TYPICAL ECOSYSTEM LOOP DETAIL

Typical EcoSystem Loop
64 Ballasts/Interfaces Max

INPUT FEED FROM DISTRIBUTION PANEL
ECS Txxxx-J-UNV-x
ECOSYSTEM BALLAST

INPUT FEED FROM DISTRIBUTION PANEL
H3D Txxx-x-x-x-xx
HI-LUME 3D BALLAST

INPUT FEED FROM DISTRIBUTION PANEL
EHD Txxx-x-x-xx
H-SERIES BALLAST

INPUT FEED FROM DISTRIBUTION PANEL
EcoSystem Compact Fluorescent Ballast

INPUT FEED FROM DISTRIBUTION PANEL
LUTRON A-SERIES LED DRIVER 120V/277V

INPUT FEED FROM DISTRIBUTION PANEL
LUTRON S-SERIES LED DRIVER 120V/277V

INPUT FEED
TO 0-10VLED DRIVER (BY OTHERS)
TVI-LMF-2A
ECOSYSTEM TO 0-10V INTERFACE
DIMENSIONS:
4.2"(W) X 3.0"(H) X 1.0"(D)

120V/277V INPUT FEED
TO NON-DIM LOAD
C5-XP2-16A
ECOSYSTEM SWITCHING POWER MODULE FOR NON-DIM LOADS
7.8"(H) X 5"(W) X 2.5"(D)

120V/277V INPUT FEED
ZONE #
PHPM-WBX-DV-WH
120 - 277V
PHASE-ADAPTIVE POWER MODULE WITH FLUORESCENT INPUT
5.1"(H) X 6.3"(W) X 1.6"(D)

120V INPUT FEED
C5-BMJ-16A
ECOSYSTEM DIMMING POWER MODULE FOR 3-WIRE LUTRON DIMMING BALLASTS
7.8"(H) X 5"(W) X 2.5"(D)

TO ECOSYSTEM BALLASTS/MODULES (64 MAX PER LOOP)
ECOSYSTEM DIGITAL LOOP #

TYPICAL POWER MODULES
QUANTITY AND MODEL NUMBERS OF INTERFACES SUBJECT TO CHANGE BASED ON CONTROL TYPE AND TOTAL WATTAGE OF ZONES.

ZONE: (SWITCHED POWER)
(0-10V DIM)
120/277V INPUT FEED
GRX-TVI
0-10V BALLAST INTERFACE
318mm(12.5") (H) x 165mm(6.5") (W) X 84mm(3.3") (D)

120V CONTROL INPUT ONLY
ZONE # FLD
120V/277V INPUT FEED
PHPM-3F-DV-WH
FLUORESCENT POWER MODULE
DIMS 120V OR 277V 3-WIRE FL
ACCEPTS 120V CONTROL SIGNAL ONLY
DIMENSIONS:
5.1"(H) X 6.3"(W) X 1.6"(D)

120V CONTROL INPUT ONLY
ZONE #
120V/277V INPUT FEED
PHPM-PA-DV-WH
PHASE-ADAPTIVE POWER MODULE
DIMS 120V OR 277V LOADS
ACCEPTS 120V CONTROL SIGNAL ONLY
DIMENSIONS:
5.1"(H) X 6.3"(W) X 1.6"(D)

UL924 EMERGENCY COMPLIANCE
(AS REQUIRED, EE TO VERIFY EMERGENCY REQUIREMENTS)

TO NORMAL 3PHASE 4WIRE DISTRIBUTION PANEL
CONTRACTOR TO PROVIDE (1) 3P BREAKER.
5 #12AWG
NORMAL/EMERGENCY INPUT POWER (120 VAC)
PP-120H
POWER SUPPLY
2.33"[59mm] (H) X 3.69"[94mm] (W) X 1.36"[34,5mm] (D)
LUT-ELI-3PH
EMERGENCY LIGHTING INTERFACE
7.75"[197mm] (H) X 4"[102mm] (W) X 2.5"[63,5mm] (D)

