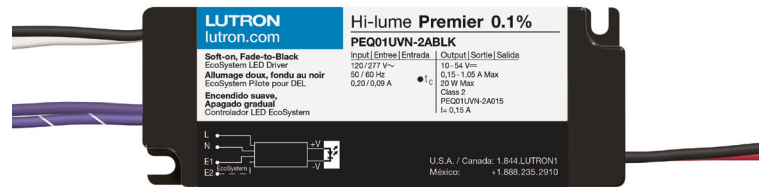


Hi-lume Premier 0.1% EcoSystem LED Driver

Hi-lume Premier 0.1% EcoSystem LED Drivers provide a high-performance solution for any space, in any application. They provide smooth, continuous dimming down to 0.1% of full output current, and fade smoothly between 0% and 0.1% with Soft-on, Fade-to-Black.

Features

- Soft-on, Fade-to-Black: fades smoothly between 0% and 0.1% when turned on and off for an incandescent-like experience.
- Continuous, flicker-free dimming from 100% to 0.1%¹.
- Dimming Method:
 - Constant-current reduction dimming provides video-friendly performance down to 0.1%.
 - Meets IEEE 1789 over entire dimming range.
- Hi-lume 1% EcoSystem with Soft-on, Fade-to-Black models also available for dimming from 100% to 1%.
- Guaranteed dimming performance when used with Lutron controls:
 - HomeWorks QS, Energi Savr Node units with EcoSystem controls, GRAFIK Eye QS with EcoSystem controls, PowPak with EcoSystem dimming modules, PowPak with EcoSystem wireless fixture controls, and Quantum systems, allowing for integration into a planned or existing EcoSystem lighting control solution.
- QwikFig compatible models available, see **How to Build a Model Number** page for details. For more information, please refer to the QwikFig User Guide (Lutron P/N 041473) or contact your Lutron sales representative.
- Protected from miswires of input power to EcoSystem control inputs up to 277 V~.
- Rated lifetime of 50,000 hours at 80 °C (176 °F) calibration point (t_0).
- FCC Part 15 Class A
- 100% performance tested at factory before shipping.
- RoHS compliant.
- Non-volatile memory restores all settings after power failure.
- For more information, visit www.lutron.com



Case type V

1.60 in (40.64 mm) W x 1.07 in (27.18 mm) H x 4.30 in (109.22 mm) L

EcoSystem Features

- Simpler to wire and more reliable than 0–10 V_{DC}.
- Guarantees compatibility between Lutron controls, LED drivers, ballasts, and sensors.
- Accommodates zone and control changes without rewiring.
- Connect to Lutron Vive and Quantum Total Light Management Systems to monitor lighting power consumption.
- Polarity-free and topology-free.
- Digital EcoSystem intelligence allows easy code compliance.
- Digital EcoSystem control link can be Class 1 or Class 2.

¹ Light output at low-end depends on the efficacy of the LED light engine used with the driver.

Job Name:

Model Numbers:

Job Number:

Specifications

Regulatory Approvals and Compliance

- UL Listed Class P
- NOM certified for Mexico
- Lutron Quality Systems registered to ISO 9001.2015
- Manufacturing facilities employ ESD reduction practices that comply with the requirements of ANSI/ESD S20.20
- Inrush current less than NEMA 410-2011 limit
- FCC Part 15 Class A
- Canadian EMI Class A Compliance Equivalent: CAN ICES-005(A)/NMB-005(A)
- Meets UL® 8750, "Light Emitting Diode (LED) Equipment For Use in Lighting Products"
- Class 2 output

ENERGY STAR® Luminaires V2.0 Specification

- LED drivers need to meet certain performance criteria in order for the completed luminaires to comply with the ENERGY STAR® Luminaires V2.0 Specification.
- PEQ1 and PEQ0 models meet performance criteria at 120 V \sim input and when driver output power exceeds 5 W
- PEQ1 and PEQ0 models meet performance criteria at 277 V \sim input and when driver output power exceeds 13 W

