CUSTOMER	PROJECT	DATE
TYPE	QTY	PO #

LS-PSU-24V-300W-5IN1

5-in-1 dimmable LED power supply · 24 VDC · 300 W · 110–277 VAC



SELV · Intertek · cULus LISTED E525847 · FC · RoHS · Class 2 · Class P · WET · TYPE HL

5 dimming modes

TRIAC MLV / ELV · forward or reverse phase	**0-10 V** Analog dimming	**1-10 V** Analog dimming
PWM 10 V 10 V PWM signal	**Potentiometer** Direct adjustment	**100–0.01%** Flicker-free

Specifications

ELECTRICAL	
Output voltage	24 VDC · constant voltage
Current / power	12.5 A · 300 W
Input voltage	110–277 VAC · 47–63 Hz
Power factor	> 0.95 · active PFC
Efficiency (typ.)	90% @ 120 VAC · 92% @ 277 VAC
Load range	0.01–100%
DIMMING	
Controls	TRIAC · 0-10 V · 1-10 V · 10 V PWM · potentiometer
Voltage mode	100–0.01%, stepless
PWM mode	100–0.1%
MECHANICAL & ENVIRONMENT	
Dimensions (L × W × H)	289 × 132 × 42.5 mm
Enclosure	Metal NEMA 4X · dry, damp, wet
Operating temperature	−40 °C to +60 °C
Net weight	2.1 kg
CERTIFICATIONS & WARRANTY	
Certifications	UL / cUL · Class 2 · Class P · Type HL
Compliance	FCC Part 15 B · Title 24 JA8
Warranty	5 years

Description

24 VDC, 300 W constant-voltage LED power supply compatible with five dimming methods. Its switchable PWM or voltage-regulation output provides smooth, flicker-free dimming down to 0.01%, with no voltage spikes at power-on, power-off or while dimming, which slows lumen depreciation. Metal NEMA 4X enclosure for indoor and outdoor use.

Key features

- Switchable PWM or voltage-regulation output (U.S. patent)
- Operates from 0.01 to 100% load
- Short-circuit, overload and over-temperature protection
- Patented “clamshell” junction box with adjustable AC/DC wiring compartment
- Fine-tunable output voltage
- Compatible with 2-wire warm-dim LED strip, MR16, PAR, wall washers, linear and DC-DC LED fixtures

BOREALUX

DATASHEET
LS-PSU-24V-300W-5IN1

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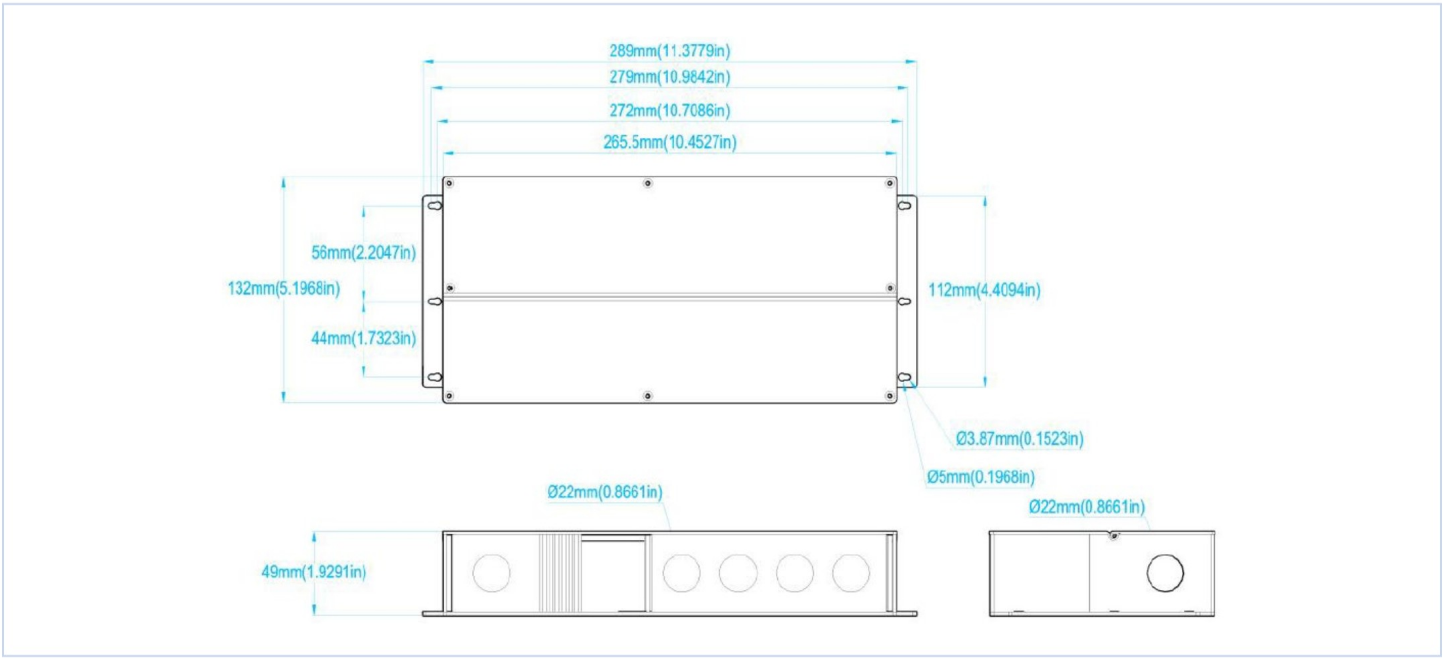
Detailed specifications