UP TO 10 WIRELESS (OF EACH TYPE) PER QSM

PJ2-3BRL-GWG-L01
434 MHZ PICO WIRELESS, LIGHT 3 BUTTON CONTROL WITH RAISE/LOWER SHOWN WITH CW-1-WH
CLARO WALLPLATE
PICO DIMENSIONS:
2.61"[66,3mm] (H) X 1.28"[32,5mm] (W) X 0.37"[9,4mm] (D)
W/WALLPLATE:
4.69"[119mm] (H) X 2.94"[74,7mm] (W) X 0.37"[9,4mm] (D)
*SEE SPECIFICATION SHEET FOR MOUNTING INSTRUCTIONS
LOCATION TBD

LRF2-OCR2B-P-WH
434MHZ WIRELESS
OCCUPANCY/VACANCY SENSOR
3.57"[90,7mm] (DIA) X 1.13"[28,7mm] (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD
(OPTION WITH L-CRMK-WH RECESS MOUNT KIT FOR NON-METALLIC CEILINGS)

UP TO 10 WIRELESS (IN ANY COMBINATION) PER QSM

LRF2-DCRB-WH
434MHZ WIRELESS
DAYLIGHT SENSOR
1.6"[40,6mm] (DIA) X 0.7"[17,8mm] (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD

LRF2-SSM-WH
434MHZ WIRELESS
RADIO WINDOW SENSOR
1.6"(40,6mm) (DIA) X 0.7"(17,8mm) (D)
*DEVICE IS MULLION-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD

LRF2-SSW-WH
434MHZ WIRELESS
RADIO WINDOW SENSOR
1.6"(40,6mm) (DIA) X 0.7"(17,8mm) (D)
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD

TYPICAL OF X
SEE SPECIFICATION SHEET FOR WIRED DEVICE LIMITS PER QSM AND ESN

ALTERNATE MODELS AVAILABLE, SEE SPECIFICATION SHEET FOR OPTIONS

EC-DIR-WH
FIXTURE MOUNTABLE DAYLIGHT SENSOR W/ IR RECEIVER
(1 MAX PER BALLAST/MODULE)
1.18"[30mm] DIA.
LOCATION TBD

LOS-xxx-xxxx-WH
CEILING MOUNT OCCUPANCY SENSOR
DIMENSIONS:
4.5"[114mm] (DIA) X 1.4"[35.6mm] (D)
LOCATION TBD

PX-3BRL-GWG-L01
PICO WIRED
3 BUTTON CONTROL WITH RAISE/LOWER SHOWN WITH CW-1-WH
CLARO WALLPLATE
PICO DIMENSIONS:
2.61"[66,3mm] (H) X 1.28"[32,5mm] (W) X 0.37"[9,4mm] (D)
W/WALLPLATE:
4.69"[119mm] (H) X 2.94"[74,7mm] (W) X 0.37"[9,4mm] (D)
*SEE SPECIFICATION SHEET FOR MOUNTING INSTRUCTIONS
LOCATION TBD

LRF2-VCR2B-P-WH
434MHZ WIRELESS
VACANCY SENSOR
3.57"[90,7mm] (DIA) X 1.13"[28,7mm] (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD
(OPTION WITH L-CRMK-WH RECESS MOUNT KIT FOR NON-METALLIC CEILINGS)

ECOSYSTEM DIGITAL LOOP # ◇ TO ECOSYSTEM BALLASTS/MODULES (64 MAX PER LOOP)

QSGRJ-4E-TWH
(# OF QS ZONES: 6)
FUNCTION: SCENES 1-4 & OFF WITH (1) ECOSYSTEM BUS
(4 GANG US BACKBOX BY OTHERS)
LOCATION TBD

TYPICAL WALL CONTROL (OTHER CONFIGURATIONS AVAILABLE)
QSWS2-5BRLN-WH
FUNCTION: 5-BUTTON SCENE SELECT WITH RAISE/LOWER
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD

ECOSYSTEM DIGITAL LOOP # ◇ TO ECOSYSTEM BALLASTS/MODULES (64 MAX PER LOOP)
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120V, 20A DEDICATED NORMAL/EMERGENCY INPUT FEED