Title 24

- LED drivers need to meet certain performance criteria in order for the completed luminaires to comply with Title 24 requirements as detailed in Reference Joint Appendix JA8
- PEQ1 and PEQ0 models meet performance criteria at 120 V \sim input and when driver output power exceeds 10 W
- Consult CEC-400-2015-032-CMF Section 6.2.7 for important information on meeting start-up time requirements with fade-in lighting

Performance

- Soft-on, Fade-to-Black: fades smoothly between 0% and 0.1% when turned on and off for an incandescent-like experience
- Dimming Range: 100% to 0.1%¹
- Operating Voltage: 120 V \sim / 277 V \sim at 50/60 Hz
- Lifetime: 50,000 hours when calibration point (t_c) at 80 °C (176 °F)²
- For rated warranty, t_c not to exceed 80 °C (176 °F) (maximum rated temperature)²
- Patented thermal foldback protection
- At turn on, lighting fades smoothly to the desired level without decreasing or flashing to full brightness
- Non-volatile memory restores all driver settings after power failure
- Typical standby power consumption: < 0.5 W at 120 V \sim / 277 V \sim
- Open-circuit protected output
- Short-circuit protected output

ENERGY STAR is a registered trademark of the U.S. Environmental Protection Agency

Job Name:

Model Numbers:

Job Number:

Specifications (continued)

Environmental

- Sound rated: Class A inaudible in 24 dBA ambient
- Relative Humidity: maximum 90% non-condensing
- Minimum Operating Ambient Temperature:
 $t_a = 0\text{ }^{\circ}\text{C}$ (32 $^{\circ}\text{F}$)³
- Indoor use only
- Rated for dry and damp locations

Driver Wiring and Mounting

- Fixture must be grounded in accordance with local and national electrical codes
- Includes 6 in (152 mm) leads of stranded 18 AWG (0.75 mm²), 600 V~ and 105 $^{\circ}\text{C}$ (221 $^{\circ}\text{F}$) rated. Stripped to 0.5 in (12.7 mm)
- Maximum driver-to-LED light engine wire length for:

Wire Gauge	Maximum Lead Length		
	150 mA to 700 mA	710 mA to 1.50 A	1.51 A to 2.10 A
18 AWG (0.75 mm ²)	30 ft (9 m)	15 ft (4.5 m)	10 ft (3 m)
16 AWG (1.5 mm ²)	35 ft (10.5 m)	25 ft (7.5 m)	15 ft (4.5 m)
14 AWG (2.5 mm ²)	50 ft (15 m)	40 ft (12 m)	25 ft (7.5 m)
12 AWG (4.0 mm ²)	100 ft (30 m)	60 ft (18 m)	40 ft (12 m)

¹ Light output at low-end depends on the efficacy of the LED light engine used with the driver.

² To maintain warranty, installer is responsible for ensuring that the driver calibration point does not exceed 80 $^{\circ}\text{C}$ (176 $^{\circ}\text{F}$).

³ Where t_a is the temperature of the air directly surrounding the driver.

Job Name:

Model Numbers:

Job Number:

How to Determine Compatibility Between an LED Driver and LED Load

1. Review the specifications of the LED load.
2. Identify the minimum and maximum operating voltage of the LED load at the desired operating current. This “current” will be the rated output current of the LED driver. Consult the LED load manufacturer for any questions.

Example: An LED load that is rated at 0.7 A and 30 V nominally, has an input (forward) voltage range of 25–35 V (at 0.7 A) due to unit-to-unit variation, temperature, etc.

3. Examine the **LED Driver Load Compatibility** graphs below for each output range to ensure that the voltage range of the LED load is within the load compatibility range.

Example: Lines marked below indicate two load specifications:

