

Hi-lume Premier 0.1% EcoSystem/3-Wire Voltage LED Driver Installation

English

041597 Rev. A
2/2017

L3D0-96W24V-U UL® Listed Driver

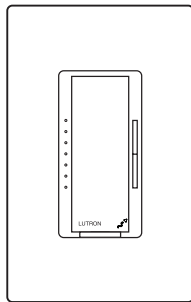
Output: 2–96 W 24 V --- Input: 120–277 V \sim 50/60 Hz, Max 110 W

Important Notes: Please read before installing.

- For installation by a qualified electrician in accordance with all local and national electrical codes.
- Use copper conductors only.
- For indoor use only.
- For 277 V \sim applications, a suitable barrier may be required between the non-Class 2 and Class 2 wiring, per local and national electrical wiring codes. For your convenience, the driver includes an optional barrier.
- Check to see that the driver type and rating are suitable for the application.
- DO NOT install if product has any visible damage.
- If moisture or condensation is evident, allow the product to dry completely before installation.
- Operate between 32 °F (0 °C) and 104 °F (40 °C) ambient.
- 0% to 90% humidity, non-condensing.
- Four 8-32 x 3/8 in (9.5 mm), serrated lid screws provided.
- For best practices, please refer to Application Note #591 (P/N 048591) at www.lutron.com

Required Components For each system, ensure that you have:

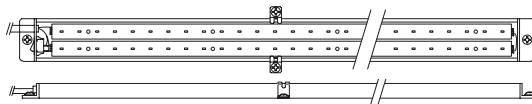
One Compatible Lutron Control^{1,2}



At least one Hi-lume Premier 0.1% Driver



At least one compatible LED Load (light engine)³



- See list of compatible controls on the reverse side.
- Please refer to the control installation sheet for wiring instructions.
- Refer to LED load manufacturer instructions for proper installation practices. Load ratings must match driver output ratings.

Need Help? Please visit the Hi-lume Premier 0.1% page at www.lutron.com or call Lutron Customer Assistance at **1.844.LUTRON1 (1.844.588.7661)**

Mounting (mount as shown on the right)

- Remove top cover to access multi-sided mounting key holes.
- Mount driver per the options shown to the right.

Notes

- Minimum of 3 in (76 mm) required between any two LED drivers.
- Install in accordance with all national and local electrical codes.
- Mount driver in a position where it can be easily located and accessed if service or troubleshooting is necessary.
- Any other mounting configuration will require additional mechanical support. Improper installation may result in hazards to personnel or property.

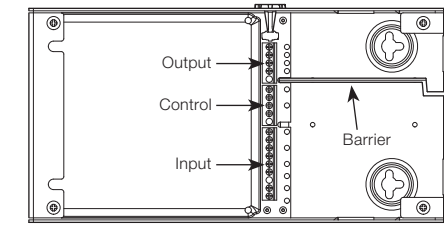
Wiring (wire as shown below)

WARNING: Shock Hazard. May result in serious injury or death.
Turn off power at circuit breaker before installing the unit.

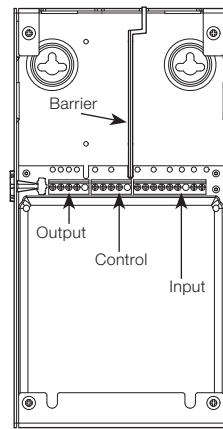
- Remove top cover to access the terminal blocks.
- Open necessary knockouts to pass wires into the wiring compartment.
- Connect the necessary wires according to the illustration below. For E1/E2 wiring, please refer to Application Note #142. Terminals accept 12 AWG to 20 AWG (0.50 mm² to 2.5 mm²).
- Optional** - An AC line cord may be used for a 120 V \sim application. The line cord must include a grounded plug to be a valid installation as shown to the right. 277 V \sim applications cannot use a line cord, they must be hard-wired.
- Optional** - Add barrier between non-Class 2 and Class 2 wires (e.g., EcoSystem wiring shown below has E1/E2 as Class 2, therefore barrier is placed between input and control terminal block).
- Rotate Field Adjustment Knob to full counter-clockwise position.
- Ensure compatible dimmer and load are installed and restore power to the circuit. See reverse side for Compatible Controls.