ECOSYSTEM LOOP #1 ◇ 64 BALLASTS/INTERFACES MAX
ECOSYSTEM LOOP #2 ◇ 64 BALLASTS/INTERFACES MAX
ECOSYSTEM LOOP #3 ◇ 64 BALLASTS/INTERFACES MAX
ECOSYSTEM LOOP #4 ◇ 64 BALLASTS/INTERFACES MAX

TO NEXT PANEL
TO NETWORK (QS-EO OR QS-LO)

LINK: B (QS LINK-99 DEVICES MAX)
LINK: C (PANEL LINK-32 CIRCUIT SELECTORS MAX)
LINK: D (CONFIGURABLE LINK)

QP2-1P4CSE-120
QUANTUM LIGHT MANAGEMENT HUB CONTAINING (4) ECOSYSTEM LOOPS
(1) QUANTUM PROCESSORS
(1) CONFIGURABLE LINK, AND
(1) 5-PORT ETHERNET SWITCH
31.5"[800mm] (H) X 15.8"[401mm] (W) X 5.8"[147mm] (D)
LOCATION TBD

TYPICAL WALL CONTROL (OTHER CONFIGURATIONS AVAILABLE)
QSWS2-5BRLN-WH
FUNCTION: 5-BUTTON SCENE SELECT WITH RAISE/LOWER
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD

QSN2-4W-C
QUANTUM SENSOR MODULE (QSM) WITH (4) UNIVERSAL WIRED INPUTS AND 434MHZ WIRELESS RECEIVER
60'(18.29m] RADIUS RF COVERAGE (30'[9.14m] THROUGH WALLS)
4.04"[102.6mm] (DIA) X 1.17"[29.7mm] (D)
LOCATION TBD

ECOSYSTEM DIGITAL LOOP #1 ◇ TO ECOSYSTEM BALLASTS/MODULES (64 MAX PER LOOP)
ECOSYSTEM DIGITAL LOOP #2 ◇ TO ECOSYSTEM BALLASTS/MODULES (64 MAX PER LOOP)
ZONE X
120V/277V INPUT FEED
120V/277V POWER FOR ESN

QSN-4S16-S
ENERGI SAVR NODE QS (ESN) WITH (4) SWITCHED OUTPUTS AND (1) QS COMMUNICATION LINK
13.25"[336,7mm] (H) X 9.25"[235mm] (W) X 3.16"[80,3mm] (D)
LOCATION TBD

QSN-2ECO-S
ENERGI SAVR NODE QS (ESN)
(2) ECOSYSTEM DIGITAL LINKS AND (1) QS COMMUNICATION LINK
13.25"[336,7mm] (H) X 9.25"[235mm] (W) X 3.16"[80,3mm] (D)
LOCATION TBD

ZONE X
120V/277V INPUT FEED
120V/277V POWER FOR ESN

QSN-4T16-S
ENERGI SAVR NODE QS (ESN)
WITH (4) SWITCHED OUTPUTS,
(4) 0-10V CHANNELS, AND
(1) QS COMMUNICATIONS LINK
13.25"[336,7mm] (H) X 9.25"[235mm] (W) X 3.16"[80,3mm] (D)
LOCATION TBD

TYPICAL PARTITION CONTROL
GRX-12VDC POWER SUPPLY (PLUGS INTO DUPLEX RECEPTACLE)
GRX-IRPS-WH INFRARED PARTITION SWITCH
QSE-IO CONTACT-CLOSURE INTERFACE
LOCATION TBD

OPTIONAL IPAD CONTROL

CORPORATE WIRELESS NETWORK (BY OTHERS)
INSTALLING CONTRACTOR TO COORDINATE ALL NETWORK CONNECTIONS AND COMMUNICATION REQUIREMENTS WITH IT CONTRACTOR AND OWNER
(LUTRON Q-CONTROL + APPLICATION AVAILABLE FOR CLIENT DOWNLOAD)

APPLE IPAD (BY OTHERS)
W/ LUTRON Q-CONTROL + APPLICATION
(AVAILABLE FOR CLIENT DOWNLOAD FOR FREE AT ITUNES)