Load A (25 – 35 V) at 0.5 A

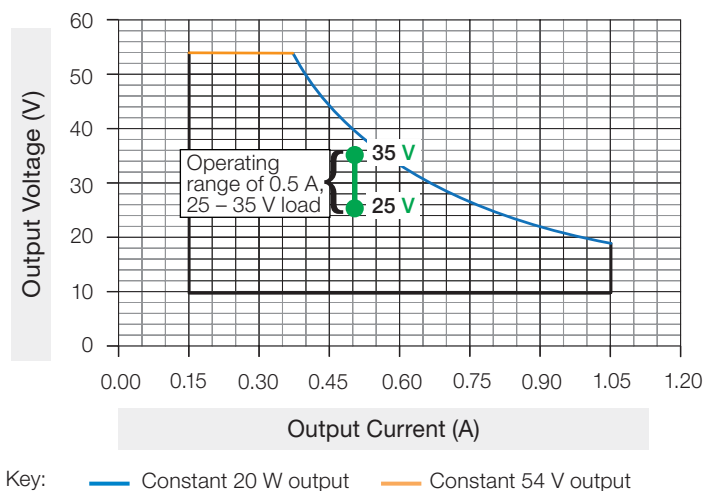
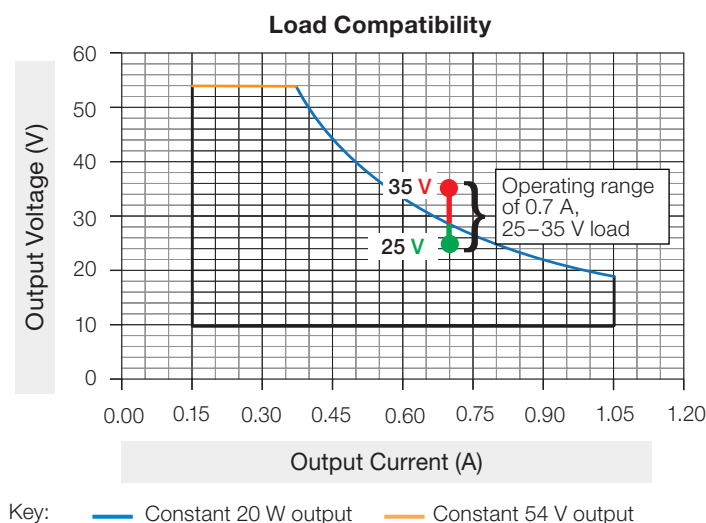
Load B (25 – 35 V) at 0.7 A

Load B (Not Compatible) ❌

Since the maximum voltage of the load, 35 V, exceeds the 28.5 V allowable at 0.7 A, this combination of LED load and LED driver is not compatible.

Load A (Compatible) ✅

Operating voltage range for load A is 25 – 35 V at 0.5 A. Since the load specifications are within the operating range, the combination of LED Load and LED Driver is compatible.



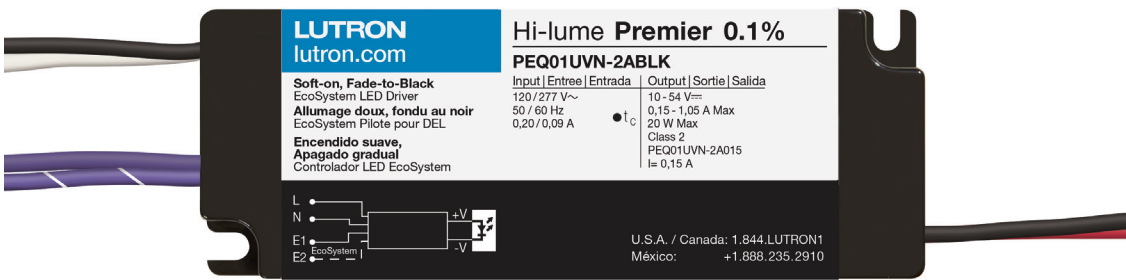
4. The [LED Driver Selection Tool](#) is a website compatibility tool that allows for a fast compatibility search of all Lutron LED Drivers that are compatible with an LED Load.
5. See **How to Build A Model Number** to create the appropriate model number for the desired driver. If a QwikFig compatible driver is needed, identify the proper **LED Load Output Range** (voltage and current) and insert “BLK” in the **Current Level (for Constant Current)** section of the model number.

