



**WIRING LEGEND:**

- △ QS CONTROL LINK (SEE WIRE DESCRIPTION BELOW)
  - ▲ QS CONTROL LINK (SEE WIRE DESCRIPTION BELOW) (CONNECT WIRES 1, 3 AND 4. DO NOT CONNECT WIRE # 2)
- QS WIRING AS REQUIRED BY CONTROL LINK LENGTH (REFER TO QS SMART PANEL POWER SUPPLY WIRING GUIDE FOR SHADE WIRING NOTES):

TOTAL CONTROL LINK LENGTH	WIRE GAUGE	AVAILABLE FROM LUTRON IN ONE CABLE:
LESS THAN 500ft (152.4 m)	POWER (TERMINALS 182): 1 PAIR 18 AWG (1.0 mm <sup>2</sup> ) DATA (TERMINALS 384): 1 PAIR 22 AWG (0.5 mm <sup>2</sup> ), TWISTED AND SHIELDED*	GRX-CBL-346S (NON-PLENUM) OR GRX-PCBL-346S (PLENUM)
500ft (152.4 m) TO 2,000ft (610 m)**	POWER (TERMINALS 182): 1 PAIR 12 AWG (4.0 mm <sup>2</sup> ) DATA (TERMINALS 384): 1 PAIR 22 AWG (0.5 mm <sup>2</sup> ), TWISTED AND SHIELDED*	GRX-CBL-46L (NON-PLENUM) OR GRX-PCBL-46L (PLENUM)

\*ALTERNATE DATA-ONLY CABLE: USE APPROVED DATA LINK CABLE (22 AWG [0.5 mm<sup>2</sup>] TWISTED/SHIELDED) FROM BELDEN (MODEL # 9461).

\*\*TOTAL LENGTH OF THE QS LINK MUST NOT EXCEED 2,000 ft (600 m).

QS SMART PANEL POWER SUPPLY (QSPS-10PNL) QS WIRING GUIDE				
MAXIMUM DEVICES PER ONE OUTPUT	MAXIMUM DISTANCE PER ONE OUTPUT BASED ON WIRE GAUGE			
SHADES + CONTROLS	12 AWG (4 mm <sup>2</sup> ) QSH-CBL-4-500 QSH-CBLP-4-500	16 AWG (1.5 mm <sup>2</sup> ) QSH-CBL-4-500 QSH-CBLP-4-500	18 AWG (1.0 mm <sup>2</sup> ) GRX-CBL-346S-500	
NONE	UP TO 8 POWER DRAW UNITS	2,000 ft (610 m)	1,000 ft (305 m)	600 ft (183 m)
QS INDIVIDUAL POWER SUPPLY (QSPS-PX-1-35V OR QSPS-J-1-50) QS WIRING GUIDE				
MAXIMUM DEVICES PER ONE OUTPUT	MAXIMUM DISTANCE PER ONE OUTPUT BASED ON WIRE GAUGE			
SHADES + CONTROLS	12 AWG (4 mm <sup>2</sup> ) QSH-CBL-4-500 QSH-CBLP-4-500	16 AWG (1.5 mm <sup>2</sup> ) QSH-CBL-4-500 QSH-CBLP-4-500	18 AWG (1.0 mm <sup>2</sup> ) GRX-CBL-346S-500	
NONE	UP TO 8 POWER DRAW UNITS	2,000 ft (600 m)	1,500 ft (450 m)	

- INPUT POWER (NORMAL)
- 2 #12AWG (4 mm<sup>2</sup>)
- 3 #12AWG (4 mm<sup>2</sup>)
- ◆ 0-10V SIGNAL: 2 #18AWG (1.0 mm<sup>2</sup>)
- ↔ 2-WAY RF COMMUNICATION
- 2 #18AWG (1.0 mm<sup>2</sup>)
- 3 #18AWG (1.0 mm<sup>2</sup>)