A barrier (included) in the wiring compartment separates non-Class 2 and Class 2 wires. Barrier can be placed between control and output terminals (Option 1) or between input and control terminals (Option 2).

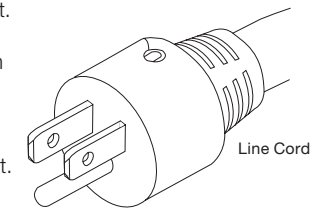
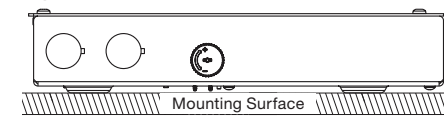
Option 1



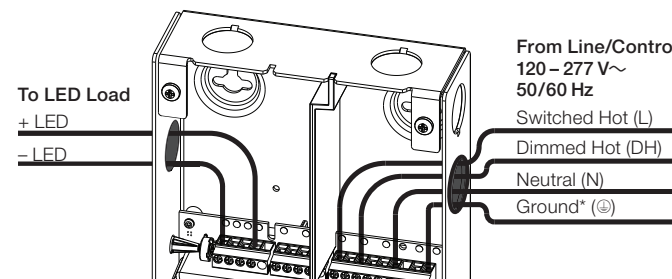
Option 2



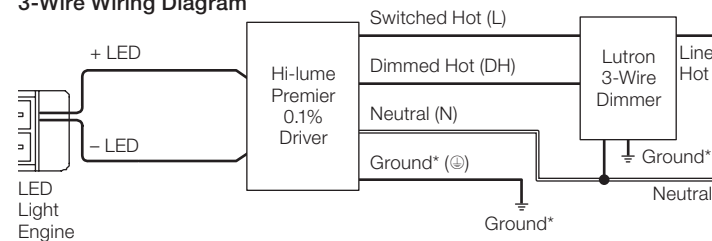
Option 3



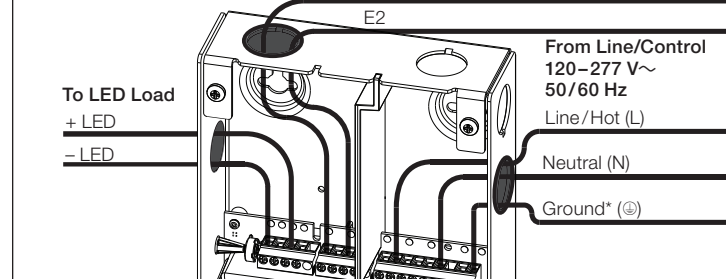
3-Wire Controls



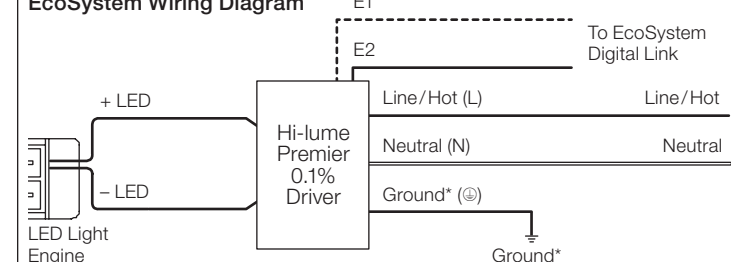
3-Wire Wiring Diagram



EcoSystem Controls



EcoSystem Wiring Diagram



* Driver and control must be grounded in accordance with local and national electrical codes.

Hi-lume Premier 0.1% EcoSystem/3-wire Voltage LED Driver

Compatible Controls

Compatible Controls

- 3-Wire Controls
- EcoSystem Controls

Consult individual component installation guides for more details.

Driver Leads

Maximum wire length between LED driver and start of the light engine:

Wire Gauge*	Maximum Lead Length
24 AWG (0.20 mm ²)*	6 ft (1.8 m)
22 AWG (0.75 mm ²)*	10 ft (3.0 m)
20 AWG (0.50 mm ²)	15 ft (4.5 m)
18 AWG (0.75 mm ²)	25 ft (7.62 m)
16 AWG (1.0 mm ²)	40 ft (12.2 m)
14 AWG (1.5 mm ²)	60 ft (18.3 m)
12 AWG (2.5 mm ²)	100 ft (30.5 m)
10 AWG (4.0 mm ²)*	150 ft (45.7 m)

* To use wire gauges larger or smaller than terminal blocks' rated gauge of 20 AWG to 12 AWG (0.50 mm² to 2.50 mm²), connect 12 in (30 cm) or less of rated wire from terminal and connect with larger or smaller wire.

