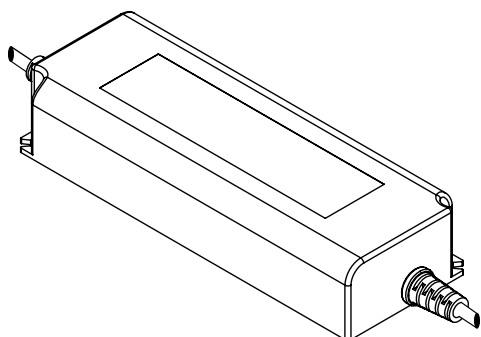


24VDC COMMERCIAL GRADE 0-10V LED DIMMABLE DRIVER

SPECIFICATION SHEET



OVERVIEW

24VDC Commercial Grade 0-10V Dimmable LED Drivers are essential components for retrofitting fluorescent tubes to low voltage LED fixtures in 0-10V control systems. These drivers are ideal for commercial applications designed with 0-10V systems, are rated for wet and dry locations, and offer a smooth, continuous dimming range from 100-10% brightness. These drivers are engineered to work with 0-10V dimming controls for superior dimming performance. These drivers are IP67 rated (driver only) and are suitable for install in dry, damp, or wet locations.

FEATURES

- 120~277VAC Input
- Flicker-free dimming range of 100-10%
- Short circuit, over current, over voltage, over temperature protections
- Plastic housing with Class II design, fault ground protection
- Class 2 power unit
- Fanless design, cooling by free air convection
- No load power consumption <0.15W
- UL Recognized Component (driver only)
- UL Listed (LO-PRO® Junction Box & Driver Combo)
- 5-year warranty

RECEIVE A UL LISTED DRIVER WHEN ORDERING THE LO-PRO® JUNCTION BOX & DRIVER COMBO ON PAGE 2.



Item #	
Project	

SPECIFICATIONS - 120VAC~277VAC (24VDC Output) Models

Input Voltage / Frequency¹ :	120 ~ 277VAC, 50/60Hz (Refer to 'Static Characteristics Curve')
Dimmable² :	Yes, with any 0-10V dimmer or control. Output PWM Frequency to LED load is 300Hz.
Ambient Temp³ :	40 ~ +185°F (Refer to 'Derating Curve')
Operating Temp⁴ :	40 ~ +185°F
Environment:	IP67 outdoor / wet location when installed in wet location J-Box. Lo-Pro J-Box & Driver Combo is suitable for indoor / dry locations.
Working Humidity:	20 ~ 95% RH non-condensing
Housing / Cooling:	Plastic housing / cooling by free-air convection
UL Recognized Component (Driver Only):	UL8750 (type"HL"), CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13 independent, EN62384, IP67 approved; Design refer to EN60335-1. CE Certified.
UL Listed (LO-PRO® J-Box & Driver Combo):	UL 1598 UL# E469769. UL8750 (type"HL"), CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13 independent, EN62384, EN60335-1. CE Certified.

LO-PRO® JUNCTION BOX & DRIVER COMBO

UL LISTED DRIVER OPTION



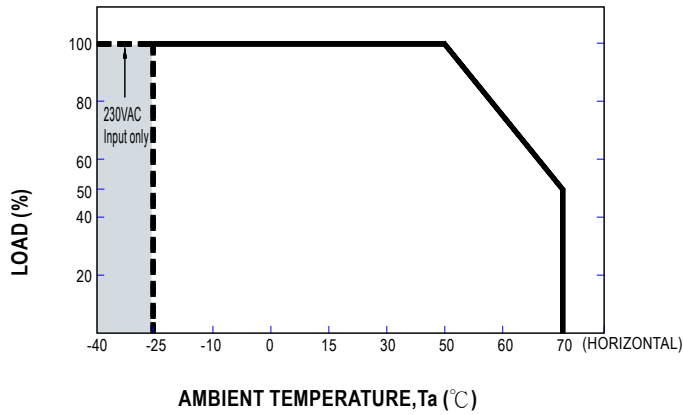
SKUs highlighted in blue qualify for the Lo-Pro Junction Box & Driver Combo. An additional UL Listed E469769 Sticker will be placed on the outside of the Lo-Pro J-Box certifying the combo as a UL Listed Low Voltage Power unit. Conforms to Article 725.121(A)(2) of the National Electrical Code®. For full driver specifications, see the driver spec sheet.