**WIRING NOTES:**

- QS LINK RULES**  
THE FOLLOWING LINK RULES MUST BE OBSERVED FOR PROPER OPERATION:
- THIS IS A TOPOLOGY-FREE LINK (T-TAP, HOME-RUN, ETC. IS OK), REFER TO TABLE BELOW FOR WIRE RUN LIMITS.
  - IF WIRED DIFFERENTLY THAN WHAT IS SHOWN, POWER DRAW UNIT REQUIREMENTS NEED TO BE CONFIRMED; SEE POWER DRAW UNITS (PDUs) SPECIFICATION SHEET INCLUDED IN THIS SUBMITTAL.
  - MAXIMUM OF 512 OUTPUTS (BALLASTS, SHADES, CONTACT CLOSURES, ETC).
  - MAXIMUM OF 100 OCCUPANCY SENSORS, 100 DAYLIGHT SENSORS/RADIO SHADOW SENSORS AND 100 KEYPADS.
  - MAXIMUM OF 100 QS DEVICES (SUCH AS A GRAFIK EYE®, QS SEETOUCH® QS KEYPAD, SMART PANEL POWER SUPPLY (QSPS-PX-10-60), ESN, OR SIVOIA® QS SHADE / DRAPERY DRIVE UNIT), QUANTUM PROCESSOR COUNTS AS 1 DEVICE PER LINK.
  - MAXIMUM OF 100 ZONES - SUCH AS A SIVOIA QS SHADE / DRAPERY DRIVE UNIT, OR A LIGHTING ZONE ON A GRAFIK EYE QS (DOES NOT APPLY TO QUANTUM SYSTEMS).
  - THE 10 OUTPUTS ON A QSPS-PX-10-60 CANNOT EXCEED A COMBINED LENGTH OF 2,000 ft (600 m).

CONCEPT DRAWING NOTES:  
CONTROL SYSTEM DRAWING IS PROVIDED FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. EXACT EQUIPMENT REQUIREMENTS, INCLUDING LOCATIONS AND QUANTITIES, SHOULD BE VERIFIED IN ACCORDANCE WITH THE MOST UP-TO-DATE LIGHTING/ELECTRICAL REFLECTED CEILING PLANS, LIGHTING FIXTURE SCHEDULES, PANEL SCHEDULES, CONTROL INTENT AND SPECIFICATIONS. SHADE EQUIPMENT SHOULD BE VERIFIED IN ACCORDANCE WITH ARCHITECTURAL PLANS, SPECIFICATIONS AND WINDOW SCHEDULES/DETAILS.

LED DIMMING REQUIRES AN EXACT MATCH BETWEEN THE LED ARRAY, DRIVER AND CONTROL. LUTRON CANNOT GUARANTEE COMPATIBILITY OR PERFORMANCE WITHOUT TESTING THIS COMBINATION.  
TO CONFIRM WHAT PRODUCTS LUTRON HAS AVAILABLE OR WHAT INTERFACES MAY BE REQUIRED, CALL 1-877-DIM-LED8 OR CHECK LUTRON'S PRODUCT COMPATIBILITY MATRIX ON-LINE AT WWW.LUTRON.COM/LED.  
TO REQUEST THE TESTING OF AN LED PRODUCT BY LUTRON MANUFACTURERS CAN FILL OUT AN LED EVALUATION REQUEST FORM ON-LINE AT WWW.LUTRON.COM/LED OR CONTACT LED@LUTRON.COM.