Job Name:

Model Numbers:

Job Number:

How to Build a Model Number, V-Case Type (“BLK” models for use with Lutron QwikFig technology): Hi-lume Premier 0.1% EcoSystem LED Driver with Soft-On, Fade-to-Black



V-case type

PEQ 1 UVN – A

Dimming Performance

- 0: select for Hi-lume Premier 0.1%
- 1: select for Hi-lume 1%

LED Load Output Range: Class 2 Constant Current

(see the following pages for more detail)

- 2: 20 W Max, 0.15 - 1.05 A, 10 – 54 V==*

Example: PEQ**0**1UVN-**2A040**

- 0.40 A
- Hi-lume Premier 0.1%
- 4 – 20 W**
- 10 – 50 V==

For further assistance in selecting your model number, contact our LED Center of Excellence at **LEDs@lutron.com**

** At 0.40 A, maximum voltage of 50 V provides 20 W (0.40 A × 50 V = 20 W)

Current Level (for Constant-Current)

- 015 = 0.15 A
- 105 = 1.05 A
- BLK = QwikFig compatible bulk

Option 1: Order a driver configured by Lutron to a desired output current.

Example: PEQ01UVN-2A040 has been pre-configured at Lutron to an output of 0.40 A. Refer to the example above.


Option 2: Order a QwikFig compatible driver.

Example: PEQ01UVN-2ABLK (0.15 – 1.05 A)*

Note: Default set to minimum output current for the respective **LED Load Output Range**.

* Output voltage range changes with output current and according to power limits. Check driver specifications on the following pages carefully to understand output voltage range of a particular SKU. Purchaser is responsible for electrical compatibility between LED driver and LED load.

"2" Output Range

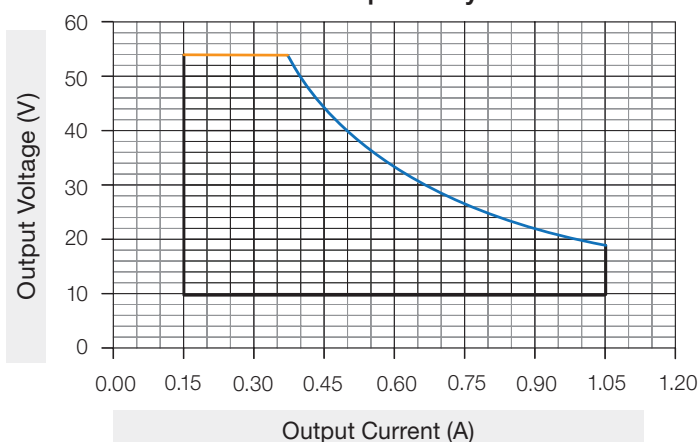
Driver Type	Output Voltage	Output Current	Output Power	Standards Recognition	Maximum Rated Temp. @ t _c for Warranty
Constant Current Driver (Class 2)	10–54 V \sim	0.15–1.05 A*	20 W	 US LISTED CLASS P E322469	80 °C

* QwikFig compatible model number PEQ01UVN-2ABLK is configurable to any current within this range in 0.01 A increments.

Typical Performance Specifications:

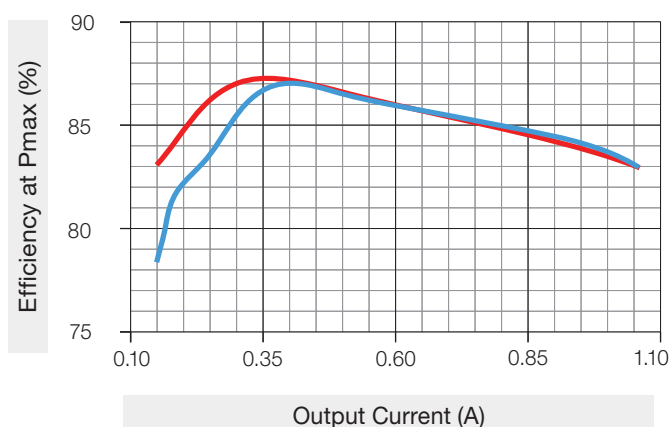
Parameter	Value	Test Conditions
Input Current	0.2 A	V _i = 120 V \sim , t _a = 25 °C, I _o = 0.40 A, V _o = 50 V \sim , Maximum Light Output PEQ01UVN-2A040
Power Factor	0.95	
THD	15%	
Driver Efficiency	85%	