	DI-CV-MW24V60W-0-10V	DI-CV-MW24V60W-0-10V-LPS	DI-CV-MW24V90W-0-10V	DI-CV-MW24V90W-0-10V-LPL
Power / Max Load	60W / 2.5A (See Derating Curve)		90W / 3.75A (See Derating Curve)	
Output Full Load	24VDC		24VDC	
Class 2	Yes		Yes	
Minimum Load	None		None	
Input Current Full Load	0.8A@115VAC, 0.4A@230VAC, 0.32A@277VAC		0.6A / 115VAC, 0.3A / 230VAC, 0.25A / 277VAC	
Primary Leads	SJTW 18/2AWG, AC/L (Brown), AC/N (Blue)		SJTW 18/2AWG, AC/L (Brown), AC/N (Blue)	
Secondary Leads	UL 2464 18/2AWG, V+(Red), V-(Black) UL 2464 22/2AWG, DIM+(Blue), Dim-(White)		UL 2464 18/2AWG, V+(Red), V-(Black) UL 2464 22/2AWG, DIM+(Blue), Dim-(White)	
Voltage Boost³	No		No	
Circuit Breakers	Auto Reset Hiccup		Auto Reset Hiccup	
Efficiency / PF Full Load	89% / PF: ≥0.97@115VAC, ≥0.95@230VAC, ≥0.92@277VAC		86% / PF: ≥0.98@115VAC, ≥0.96@230VAC, ≥0.94@277VAC	
THD Full Load	5%@115VAC, 10%@230VAC, 16%@277VAC		5%@115VAC, 8%@230VAC, 14%@277VAC	
Dimensions	5.9 x 2.1 x 1.4 in. (L x W x H)	11.25 x 3.75 x 1.90 in. (L x W x H)	6.8 x 2.5 x 1.5 in (L x W x H)	13.5 x 4.5 x 3.75 in. (L x W x H)
Weight	1.1 lbs (17.6 oz.)	3.0 lbs (48 oz.)	1.1 lbs (17.6 oz.)	5.7 lbs (91.2 oz.)

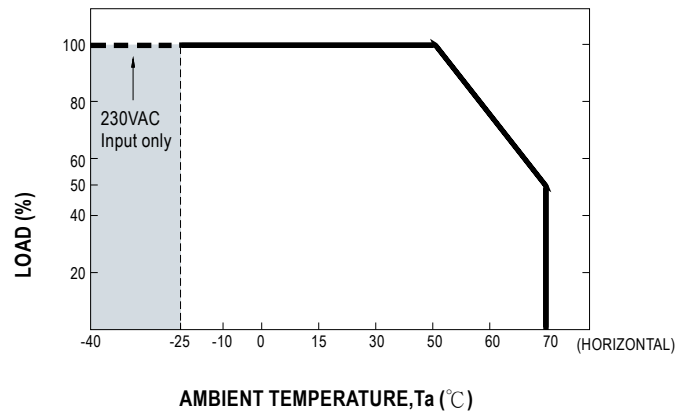
1. Refer to the 'Static Characteristics Curve' if installing under low input voltage conditions to properly derate the power supply load
2. Not compatible with 120VAC dimming controls. PWM dimmer/control spec sheet will indicate if multiple controls can be paired to a single driver.
3. Refer to the 'Derating Curve' if nearing max. ambient temperature to properly derate the power supply load. Do not install product in an environment outside the listed ambient temperature.
4. Operating temperature is measured according to the minimum and maximum ambient temperature environment. Operating temperature is measured according to the minimum and maximum ambient temperature environment.