LUTRON CAN GUARANTEE COMPATIBILITY AND PERFORMANCE OF LUTRON HI-LUME A-SERIES LED DRIVERS USED WITH APPROPRIATE LUTRON CONTROLS. THE HI-LUME A-SERIES LED DRIVER CAN BE USED ON PRODUCTS UNDER 40 WATTS WITH SUITABLE MOUNTING LOCATIONS. PLEASE REFER TO THE SPECIFICATION SUBMITTAL SHEET FOR FURTHER INFORMATION.  
IF USING UNTESTED, NON-LUTRON LED DRIVERS REQUIRING 0-10V CONTROL, PERFORMANCE AND COMPATIBILITY CANNOT BE GUARANTEED BY LUTRON. PRODUCTS FOLLOWING THE IEC STANDARD 60929 ARE MORE LIKELY TO PROVIDE ACCEPTABLE PERFORMANCE RESULTS. DETERMINATION OF RESULT ACCEPTABILITY IS UP TO THE USER'S DISCRETION.  
IF USING UNTESTED, NON-LUTRON LED DRIVERS REQUIRING PHASE CONTROL, PERFORMANCE AND COMPATIBILITY CANNOT BE GUARANTEED BY LUTRON. A-SERIES OR ELV PRODUCTS PROVIDING HIGH END AND LOW END TRIM ADJUSTMENTS ARE MORE LIKELY TO PROVIDE ACCEPTABLE PERFORMANCE RESULTS. DETERMINATION OF RESULT ACCEPTABILITY IS UP TO THE USER'S DISCRETION.

**LUTRON NOTES:**  
ALL DIMMING BALLASTS TO BE LUTRON ECOSYSTEM, ECOSYSTEM H-SERIES, OR HI-LUME 3D TYPE.  
ALL DIMMING DRIVERS TO BE LUTRON ECOSYSTEM DRIVER: A-SERIES; H-SERIES; OR S-SERIES OTHERWISE NOTED.  
E.E. TO CONFIRM ALL CIRCUITING REQUIREMENTS.  
ARCHITECT TO VERIFY QUANTITY, LOCATION & FINISH OF ALL CONTROLS.  
ALL FACEPLATES, DIMMERS, SWITCHES, RECEPTACLES & CABLE/PHONE JACKS TO BE LUTRON NOVA™.  
LUTRON FIELD SERVICE COMMISSIONING INCLUDED IN ALL SYSTEMS INITIATES AN 2 YEAR LIMITED WARRANTY. THE ELECTRICAL CONTRACTOR MUST CONTACT LUTRON (1-844-588-7661) TO SET UP VISIT WITH 10 DAYS NOTICE.

