this system includes the following services:
  - On-site startup visit(s) after Lutron equipment is installed; equipment installation is verified, and the system is programmed and tested during this time to comply with the approved sequence of operations.
  - A training package which includes: (1) 2-hour system closeout training on the last day of commissioning and (1) customer system orientation visit (LSC-CSO-VST) 30-90 days post occupancy.
    - Any person who will be operating in the system on a regular basis should be in attendance to the customer system orientation visit (LSC-CSO-VST).
    - o Unless noted on BOM, a separate pre-wire service is not included with this system.

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### Overview (continued)

- LSC-OS-RPST-QTM: On-site Quantum startup by a Lutron services company representative for this system includes the following services:
  - A remote pre-wire session with the electrical contractor, project manager, and owner's representative to discuss
    the project scope (including installation details on all equipment), review the Lutron submittal package (specifically
    the system one-line, device spec sheets and system layout) and discuss the construction timeline.
  - On-site startup visit(s) after Lutron equipment is installed; equipment installation is verified, and the system is programmed and tested during this time to comply with the approved sequence of operations.
  - A training package which includes: (1) 2-hour system closeout training on the last day of commissioning and (1) customer system orientation visit (LSC-CSO-VST) 30-90 days post occupancy.
    - Any person who will be operating in the system on a regular basis should be in attendance to the customer system orientation visit (LSC-CSO-VST).
- LSC-OS-PST-QTM: On-site Quantum startup by a Lutron services company representative for this system includes the following services:
  - An on-site pre-wire visit with the electrical contractor, project manager, and owner's representative to discuss the
    project scope (including installation details on all equipment), review the Lutron submittal package (specifically the
    system one-line, device spec sheets and system layout) and discuss the construction timeline.
  - On-site startup visit(s) after Lutron equipment is installed; equipment installation is verified, and the system is programmed and tested during this time to comply with the approved sequence of operations.
  - A training package which includes: (1) 2-hour system closeout training on the last day of commissioning and (1) customer system orientation visit (LSC-CSO-VST) 30-90 days post occupancy.
    - Any person who will be operating in the system on a regular basis should be in attendance to the customer system orientation visit (LSC-CSO-VST).

#### 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 standard startup consists of a single phase of service, without interruptions by a single field service engineer.
- 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 session 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 on-site service, visit www.lutron.com/support or call: 1.888.LUTRON1 (588.7661). Press 3
- Please contact Lutron at least 3 weeks prior to the requested visit date.

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Meeting 1: System pre-wire service.

(Included with the RPST (remote pre-wire), RPS (remote pre-wire), PST (on-site pre-wire) and PS (on-site pre-wire) [defined on page 1])

- Familiarize the electrical contractor, project manager, and/or owner's representative with wiring and/or 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).

# Meeting 2: On-site system startup.

(Included with the RPST, RPS, PS, PST, and ST [defined on page 1])

- 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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### Meeting 2: On-site system startup. (continued)

- 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.

### Meeting 3: Training Package.

(Included with the RPST, PST and ST [defined on page 1])

- This includes both a 2-hour system closeout training on the last day of commissioning and a customer system orientation visit to train the end user 30-90 days post occupancy and provide system optimization suggestions (LSC-CSO-VST).
- Any person who will be operating in the system on a regular basis should be in attendance to the customer system orientation visit.
- 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.
- 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: On-site 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: 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: 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 on-site 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 Agenda for the Customer System Orientation Visit

- $^{st}$  This training is meant for those who will be operating in the Lutron Quantum system on a regular basis.
- System Orientation (approximately 1 hour)
  - Overview control/sensor/lighting hub locations and functions.
  - Model numbers
  - Lutron lexicon what is an area, scene, fade time, etc.
  - Components
- Quantum Vue Software (approximately 1-2 hours)
  - Main page
  - Floorplan and dashboard tiles
  - Energy tile
  - Alert tile
  - Schedule tile
  - Quick control tile
- Preventative Maintenance and Troubleshooting (approximately 1 hour)
- Warranty, Service and Support (approximately 1 hour)
- Questions and Answers (approximately 30 minutes)

**NOTE:** All topics may not be relevant to every system. The topics listed above represent a standard Lutron training agenda. (Times are subject to change.)

### **Contact Information**

- Phone: 1.888.LUTRON1 (588.7661)
  - For Tech Support, press 1
  - Lighting/Shading Customer Service, press 2
  - To schedule a visit, press 3
- Email: lscscheduling@lutron.com
- Website: lutron.com/services

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