DERATING CURVE

DI-DM-MW24V60W-0-10V

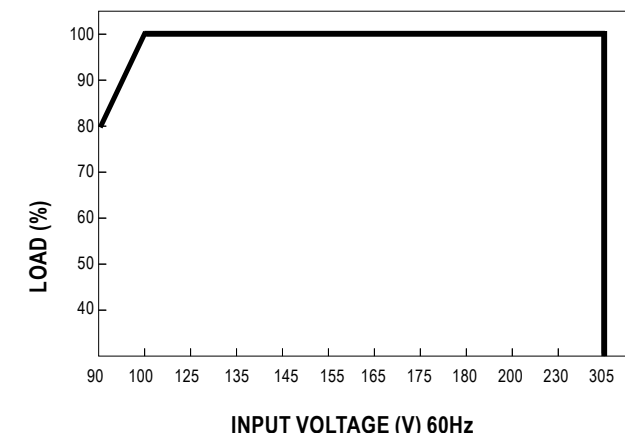


DI-DM-MW24V90W-0-10V

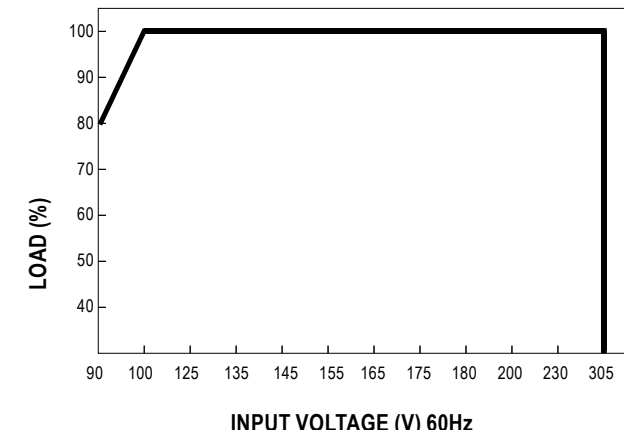


STATIC CHARACTERISTICS

DI-DM-MW24V60W-0-10V



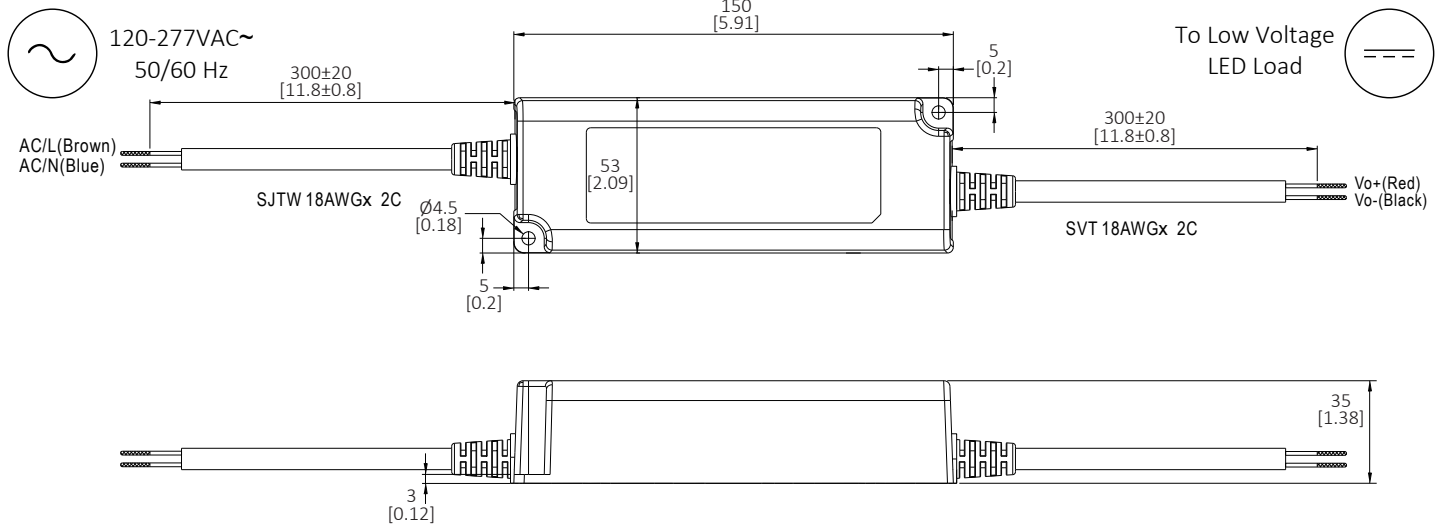
DI-DM-MW24V90W-0-10V



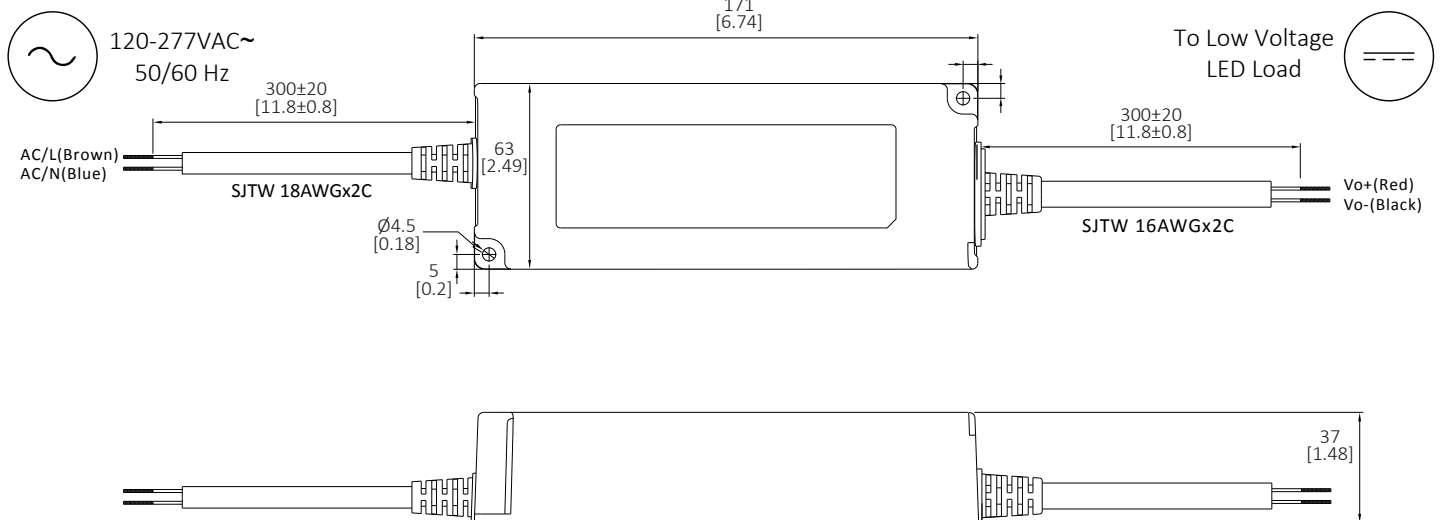
MECHANICAL DIAGRAM (Driver Only)

DI-CV-MW24V60W-0-10V

UNIT: mm [in.]