LUTRON SERVICES		
COUNT OF EACH SERVICE SPECIFIED	SERVICE TITLE (MODEL NUMBER)	SERVICE DESCRIPTION
THE COUNTS OF SERVICES BELOW ARE TO BE INCLUDED AS PART OF THIS PROJECT'S SCOPE OF WORK AND SPECIFIED INTO THE WRITTEN SPEC DOCUMENTS		
<b>PRE-STARTUP SERVICES</b>		
ON-SITE PRE-WIRE VISIT (LSC-PREWIRE)	ON-SITE VISIT WITH ELECTRICAL CONTRACTOR TO DISCUSS LOGISTICAL CONSTRUCTION CONSIDERATIONS INCLUDING WIRING & MOUNTING OF SYSTEMS, CONSTRUCTION SCHEDULE & LUTRON DOCUMENTATION. QUANTITY DICTATES THE NUMBER OF VISITS PURCHASED.	
SYSTEM & NETWORK INTEGRATION CONSULTATION (LSC-INT-CONSULT)	CONSULTATIVE VISIT WITH THIRD PARTY INTEGRATORS TO CONFIRM THE SPECIFIED SEQUENCE OF OPERATION & DISCUSS INTEGRATION PROCEDURES NEEDED IN ORDER TO INTEGRATE WITH LUTRON SYSTEMS. BAS, BMS, IT, NON-LUTRON SHADES, BACKBOX, AV, OR ENERGY DASHBOARDS.	
SENSOR LAYOUT & TUNING (LSC-SENS-1)	LUTRON WILL TAKE RESPONSIBILITY FOR LUTRON-PROVIDED SENSOR PLACEMENT & PERFORMANCE BY CREATING SENSOR LAYOUTS, COORDINATING SENSOR PLACEMENT PRIOR TO & AFTER INSTALLATION DURING STARTUP. ONCE THE BUILDING IS OCCUPIED, LUTRON WILL RETURN UP TO TWO TIMES TO TUNE SENSOR FINE-TUNING.	
<b>STARTUP SUPPORT SERVICES</b>		
AFTER HOURS STARTUP (LSC-AH-SH)	STARTUP PROVIDED BETWEEN THE HOURS OF 5:00PM - 7:00AM, MONDAY - FRIDAY. THIS SCOPE OF WORK DOES NOT INCLUDE HOLIDAY OR WEEKEND WORK. ADDITIONAL FEES MAY APPLY FOR WORK TO BE COMPLETED ON WEEKENDS (FRIDAY 5:00PM - MONDAY 7:00AM).	
ON-SITE SCENE & LEVEL TUNING (LSC-AF-VISIT)	AN ON-SITE VISIT WITH THE SPECIFIER OR CUSTOMER REPRESENTATIVE TO REVIEW DESIGN INTENT, FINE-TUNE SCENE LEVEL PROGRAMMING, AND TIME/CLOCK ADJUSTMENTS.	
ON-SITE PERFORMANCE VERIFICATION WALKTHROUGH (LSC-WALK)	ON-SITE WALKTHROUGH WITH FACILITY REPRESENTATIVES OR PRODUCT COMMISSIONING AGENTS TO DEMONSTRATE THAT THE SYSTEM FUNCTIONALITY MEETS THE DESIGN INTENT. THIS MAY INCLUDE ANY OF THE FOLLOWING ON-SITE ACTIVITIES - CONSULTATION, DEMO, DEMO, FUNCTIONAL TESTING ASSISTANCE & INVENTORY OF LUTRON EQUIPMENT.	
SYSTEM PERFORMANCE VERIFICATION DOCUMENTATION (LSC-SPV-DOC)	COMPLETION OF DOCUMENTATION WHICH PROVIDES PERFORMANCE VERIFICATION CERTIFYING THE LUTRON EQUIPMENT HAS BEEN THOROUGHLY TESTED. IT SUPPORTS THE DOCUMENTATION REQUIREMENTS OF MANY BUILDING STANDARDS.	
TITLE 24 ACCEPTANCE TEST VISIT (LSC-SPV-DOC-T24)	ACCEPTANCE TESTING BY A LUTRON CERTIFIED LIGHTING CONTROL ACCEPTANCE TEST TECHNICIAN (CATT) TO FULFILL THE REQUIRED TITLE 24 INTERIOR LIGHTING CONTROL TESTS.	
<b>POST-STARTUP SERVICES</b>		
CUSTOMER-SITE SOLUTION TRAINING (LSC-TRAINING-SP)	A VISIT TO TEACH SYSTEM USERS HOW TO OPERATE AND MAINTAIN THE LIGHTING CONTROL SYSTEM.	