REQUIRES MOBILE CONTROL AND PROGRAMMING SOFTWARE LICENSE (QSW-MC-PS-A)
(1) LICENSE REQUIRED PER IPAD

QS-EO:
QUANTUM LOCAL AREA NETWORK SHARED INTRANET. THE QUANTUM INTER-PROCESSOR AND COMPUTER (SERVER / DESKTOP OR LAPTOP) NETWORK MAY BE CONNECTED THROUGH A SHARED INTRANET. THE QUANTUM COMPUTER MAY OR MAY NOT BE SUPPLIED BY LUTRON AND NODES ON LAN ARE NOT LIMITED TO LUTRON QUANTUM PROCESSOR AND LUTRON QUANTUM COMPUTER. ALL NETWORK EQUIPMENT INCLUDING ROUTERS, SWITCHES, AND NETWORK CABLES ARE SUPPLIED BY OTHERS AND MUST ADHERE TO LUTRON SPECIFICATIONS. THE SHARED INTRANET MUST BE ABLE TO PASS UDP MULTICAST TRAFFIC. ALL NETWORK ARCHITECTURE AND SETUP MUST BE COORDINATED THROUGH THE END USERS INFORMATION TECHNOLOGY GROUP OR CONSULTANT AND MAY REQUIRE ADDITIONAL STARTUP TIME AND EXPENSE.

DEDICATED ETHERNET ENVIRONMENT
TO DUPLEX RECEPTACLE BY OTHERS
UPS UNINTERRUPTIBLE POWER SUPPLY BY LUTRON
QS-A-CMP-S/R
QUANTUM LIGHTING MANAGEMENT SYSTEM DEDICATED SERVER. TOWER CASE OR RACK MOUNT CAN BE PROVIDED. CUSTOMER PROVIDED SERVER MUST MEET SPECIFICATION DETAILED IN QS-A-CMP-BO-0 SPEC SHEET. TO BE LOCATED IN CUSTOMERS CORPORATE DATA CENTER INSTALLATION TO MEET SPECIFICATIONS AND REQUIREMENTS IN QS-A-CMP-R-0 SPEC SHEET.

TO BACNET BUILDING MANAGEMENT NETWORK (BY OTHERS)

TYPICAL GATEWAYS AS REQUIRED

TO ADDITIONAL QS DEVICES (MAX OF 99 DEVICES / QS LINK)

TO DMX EQUIPMENT BY OTHERS
QSE-CI-DMX
DMX CONTROL INTERFACE
LOCATION TBD

TO PC OR DIGITAL AV EQUIPMENT BY OTHERS
OR
TO PC OR DIGITAL AV EQUIPMENT BY OTHERS MAXIMUM OF 2 TELNET CONNECTIONS TO EACH INTERFACE VIA ETHERNET
QSE-CI-NWK-E
ETHERNET TCP/IP COMMUNICATION INTERFACE
LOCATION TBD

TO EQUIPMENT BY OTHERS
QSE-IO
CONTACT-CLOSURE INTERFACE
LOCATION TBD

TYPICAL POWER SUPPLIES AS REQUIRED

TO QS DEVICES AND/OR QS SHADES ONLY (UP TO 10)
120 VOLT 20A DEDICATED CONTROL FEED
QSPS-P1-10-60
SIVOIA QS POWER PANEL
18.3"[465mm] (H) X 10.3"[262mm] (W) X 4"[102mm] (D)
LOCATION TBD

120V INPUT FEED
QSPS-J-1-50
QS J-BOX MOUNT LINK POWER SUPPLY
4.3"[109mm] (H) X 3.38"[86mm] (W) X 1.4"[35.5mm] (D)
LOCATION TBD

24V
COMMON
STEP-PS24DC/3.8-CPN5500
QS LINK POWER SUPPLY
DIMENSIONS:
5.9"[150mm] (H) x 3.5"[89mm] (W) x 2.4"[61mm] (D)
LUT-BX8-ENC
LUTRON 8"x8" ENCLOSURE
DIMENSIONS:
8"[203mm] (H) x 8" [203mm] (W) x 4"[102mm] (D)
LOCATION TBD