Field Adjustment Knob

Adjusting knob on the outside of the enclosure changes the minimum light level that is reached during normal operation. This feature enables the user to address light output mismatch between two or more drivers at low-end dim level. Driver is initially defaulted to the minimum light output when at low-end. For more information, please refer to Application Note #591 (P/N 048591) at www.lutron.com



1. Ensure knobs on all drivers are in the full counter-clockwise position.
2. Set control to get lowest light level.
3. Turn knob clockwise to adjust light output to match the brightest driver.
4. Repeat steps 2-3 for the remaining drivers.

Warranty

For warranty information, please visit: www.lutron.com/DriverWarranty

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Compatible Controls

For assistance in selecting controls, contact our LED Center of Excellence.

3-Wire Controls (without Soft-on, Fade-to-Black dimming technology)

Product	Model Number		Drivers per Control**		Load Selection Type	Low-end trim setting†
	120 V~	277 V~	120 V~	277 V~		
Nova T★	NTF-10-	NTF-10-277-	1–16	1–19	—	—
	NTF-103P-	NTF-103P-277-	1–8	1–14	—	—
Nova	NF-10-	NF-10-277-	1–16	1–19	—	—
	NF-103P-	NF-103P-277-	1–8	1–14	—	—
Skylark	SF-10P-	SF-12P-277-	1–8	1–14	—	—
	SF-103P-	SF-12P-277-3-	1–8	1–14	—	—
Diva	DVF-103P-	DVF-103P-277-	1–8	1–14	—	—
	DVSCF-103P-	DVSCF-103P-277-	1–8	1–14	—	—
Ariadni	AYF-103P-	AYF-103P-277-	1–8	1–14	—	—
Maestro	MAF-6AM-	MAF-6AM-277-	1–6	1–14	—	—
	MSCF-6AM-	MSCF-6AM-277-	1–6	1–14	—	—
Maestro Wireless	MRF2-F6AN-DV-		1–6	1–14	—	—
RadioRA 2	RRD-F6AN-DV-		1–6	1–14	Dual voltage 3-wire dimmer	21%†
HomeWorks QS	HQRD-F6AN-DV-		1–6	1–14	Fluorescent 3-wire LED 3-wire	21%†
Interface	PHPM-3F-120-	—	1–16	—	—	—
	PHPM-3F-DV-		1–16	1–38	—	—
	BCI-0-10		1–16	1–38	—	—
GP Dimming Panel	Various		1–16	1–38	2–1	—

EcoSystem Controls (with Soft-on, Fade-to-Black dimming technology)

Product	Model Number		Recommended System Version*	Drivers per Control	
	120 – 277 V~			120 V~	277 V~
PowPak Dimming Module with EcoSystem	RMJ-ECO32-DV-B, URMJ-ECO32-DVB		5.9 or higher	32 per EcoSystem link	
PowPak Wireless Fixture Control with EcoSystem‡	FCJ-ECO, FCJS-ECO		0796554 or higher	3 per EcoSystem link	
Energi Savr Node with EcoSystem	QSN-1ECO-S, QSN-2ECO-S, QSN-2ECO-PS120, UQSN-1ECO-S, UQSN-2ECO-S		9.027 or higher	64 per EcoSystem link	
GRAFIK Eye QS with EcoSystem	QSGRJ-_E, QSGR-_E	—	9.009 or higher	64 per EcoSystem link	
Quantum Light Management Hub	QP2-_P_C	—	3.2 or higher§	64 per EcoSystem link	
HomeWorks QS with EcoSystem	LQSE-2ECO-D, QSGRJ-_E, QSGR-_E	—	10 or higher*	64 per EcoSystem link	

NOTE: For information about Legacy product use in existing control applications, contact LEDs@lutron.com

** No derating required in multigang applications provided that the driver count does not exceed the quantity listed.

† 21% trim allows for 0.1% low-end level but might result in dead travel for 1%–4% on user interface. 22% trim can be used to avoid dead travel but may result in >0.1% low-end level.