SYSTEM OPTIMIZATION (LSC-SPV-SP)	ON-SITE CONSULTATIVE VISIT TO IDENTIFY & IMPLEMENT LIGHTING CONTROL ADJUSTMENTS TO SAVE ADDITIONAL ENERGY & CREATE A MORE PRODUCTIVE WORK ENVIRONMENT.	
<b>MAINTENANCE &amp; SUPPORT SERVICES</b>		
SOFTWARE MAINTENANCE AGREEMENT (LSC-SMA-SP)	PROVIDES COMPATIBILITY TESTING FOR OPERATING SYSTEMS PATCHES, WEB-BROWSER UPDATES, AND QUANTUM SOFTWARE ERRORS. INCLUDES AN ELECTIVE FREE SOFTWARE UPGRADE LICENSE.	
COMMERCIAL SYSTEMS 3-YEAR LIMITED WARRANTY (LSC-62)	COMMERCIAL SYSTEMS 3-YEAR LIMITED WARRANTY - A 3-YEAR WARRANTY PROVIDING 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR COVERAGE WITH A FIRST-AVAILABLE RESPONSE TIME.	
ENHANCED SILVER (LSC-68S)	YEARS 1-2: 100% REPLACEMENT PARTS & 100% LUTRON LABOR COVERAGE WITH A 2-HOUR RESPONSE TIME AND AN ANNUAL (1-DAY) SCHEDULED PREVENTATIVE MAINTENANCE VISIT (GOLD PLAN); YEARS 3-5: 50% PARTS ONLY COVERAGE; YEARS 6-8: 25% PARTS ONLY COVERAGE.	
ENHANCED GOLD (LSC-68G)	YEARS 1-2: 100% REPLACEMENT PARTS & 100% LUTRON LABOR COVERAGE WITH A 2-HOUR RESPONSE TIME AND AN ANNUAL (1-DAY) SCHEDULED PREVENTATIVE MAINTENANCE VISIT (GOLD PLAN); YEARS 3-5: 50% PARTS ONLY COVERAGE; YEARS 6-8: 25% PARTS ONLY COVERAGE.	
ENHANCED PLATINUM (LSC-68P)	YEARS 1-2: 100% REPLACEMENT PARTS & 100% LUTRON LABOR COVERAGE WITH A 24-HOUR RESPONSE TIME AND AN ANNUAL (1-DAY) SCHEDULED PREVENTATIVE MAINTENANCE VISIT (GOLD PLAN); YEARS 3-5: 50% PARTS ONLY COVERAGE; YEARS 6-8: 25% PARTS ONLY COVERAGE.	
SILVER TECHNOLOGY SUPPORT PLAN (LSC-SILV-W)	AN ANNUAL SERVICE PLAN THAT COVERS 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR WITH A FIRST-AVAILABLE ON-SITE OR REMOTE RESPONSE TIME.	
GOLD TECHNOLOGY SUPPORT PLAN (LSC-GOLD-W)	AN ANNUAL SERVICE PLAN THAT COVERS 100% REPLACEMENT PARTS AND 100% LUTRON LABOR WITH A 2-HOUR ON-SITE OR REMOTE RESPONSE TIME. ALSO INCLUDES AN ANNUAL (1-DAY) SCHEDULED PREVENTATIVE MAINTENANCE VISIT EACH YEAR.	
PLATINUM TECHNOLOGY SUPPORT PLAN (LSC-PLAT-W)	AN ANNUAL SERVICE PLAN THAT COVERS 100% REPLACEMENT PARTS AND 100% LUTRON DIAGNOSTIC LABOR WITH A 24-HOUR ON-SITE OR REMOTE RESPONSE TIME. ALSO INCLUDES AN ANNUAL (1-DAY) SCHEDULED PREVENTATIVE MAINTENANCE VISIT EACH YEAR.	
PREVENTIVE MAINTENANCE VISITS (LSC-SCH-MANT)	YEARLY SCHEDULED MAINTENANCE VISIT TO PERFORM PREVENTIVE MAINTENANCE, MINOR PROGRAMMING, AND CONDUCT SYSTEM TRAININGS. QUANTITY IS IN ADDITION TO ANY YEARLY VISITS SPECIFIED WITH AN ENHANCED WARRANTY OR TECHNOLOGY SUPPORT PLAN.	

PLEASE GO TO WWW.LUTRON.COM/SERVICES FOR FURTHER INFORMATION.

**TYPICAL GRAFIK EYE SYSTEM WITH PARTITIONED SPACES**

**CONCEPT DRAWING NOT FOR CONSTRUCTION**

Project Number: #####  
 Drawn By: XXX  
 Drawing Revision: 0  
 Drawing Date: OCTOBER 2016  
 Sheet: 1 OF 1