TYPICAL PANELS SHOWN
(OTHER CONFIGURATIONS AVAILABLE)

REFER TO LOAD SCHEDULE SHEET FOR FEEDER INFORMATION
CONTROL FEED REFER TO CONTROL CKT. NOTE
XP SOFTSWITCH PANEL
STANDARD DIMENSIONS:
59"[1499mm] (H) X 16"[406mm] (W) X 4"[102mm] (D)
LOCATION TBD

REFER TO LOAD SCHEDULE SHEET FOR FEEDER INFORMATION
GP DIMMER PANEL
DIMENSIONS:
37"[940mm] (H) X 20"[711mm] (W) X 12"[305mm] (D)
LOCATION TBD

REFER TO LOAD SCHEDULE SHEET FOR FEEDER INFORMATION
LP DIMMER PANEL
DIMENSIONS:
59"[1499mm] (H) X 15"[381mm] (W) X 4"[102mm] (D)
LOCATION TBD

REFER TO LOAD SCHEDULE SHEET FOR FEEDER INFORMATION
CCP DIMMER PANEL
DIMENSIONS:
59"[1499mm] (H) X 15"[381mm] (W) X 4"[102mm] (D)
LOCATION TBD

TO ADD'L QUANTUM PANELS (MAX OF 32 CIRCUIT SELECTORS / PANEL LINK)

CONTROL CIRCUIT NOTE:
- SUPPLIES POWER FOR INTERNAL OPERATION.
- LUTRON RECOMMENDS A DEDICATED 120V OR 277V, 20A 1 PHASE 2 WIRE FEED TO POWER THE CONTROL CIRCUIT IN THE PANEL.
- IF THE CONTROL CIRCUIT IS TAPPED FROM A CIRCUIT THAT POWERS A RELAY IN THE PANEL, IT DRAWS A MAXIMUM OF 1.5A TOWARD THE TOTAL LOAD FOR THAT CIRCUIT.

TYPICAL MULTI-SHADE DRIVES

120 VOLT 20A DEDICATED CONTROL FEED
TO QS DEVICES AND/OR QS SHADES ONLY (UP TO 10)
QSPS-P1-10-60
SIVOIA QS POWER PANEL
18.3"[465mm] (H) X 10.3"[262mm] (W) X 4"[102mm] (D)
LOCATION TBD
QS LINK
QSWS2-3BN-WH
3-BUTTON/3-BUTTON WALLSTATION
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD

SIVOIA QS EDU ELECTRONIC DRIVE UNIT

ALTERNATE FOR QUANTUM LIGHTING MANAGEMENT SYSTEM CONTROL

DEDICATED ETHERNET ENVIRONMENT
QS-A-CMP-L-O
LAPTOP COMPUTER

OPTIONAL GREEN GLANCE

TO QUANTUM SERVER OR LIGHTING MANAGEMENT NETWORK SWITCH
DVI DIGITAL SIGNAL
QS-A-CMP-D-0
GREEN GLANCE CLIENT PC (CUSTOMER SUPPLIED PC MUST MEET MINIMUM SPECIFICATION OF MODEL QS-A-CMP-DB0-0)
LOCATION TBD
USER-SUPPLIED GREEN GLANCE DISPLAY (MINIMUM RESOLUTION 1024 X 768)

ALTERNATIVE OCCUPANCY/VACANCY SENSORS FOR SPECIFIC APPLICATIONS

LRF2-OCR2B-P-WH
434MHZ WIRELESS
OCCUPANCY/VACANCY SENSOR
3.57"[90,7mm] (DIA) X 1.13"[28,7mm] (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD
(OPTION WITH L-CRMK-WH RECESS MOUNT KIT FOR NON-METALLIC CEILINGS)

LRF2-OWLB-P-WH
434MHZ WIRELESS
OCCUPANCY/VACANCY SENSOR
90° COVERAGE
4.35"[110mm] (H) X 1.87"[46mm] (W) X 1.35"[34mm] (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD

LRF2-OWLB-P-WH
434MHZ WIRELESS
WALL MOUNTED
OCCUPANCY/VACANCY SENSOR
180° COVERAGE
4.35"[110mm] (H) X 1.87"[46mm] (W) X 1.35"[34mm] (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD

LRF2-DCRB-WH
434MHZ WIRELESS
DAYLIGHT SENSOR
1.6"(40,6mm) (DIA) X 0.7"(17,8mm) (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD

LRF2-VCR2B-P-WH
434MHZ WIRELESS
VACANCY SENSOR
3.57"[90,7mm] (DIA) X 1.13"[28,7mm] (D)
MAX 10 PER QSM
*DEVICE IS SURFACE-MOUNTED AND BATTERY POWERED, DOES NOT REQUIRE POWER FEED
LOCATION TBD
(OPTION WITH L-CRMK-WH RECESS MOUNT KIT FOR NON-METALLIC CEILINGS)

TO ADDITIONAL ENERGI SAVR NODES & SENSOR MODULES

QSM2-4W-C
QUANTUM SENSOR MODULE (QSM) WITH (4) UNIVERSAL WIRED INPUTS AND 434MHZ WIRELESS RECEIVER
60'(18.29m] RADIUS RF COVERAGE
(30'[9.14m] THROUGH WALLS)
4.04"[102.6mm] (DIA) X 1.17"[29.7mm] (D)
LOCATION TBD

TO ADDITIONAL ENERGI SAVR NODES & SENSOR MODULES

QSM RULES
- 4 WIRED DEVICES MAX (OF ANY COMBINATION)
- 10 WIRELESS OCCUPANCY SENSORS
- 10 WIRELESS DAYLIGHT SENSORS
- 10 WIRELESS PICOS

WIRING LEGEND:

△Q QS CONTROL LINK (SEE WIRE DESCRIPTION BELOW)
▲Q 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 (153 m)	POWER (TERMINALS 1&2): 1 PAIR 18 AWG (1.0 mm²)		GRX-CBL-346S OR GRX-PCBL-346S
	DATA (TERMINALS 3&4): 1 PAIR 22 AWG (0.5 mm²), TWISTED AND SHIELDED*		
500ft (153 m) TO 2,000ft (600 m)**	POWER (TERMINALS 1&2): 1 PAIR 12 AWG (4 mm²)		GRX-CBL-46L OR GRX-PCBL-46L
	DATA (TERMINALS 3&4): 1 PAIR 22 AWG (0.5 mm²), TWISTED AND SHIELDED*		

*ALTERNATE DATA ONLY CABLE: USE APPROVED DATA LINK CABLE (22 AWG [0.5 mm²] TWISTED/SHIELDED) FROM BELDEN (MODEL # 9461).

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

□ INPUT POWER (NORMAL)
● 2 #12AWG (4 mm²)
○ 3 #12AWG (4 mm²)
◆ 0-10V SIGNAL: 2 #18AWG (1.0 mm²)
●● 2 #18AWG (1.0 mm²)
○○ 3 #18AWG (1.0 mm²)
⧖ LUTRON SENSOR CABLE C-CBL-522S OTHERWISE USE 3 #18 AWG (1.0 mm²)
⧗ LUTRON SENSOR CABLE C-CBL-522S OTHERWISE USE 4 #18 AWG (1.0 mm²)
E CAT5E OR BETTER CABLE FOR LUTRON NETWORK TERMINATED WITH RJ45 CONNECTORS (TO BE PROVIDED BY OTHERS). 328 ft (100 m) MAXIMUM RUN.
D DMX CONTROL
◇ ECOSYSTEM BUS/LOOP: LUTRON CABLE C-CBL-216-GR-1 (2 #16 CONDUCTOR NON-PLENUM) OR C-PCBL-216-CL-1 (2 #16 CONDUCTOR PLENUM RATED). OTHERWISE USE 2 #16 AWG (1.5 mm²) BY OTHERS.
1-WAY RF COMMUNICATION
2-WAY RF COMMUNICATION