‡ All devices connected to one PowPak wireless fixture controller will be controlled together. Devices will dim to the same level as the result of a control command. Control will need to have low-end level reprogrammed to dim to 0.1% output. For more details, refer to Application Note #556 at www.lutron.com.

§ Version 3.1 (or higher) is required to dim lower than 1%.

* Version 7.0 (or higher) is required to dim lower than 1%.

- For lower system versions, please visit www.lutron.com/LEDSystemcheck to check if your system requires changes.

L3D0-96W24V-U Troubleshooting

Problem	Possible Solution
LED does not illuminate at high-end	<ul style="list-style-type: none"> • Verify that the system is wired correctly according to wiring diagram and powered. • Verify that the LED load is wired correctly; +LED to positive, -LED to negative. • Verify that the LED load is for “constant-voltage” applications with PWM dimming. • Verify that the LED load is compatible with the specified voltage output of the driver. • Lutron drivers are not for use with MR16 LED lamps.
LED does not illuminate at low-end	<ul style="list-style-type: none"> • Verify that the low-end trim on the control is set properly. • Turn Field Adjustment Knob clockwise until desired low-end operation is obtained.
LED does not dim	<ul style="list-style-type: none"> • Verify that Switched Hot and Dimmed Hot are connected to the proper terminals for 3-wire control. • Verify EcoSystem control wiring (E1 and E2) is wired according to the instructions for digital control.
LED turns on/off abruptly without Soft-on, Fade-to-Black feature	<ul style="list-style-type: none"> • Turn Field Adjustment Knob counter-clockwise until desired low-end operation is obtained. • 3-wire control does not have Soft-on, Fade-to-Black dimming technology.
LED is flashing, flickering, dropping out, or has poor dimming performance	<ul style="list-style-type: none"> • Verify that a compatible dimmer is being used to control the driver. • Verify that the input voltage is within the rated limits. • Verify that Switched Hot and Dimmed Hot are connected to the proper terminals. • Verify that the LED load is for “constant-voltage” with PWM dimming applications. • Verify that the length of wires between driver and LED does not exceed specification. • Verify that the rated voltage is present at the driver. • Certain types of LED loads may be incompatible.* Verify that the LED load is within the specified wattage range of 2 W to 96 W. • Lutron drivers are not for use with MR16 LED lamps.
LED is flashing slowly (6 to 8 second interval)	<ul style="list-style-type: none"> • Verify that the LED load does not exceed the maximum specified power rating of the driver (96 W). • Verify that the LED load matches the specified voltage output of the driver. • Verify that the length of wire between driver and LED does not exceed specification. • Certain types of LED loads may be incompatible.*
LED output appears dim at high-end	<ul style="list-style-type: none"> • Verify that rated line voltage is present at the terminal. • Verify that the driver is operating in an environment within its ambient temperature rating. • Verify that the driver is not located adjacent to other heat producing devices. Verify that space between drivers is greater than 3 in (76 mm). • Verify that the maximum lead length is not exceeded per Lutron recommendation. • Verify that the LED load is installed per manufacturer’s instructions. • Verify that the LED load is compatible with the specified voltage output of the driver.
Not all LED strips/fixtures illuminate	<ul style="list-style-type: none"> • Verify that multiple LEDs connected to a single driver are properly wired. • Verify that the LED load is installed per manufacturer’s instructions.
Not all LEDs on the same strip are evenly lit	<ul style="list-style-type: none"> • Verify that the length of wire between the driver and LED does not exceed specifications. • Verify that the LED load is for “constant-voltage” with PWM dimming applications. • Verify that the LED load is installed per manufacturer’s instructions.
LED is brighter/hotter than expected	<ul style="list-style-type: none"> • Verify that the LED load is compatible with the specified voltage output of the driver.

* Certain constant-voltage loads may have added capacitance. Contact the Lutron LED Center of Excellence at 1.877.346.5338 or LEDs@lutron.com for more information about these loads.