Load Compatibility



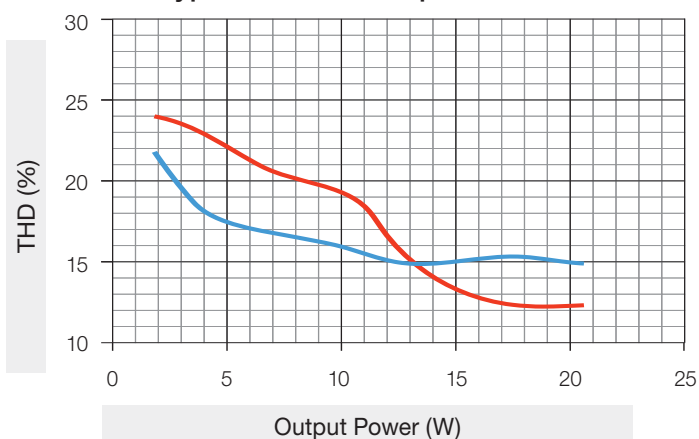
Key: — Constant 20 W output — Constant 54 V output

Typical Efficiency vs Output Current



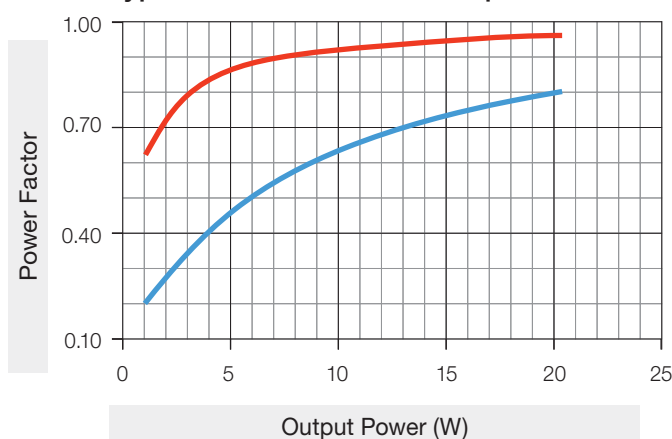
Key: — 120 V \sim — 277 V \sim

Typical THD vs. Output Power



Key: — 120 V \sim — 277 V \sim

Typical Power Factor vs. Output Power



Key: — 120 V \sim — 277 V \sim

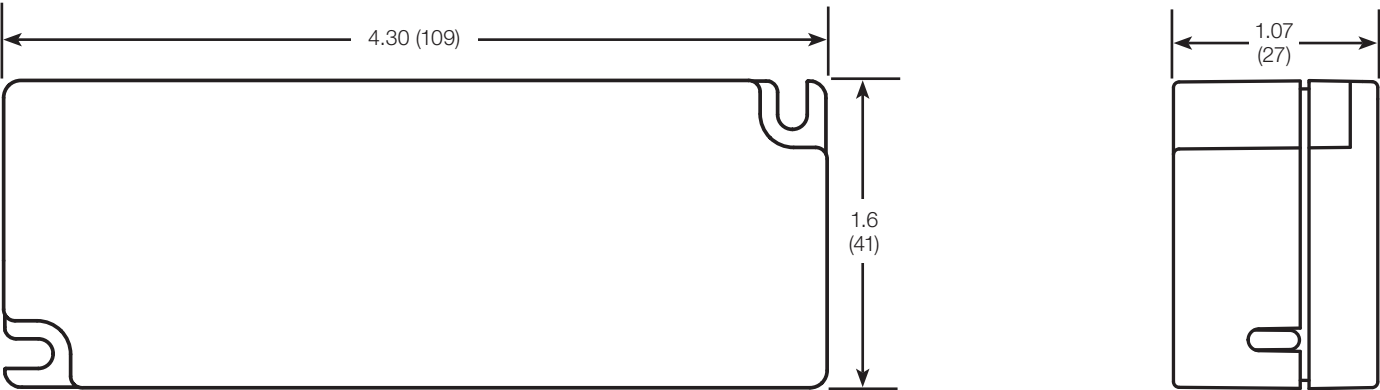
Job Name:

Model Numbers:

Job Number:

Outer Dimensions

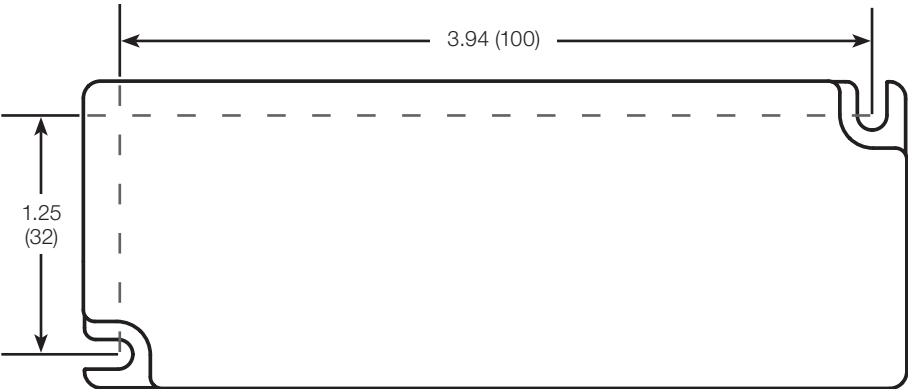
All measurements shown as: in (mm)



Mounting

All measurements shown as: in (mm)

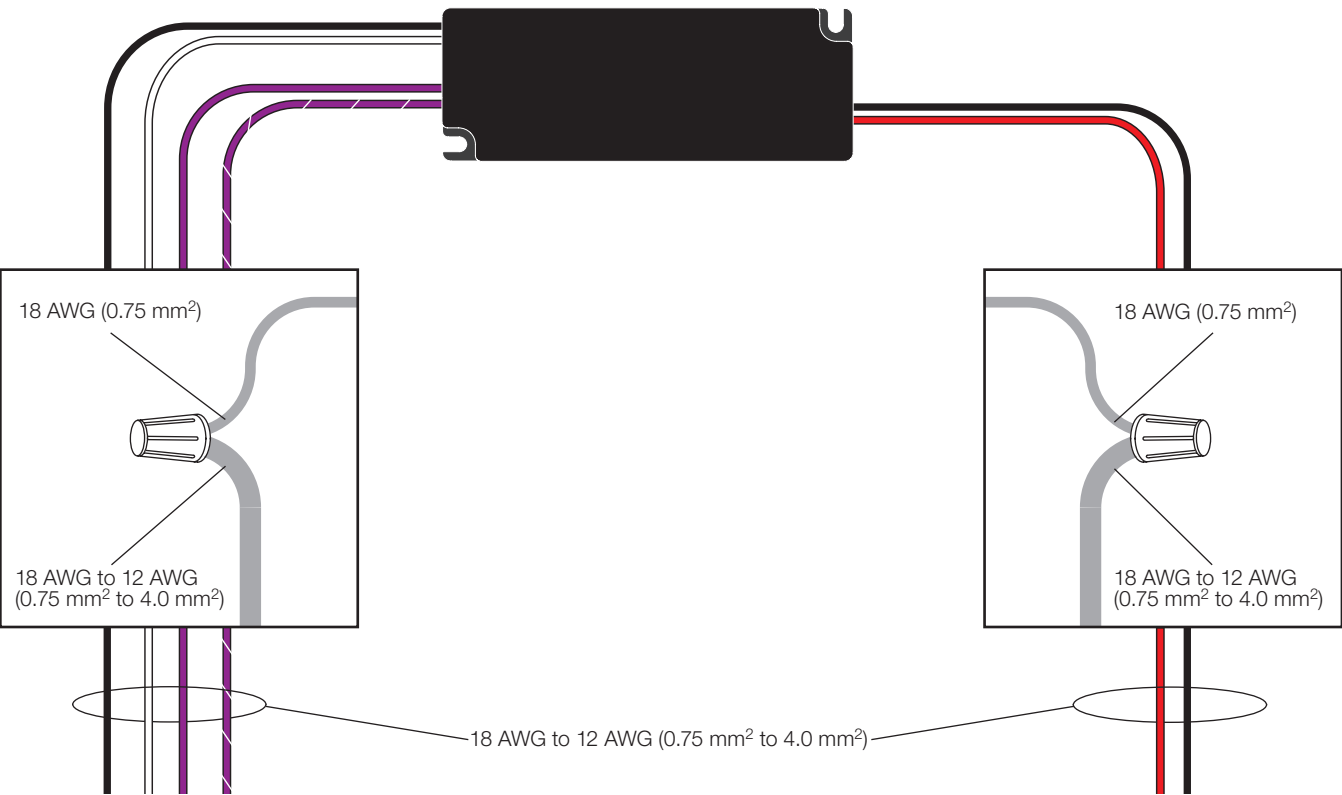
Accommodates #6 screws for mounting. Tighten screws to a maximum of 8 in-lb (0.9 N•m).