◁S

QS SMART PANEL POWER SUPPLY (QSPS-PX-10-60) SHADE WIRING GUIDE			
MAXIMUM DEVICES PER ONE OUTPUT		MAXIMUM DISTANCE PER ONE OUTPUT BASED ON WIRE GUAGE	
SHADES + CONTROLS	UP TO 1 POWER DRAW UNIT	12 AWG (4 mm²) GRX-CBL-L-500 QSH-CBLP-L-500	16 AWG (1.5 mm²) GSH-CBL-M-500 QSH-CBLP-M-500
			18 AWG (1.0 mm²) GRX-CBL-3465-500
1 SIVOIA QS SHADE OR DRAPERY		500 ft (150 m)	200 ft (60 m)
2 SIVOIA QS ROLLER 64™, 4.20 lft² (1.8 m²) EACH		200 ft (60 m)	75 ft (23 m)
3 SIVOIA QS ROLLER 64™, 4.20 lft² (1.8 m²) EACH			50 ft (15 m)
2 SIVOIA QS ROLLER 100™, 8.50 lft² (4.6 m²) EACH			
QS INDIVIDUAL POWER SUPPLY (QSPS-P1-10) OR QSPS-J-1-50) SHADE WIRING GUIDE			
MAXIMUM DEVICES PER ONE OUTPUT		MAXIMUM DISTANCE PER ONE OUTPUT BASED ON WIRE GUAGE	
SHADES + CONTROLS	UP TO 1 POWER DRAW UNIT	12 AWG (4 mm²) GRX-CBL-L-500 QSH-CBLP-L-500	16 AWG (1.5 mm²) GSH-CBL-M-500 QSH-CBLP-M-500
			18 AWG (1.0 mm²) GRX-CBL-3465-500
1 SIVOIA QS SHADE OR DRAPERY		250 ft (75 m)	100 ft (30 m)	50 ft (15 m)

▽P PANEL LINK (SEE WIRE DESCRIPTION BELOW)
▼P PANEL LINK (SEE WIRE DESCRIPTION BELOW) (CONNECT WIRES 1, 2, 3 AND 4. DO NOT CONNECT WIRE # 5)

LUTRON CABLE GRX-CBL-46L (5 CONDUCTOR NON-PLENUM) OR GRX-PCBL-46L (5 CONDUCTOR PLENUM RATED). OTHERWISE USE 2 #12 AWG (4 mm²), 1 BELDEN #9461 AND BETWEEN PANELS ADD 1 #18 AWG (1.0 mm²) FOR EMERGENCY SENSING CABLE BY OTHERS.

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).

ECOSYSTEM BUS/LOOP RULES:
THE FOLLOWING LOOP RULES MUST BE OBSERVED FOR PROPER OPERATION:

- THIS IS TOPOLOGY-FREE AND POLARITY FREE WIRING (T-TAP, HOME-RUN, ETC. IS OK).
- KEEP ALL THE BALLASTS/MODULES IN ONE ROOM ON THE SAME LOOP WHENEVER POSSIBLE.
- WIRE DAYLIGHT SENSORS, OCCUPANCY SENSORS AND PERSONAL CONTROLS TO THE CLOSEST ECOSYSTEM BALLAST/ SENSOR MODULE IN THE SAME ROOM.
- ECOSYSTEM LOOPS ARE SHOWN ON THE LIGHTING PLANS. IF THERE IS A DISCREPANCY, AND ROOMS ARE WIRED TO A DIFFERENT LOOP THAN THE ONE SHOWN, LUTRON NEEDS TO BE NOTIFIED. THIS INFORMATION IS IMPORTANT FOR PROGRAMMING THE SYSTEM.
- UP TO 64 BALLASTS/MODULES PER ECOSYSTEM LOOP
- UP TO 64 IR CONTROLS PER LOOP
- UP TO 16 DAYLIGHT SENSORS PER LOOP
- UP TO 32 OCCUPANT SENSORS PER LOOP

PANEL LINK RULES:
THE FOLLOWING LINK RULES MUST BE OBSERVED FOR PROPER OPERATION:

- PANELS ARE DAISY-CHAINED ON ONE OF THE CONFIGURABLE LINKS PER LUTRON'S DRAWING, HOWEVER THEY DO NOT HAVE TO BE IN THE ORDER SHOWN.
- DO NOT HOME-RUN OR T-TAP THIS WIRING LINK. ALL CIRCUITS NEED TO BE LANDED IN THESE PANELS PER LUTRON'S PANEL SCHEDULES.
- THE MAXIMUM WIRE LENGTH OF A PANEL LINK IS 2,000 ft (600 m). A MX-RPTR IS USED TO EXTEND THE LENGTH OF A LINK ANOTHER 2,000 ft (600 m). A MAXIMUM OF (3) MX-RPTRS MAY BE USED PER LINK FOR MAXIMUM LENGTH OF 8,000 ft (2,430 m) PER LINK.
- IF A PANEL IS MOVED TO ANOTHER LINK, OR THE LOADS ARE NOT WIRED AS SHOWN IN LUTRON PANEL SCHEDULES, LUTRON MUST BE NOTIFIED. THIS INFORMATION IS IMPORTANT FOR PROGRAMMING THE SYSTEM.
- UP TO 32 CIRCUIT SELECTORS PER LINK
- UP TO 512 SWITCH LEGS OR ZONES PER LINK
- LT-1 LINK TERMINATORS NEEDED ON EACH END OF THE LINK

QUANTUM NETWORK

WHEN A LIGHTING MANAGEMENT NETWORK (LMN) IS REQUIRED TO ENABLE COMMUNICATIONS BETWEEN INDIVIDUAL LIGHT MANAGEMENT HUBS (LMH) AND BETWEEN LMH AND THE SYSTEM SERVER/DESKTOP/LAPTOP (Q-MANAGER), THE LMN REQUIRES A DEDICATED LAN OR VLAN. IT IS THE RESPONSIBILITY OF THE NETWORK PROVIDER TO ENSURE THE RELIABILITY AND SECURITY OF THE LMN.

CAT5E OR BETTER ETHERNET CABLE TO BE RUN FOR DEDICATED LMN TERMINATED WITH RJ45 CONNECTORS (PROVIDED BY OTHERS). THE NUMBER OF ETHERNET HOPS/SEGMENTS BETWEEN THE SERVER/DESKTOP/LAPTOP (Q-MANAGER) AND ANY LMN NODE SHALL NOT EXCEED 6. TOTAL LENGTH OF ETHERNET CABLE SHALL NOT EXCEED 328 FT (100M) POINT-TO-POINT.

IF LONGER RUNS ARE REQUIRED, MULTI-MODE FIBER OPTIC CABLE CAN BE USED INSTEAD WITH APPROPRIATE FIBER OPTIC CONNECTORS (PROVIDED BY OTHERS). CONSULT WITH NETWORK PROVIDER FOR STANDARD ETHERNET AND FIBER OPTIC WIRING RULES FOR DISTANCE AND SEPARATION AS WELL AS FOR PLACEMENT OF SWITCHES, ROUTERS, HUBS, ETC.

FOR MORE INFORMATION REGARDING NETWORK EQUIPMENT REQUIREMENTS AND NETWORK CONFIGURATION, PLEASE REFER TO THE QUANTUM LIGHTING MANAGEMENT NETWORK SPECIFICATION SHEET OR CONTACT LUTRON.

TYPICAL SINGLE-SHADE DRIVES

SIVOIA QS EDU ELECTRONIC DRIVE UNIT
120V INPUT FEED
QS LINK
QSWS2-3BN-WH
3-BUTTON, SCENE SELECT
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD
QSPS-J-1-50
QS J-BOX MOUNT LINK POWER SUPPLY
4.3"[109mm] (H) X 3.38"[86mm] (W) X 1.4"[35.5mm] (D)
LOCATION TBD

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-LEDS 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 LEDS@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.

TYPICAL QUANTUM ONE-LINE

CONCEPT DRAWING NOT FOR CONSTRUCTION

Project Number:	N/A
Drawn By:	MLH
Drawing Revision:	1
Drawing Date:	10.22.14
Sheet:	1 OF 1

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