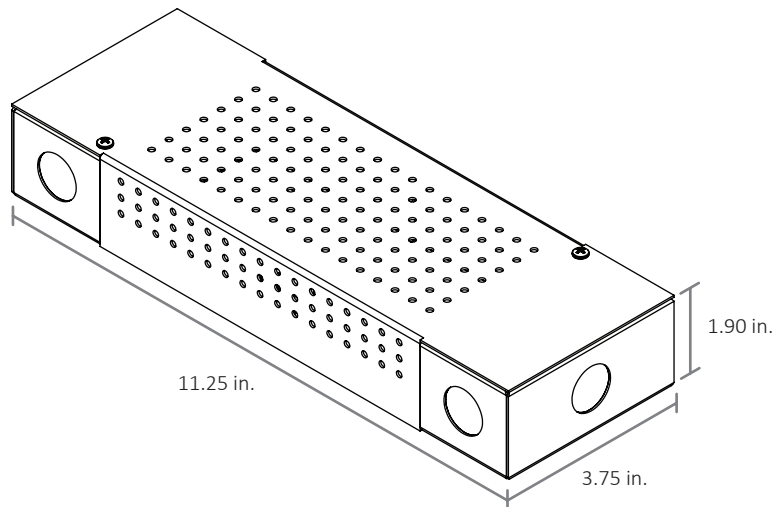


DI-CV-MW24V90W-0-10V

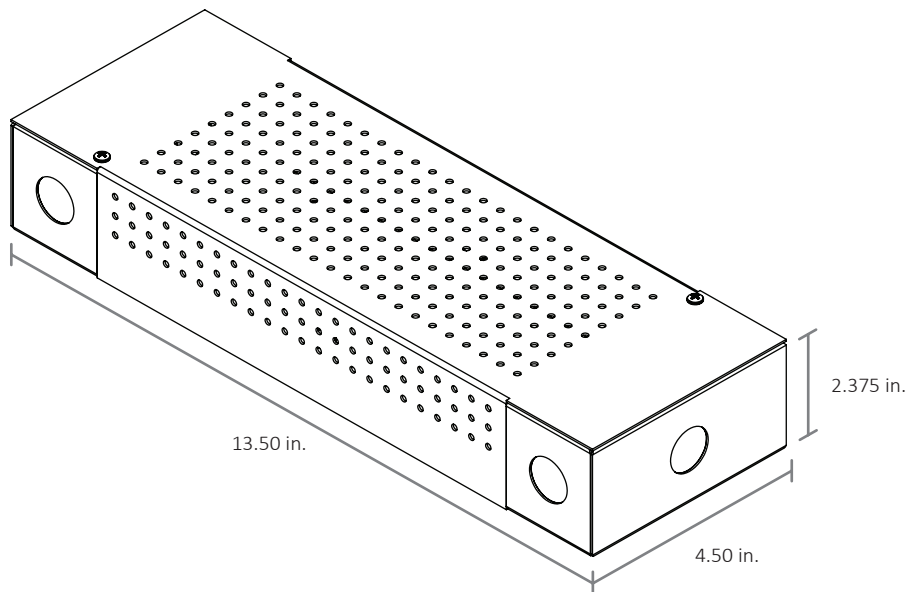


MECHANICAL DIAGRAM (LO-PRO® JUNCTION BOX & DRIVER COMBO)

DI-CV-MW24V60W-0-10V-LPS



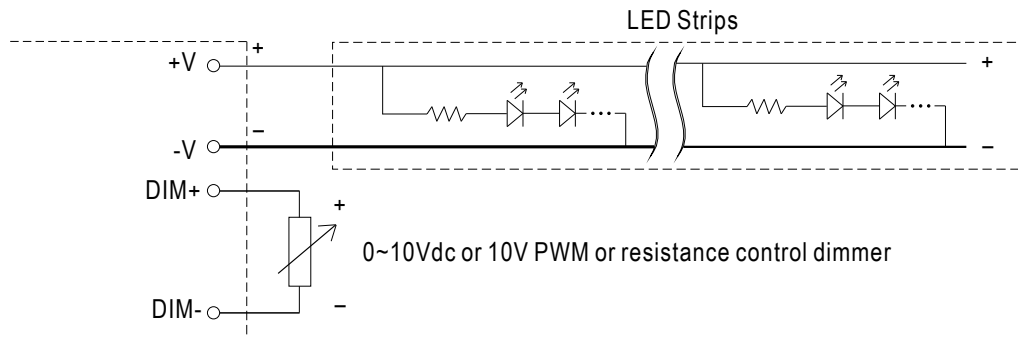
DI-CV-MW24V90W-0-10V-LPS



DIMMING OPERATION

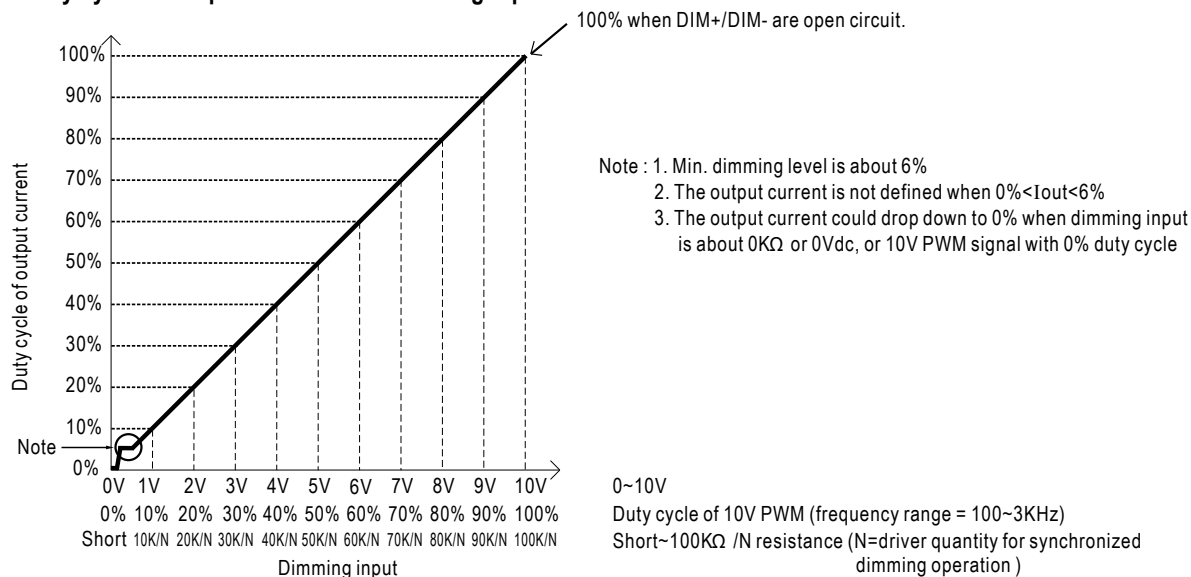
The PWM style output is a simple switching of supply ON/OFF at a rate so fast that the human eye cannot see led flickering. Duty cycle describes the proportion of time when output voltage is on relative to the entire period of time. It is expressed in percentage, 100% being fully on (maximal brightness) and a low duty cycle corresponding to lower brightness. Built-in 3 in 1 dimming function. The duty of the PWM style output can be adjusted through output cable by connecting a 0~10Vdc or 10V PWM signal or resistance between DIM+ and DIM-.