OUTPUT	
DC voltage	24 V
Rated current	12.5 A
Rated power	300 W
Voltage tolerance	±0.5 V
Line regulation	±0.5%
Load regulation	±1%
INPUT	
Voltage range	110–277 VAC
Frequency range	47–63 Hz
Power factor (typ., full load)	0.99 @ 120 VAC · 0.98 @ 277 VAC
THD (typ., full load)	< 20% @ 120 VAC and 277 VAC
Efficiency (typ., full load)	90% @ 120 VAC · 92% @ 277 VAC
AC current (max.)	3.3 A @ 110 VAC
Inrush current (typ.)	20 A, 50%, 1.9 ms @ 120 VAC · 35 A, 50%, 1.9 ms @ 277 VAC
Leakage current	< 0.50 mA
PROTECTION	
Short circuit	Hiccup mode, recovers automatically once the fault is removed
Overload	≤ 120%, hiccup mode, automatic recovery
Over-temperature	Output shuts down at 100 °C ± 10 °C, recovers automatically after cooling
ENVIRONMENT	
Operating temperature	−40 °C to +60 °C (see derating curve)
Operating humidity	20–90% RH, non-condensing
Storage (temp., humidity)	−40 °C to +80 °C · 10–95% RH
Temperature coefficient	±0.03%/°C (0–50 °C)
Vibration	10–500 Hz, 5 G, 10 min/cycle, 60 min along each X, Y, Z axis
SAFETY & EMC	
Certifications	UL, cUL, Type HL, NEMA 4X
Safety standards	UL 8750 + UL 1310
Withstand voltage	I/P–O/P: 1.88 kVAC
Isolation resistance	I/P–O/P: 100 MΩ / 500 VDC / 25 °C / 70% RH
EMC emissions	FCC Part 15 B
OTHER	
Net weight	2.1 kg
Dimensions (L × W × H)	289 × 132 × 42.5 mm
Packaging	10 pcs per carton · carton 340 × 295 × 295 mm

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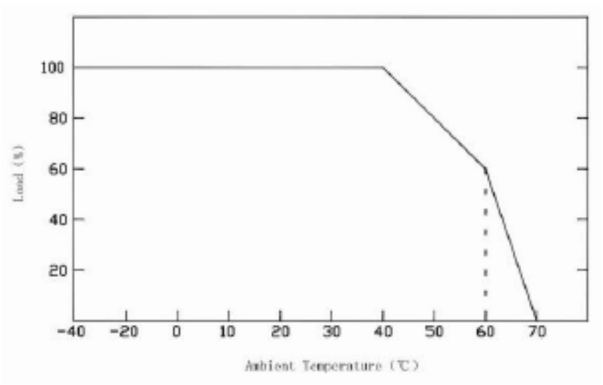
Dimensions