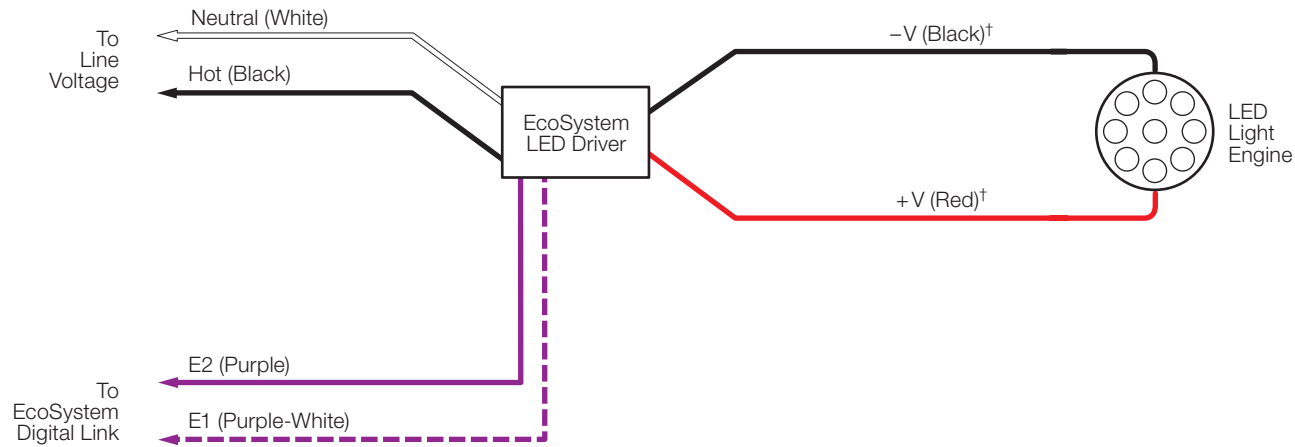
Job Name:	Model Numbers:
Job Number:	

Wiring Gauges

Wire colors shown correspond to wires on driver.



Wiring for EcoSystem Digital Control*



* Refer to Lutron Application note #142, "EcoSystem Bus Class 1 and Class 2 listing" for more information on wiring options.

† For maximum driver-to-LED light engine wire length, see charts in the **Driver Wiring and Mounting** section on page 2.

Job Name:	Model Numbers:
Job Number:	

Compatible Controls: Lutron EcoSystem Digital Controls

Guaranteed performance specifications with the controls listed in the chart below.

For assistance selecting controls, contact our LED Center of Excellence at **1.877.346.5338** or **LEDs@lutron.com**

Lutron EcoSystem Compatible Controls	Part Number		Drivers per Control		
	120 V~	277 V~	EcoSystem Loops per Control	Drivers per EcoSystem Loop	Maximum Drivers per Control
PowPak Dimming Modules	RMJ-ECO32-DV-B		1	32	32
	FCJ/FCJS-ECO ¹		1	3	3
Energi Savr Node	QSN-1ECO-S	N/A	1	64	64
	QSN-2ECO-S		2	64	128
GRAFIK Eye QS / HomeWorks QS control unit	QSGRJ-_E (wireless) QSGR-_E	N/A	1	64	64
Quantum Hub	QP2-__ 2C	N/A	2	64	128
	QP2-__ 4C		4	64	256
	QP2-__ 6C		6	64	384
	QP2-__ 8C		8	64	512
HomeWorks QS / myRoom Plus power module	LQSE-2ECO-D	N/A	2	64	128

¹ All devices connected to one FCJ/FCJS-ECO will be controlled together. Devices will dim to the same level as the result of a control command. For more detail on adjusting low-end light level refer to Application Note #556 at www.lutron.com.