◇ Connection

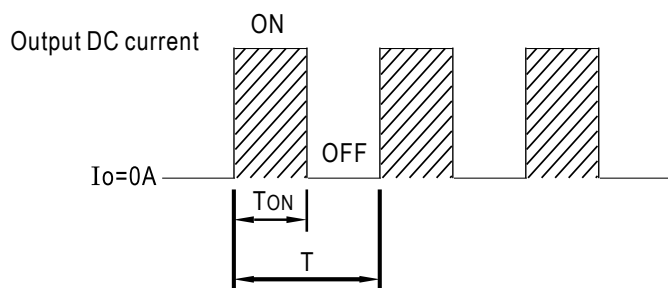


"DO NOT connect "DIM- to -V"

◇ Duty cycle of output current VS Dimming input



◇ PWM Style Output



$$\text{Duty cycle(\%)} = \frac{T_{ON}}{T} \times 100\%$$

Output PWM frequency : 300Hz fixed (Typ.)

COMPATIBLE CONTROLS

All 0-10V controls and dimmers are compatible with Diode LED's 0-10V Dimmable Drivers. Below are a few popular 0-10V control models that may be installed with 0-10V Dimmable Drivers. Some dimmers require an additional power pack (relay switch) to support an On/Off control or occupancy sensor control.

Controls / Dimmers

MFG	Product Description	Model #	Power Input	Power Pack Required for On/Off Control?	Power Pack Required for Occupancy Sensor?
Lutron®	DIVA® 0-10V Preset Dimmer	DVTV	Control: 0-10VDC, 30mA Switch: 24VDC, 100mA	Yes*	Yes*
Lutron®	NOVA® 0-10V Slide-to-off Dimmer	NFTV	Control: 0-10VDC, 30mA Switch: 24VDC, 100mA	Yes*	Yes*
Lutron®	NOVA T® 0-10V Slide-to-off Dimmer	NTFTV	Control: 0-10VDC, 30mA Switch: 24VDC, 100mA	Yes*	Yes*
Leviton®	ILLUMATECH® 0-10V Preset Dimmer	IP710-LFZ	120VAC and 277VAC. See MFG installation guide for maximum loads.	No	Yes†

* Lutron® Series Power Packs (relay modules) must be installed to support On/Off control and when installing Lutron® occupancy sensor controls. Specify the Auxillary Power Pack when installing more than 3 Lutron® occupancy sensors.

† The Leviton® IP710-DLZ dimmer supports On/Off control. The Leviton Power Pack is required when installing Leviton® occupancy sensor controls.

Power Packs (Relay Modules)

MFG	Product Description	Model #	Power Input	Power Pack Required for On/Off Control?	Power Pack Required for Occupancy Sensor?
Lutron® Series Power Packs	Power Packs	PP-120H	120VAC, 60 Hz	24VDC, 5mA	24VDC, 100mA
		PP-230H	230VAC, 50/60 Hz		
		PP-277H	277VAC, 60 Hz		
		PP-347H	347VAC, 60 Hz		
	Auxillary Power Pack	PP-SH	N/A	24VDC, 5mA	N/A
Leviton® Occupancy Sensor Power Packs	Auto On	OPP20-0D1	See MFG Specs	See MFG Specs	See MFG Specs
	Auto/Manual On, Local Switch	OPP20-0D2			
	Auto On, Photocell	OPP20-RD3			
	Auto/Manual On, Local Switch, Photocell	OPP20-RD4			

Below are examples of 0-10V system diagrams that apply to the controls on page 5. Leviton® models don't require a Relay Switch. Lutron® models require a relay switch.