Job Name:	Model Numbers:
Job Number:	

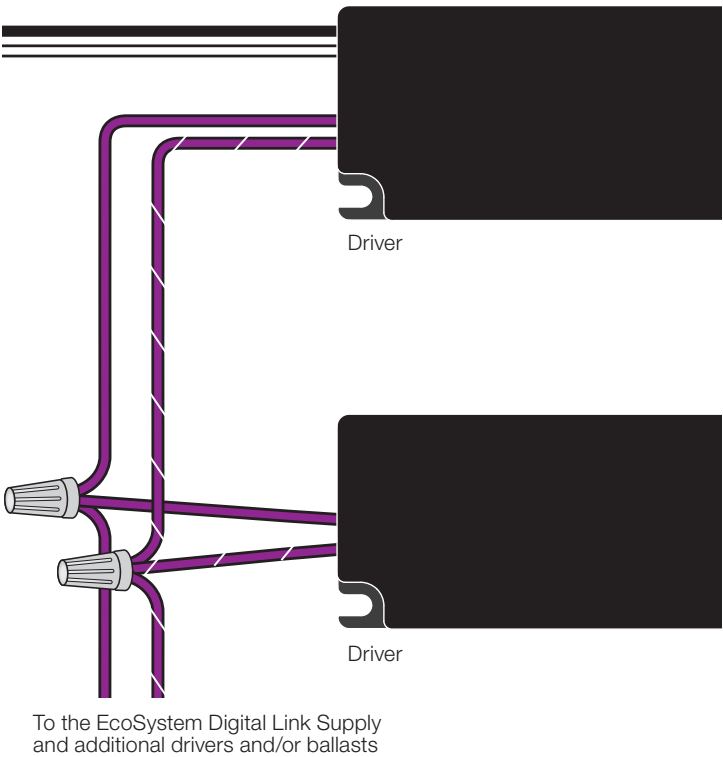
EcoSystem Wiring

EcoSystem Digital Link Overview

- The EcoSystem Digital Link wiring (E1 and E2) connects the digital ballasts and drivers together to form a lighting control system.
- E1 and E2 (EcoSystem digital link wires) are polarity-insensitive and can be wired in any topology (e.g., T-tap and daisy-chain).
- Power is supplied to the EcoSystem Digital Link from the control system.

EcoSystem Digital Link Wiring

- Make sure that the supply breaker to the drivers and EcoSystem Digital Link Supply is OFF when wiring.
- Connect the two conductors to the two driver terminals E1 and E2 as shown.
- Using two different colors for E1 and E2 will reduce confusion when wiring several drivers together.
- The EcoSystem Digital Link may be wired Class 1 or Class 2. Consult applicable electrical codes for proper wiring practices. For more information on wiring options, refer to Lutron Application Note #142 “EcoSystem Bus Class 1 and Class 2 Listing”.
- For emergency wiring, please refer to Lutron Application Note #106.



Notes

- The EcoSystem Digital Link Supply does not have to be located at the end of the Digital Link.
- Both wires of the EcoSystem link are included in maximum digital lead length.
- EcoSystem Digital Link length is limited by the wire gauge used for E1 and E2 as follows:

Wire Gauge	Digital Link Length (max)
12 AWG	2200 ft
14 AWG	1400 ft
16 AWG	900 ft
18 AWG	550 ft

Wire Size	Digital Link Length (max)
4.0 mm ²	828 m
2.5 mm ²	517 m
1.5 mm ²	310 m
1.0 mm ²	207 m
0.75 mm ²	155 m

Job Name:	Model Numbers:
Job Number:	

EMC Information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Service

Warranty


For warranty information, please visit www.lutron.com/driverwarranty

Replacement Parts

When ordering Lutron replacement parts, please provide the full model number. Consult Lutron if you have any questions.

Further Information

For further information, please visit us at www.lutron.com/hilume1softbled or contact our LED Control Center of Excellence at 1.877.346.5338 or LEDs@lutron.com

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Soft-on, Fade-to-Black, Energi Savr Node, and QwikFig are trademarks of Lutron Electronics Co., Inc.

LUTRON SPECIFICATION SUBMITTAL

Page

Job Name:	Model Numbers:
Job Number:	