AC Power 50/60Hz

L (Black) Dimmer Input Hot (Black) GND

Driver Line Hot (Brown) Dimmer Switched Hot (Red)

DIM+ (Blue) DIM+ (Purple)

DIM- (White) V+ (Red) DIM- (Gray)

V+ (Red) V- (Black)

Class 2, 0-10V Driver†

LED Tape Light / Fixture††

0-10V Dimmer / Control

Class 2 Only.
Install applicable gauge wire / type.

On/Off Relay Module

Black (L)
Red
White (N)
Red

Black
V+
V-
V+
V-

AC Power
50/60Hz

L
N

Driver Neutral (Blue)
Driver Line Hot (Brown)

L
N
Input
Output
to dimmer
to load

V+
V-
V+
V-

Class 2, 0-10V Driver†

V+ (Red)
V- (Blue)
DIM+ (Blue)
DIM+ (Purple)
DIM- (White)
DIM- (Gray)

0-10V
Dimmer / Control

V+ (Red)
V- (Blue)

V-
V+
V-
V+

LED Tape Light / Fixture††

Class 2 Only.
Install applicable
gauge wire / type.

ADDITIONAL RESOURCES

12VDC COMMERCIAL GRADE 0-10V DIMMABLE DRIVER Spec Sheet
0-10V DIMMABLE DRIVER Installation Guide
VOLTAGE DROP CHARTS

SAFETY / WARNINGS / DISCLOSURES

1. Install in accordance with national and local electrical code regulations.
2. This product is intended to be installed and serviced by a qualified, licensed electrician.
3. DO NOT modify product beyond instructions or warranty will be void.
4. Turn power OFF at main breaker before servicing or installing this product.
5. Proper heat dissipation will prolong the working lifespan of this product. Install in a well-ventilated area free from explosive gases and vapors.
6. Refer to the 'Static Characteristics Curve' if installing under low input voltage conditions to properly derate the power supply load
7. Drivers are rated for maximum power output at optimum thermal and voltage conditions. Please refer to the 'Derating Curve' for maximum load ratings.
8. Ensure a compatible LED fixture with the correct operating voltage is installed with this product.
9. Suitable for outdoor and wet locations when installed in a wet location J-Box. LO-PRO Junction Box & Driver Combo is rated for indoor / dry locations.
10. To compensate for voltage drop, ensure applicable gauge in-wall rated wire is installed between driver and LED fixture
11. Compatible with 0-10V dimmers/controls. Not compatible with 120VAC dimming controls or PWM controls.

WARRANTY

Limited Warranty

This product has a five (5) year limited warranty from the date of shipment. This warranty does not include the additional accessories referenced in this specification sheet. Complete warranty details for fixtures and additional accessories are available at www.diodeled.com/limited-warranty/ within the Policies section. For warranty related questions please contact product support.

Consumer's Acknowledgment

Diode LED stands behind its products when they are used properly and according to our specifications. By purchasing our products, the purchaser agrees and acknowledges that lighting design, configuration and installation is a complex process, wherein seemingly minor factors or changes in layout and infield adjustments can have a significant impact on an entire system. Choosing the correct components is essential. Diode LED is able to work with the original purchaser to make an appropriate product selection to the extent of the limited information that the customer can provide, but it is virtually impossible for Diode LED to design a system that foresees every unknown factor. For this reason, this Warranty does not cover problems caused by improper design, configuration or installation issues. Any statement from a Diode LED employee or agent regarding a customer's bill of goods and/or purchase order is NOT an acknowledgment that the products purchased are designed and configured correctly. The purchase agrees and acknowledges that it is the customer's responsibility to adhere strictly to all information contained in the Product Specification Sheets.

There is often more than one way to design, configure and layout an LED lighting application properly to achieve the same lighting effect. Diode LED strongly recommends that licensed professionals be used in the design and installation of lighting systems that include Diode LED products. The specifications include important information that a designer and installer should carefully review and strictly follow. Qualified designers and certified and/or licensed installers, with access to the final installation environment, customer goals, and Diode LED product specifications can make the requisite decisions appropriate for a successful finished lighting application.



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