Dimensions in millimetres (inches) · 289 × 132 × 42.5 mm



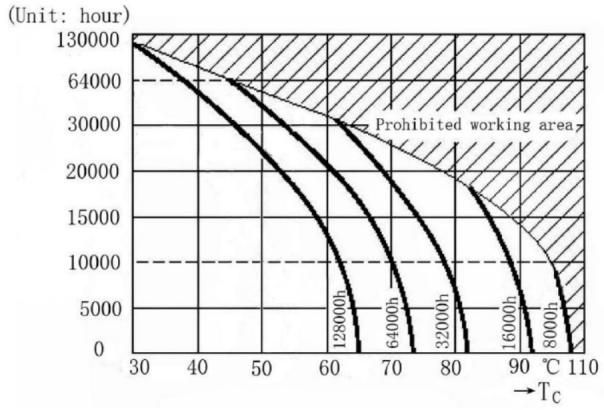
Derating curve

Load (%) vs. ambient temperature (°C)



Lifetime

Lifetime (h) vs. Tc point temperature

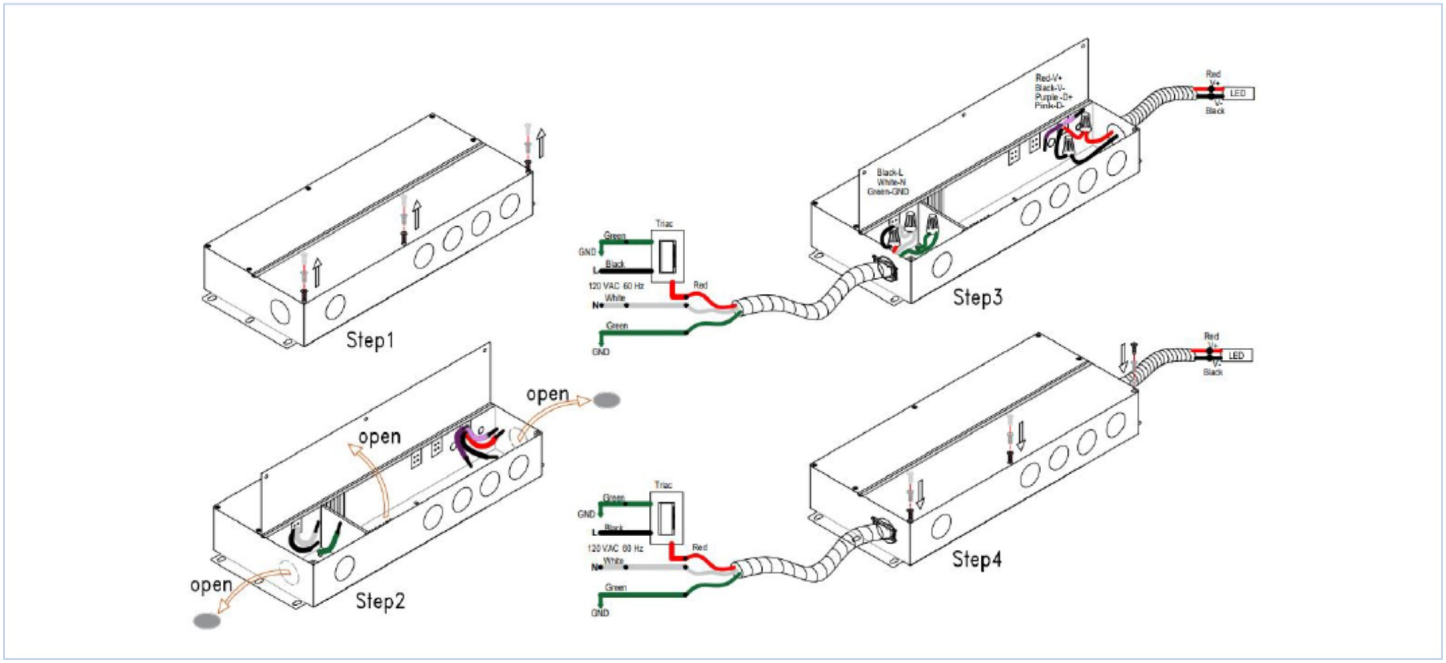


Note — To extend the driver's life, derate the load according to the ambient temperature, as shown in the derating curve.

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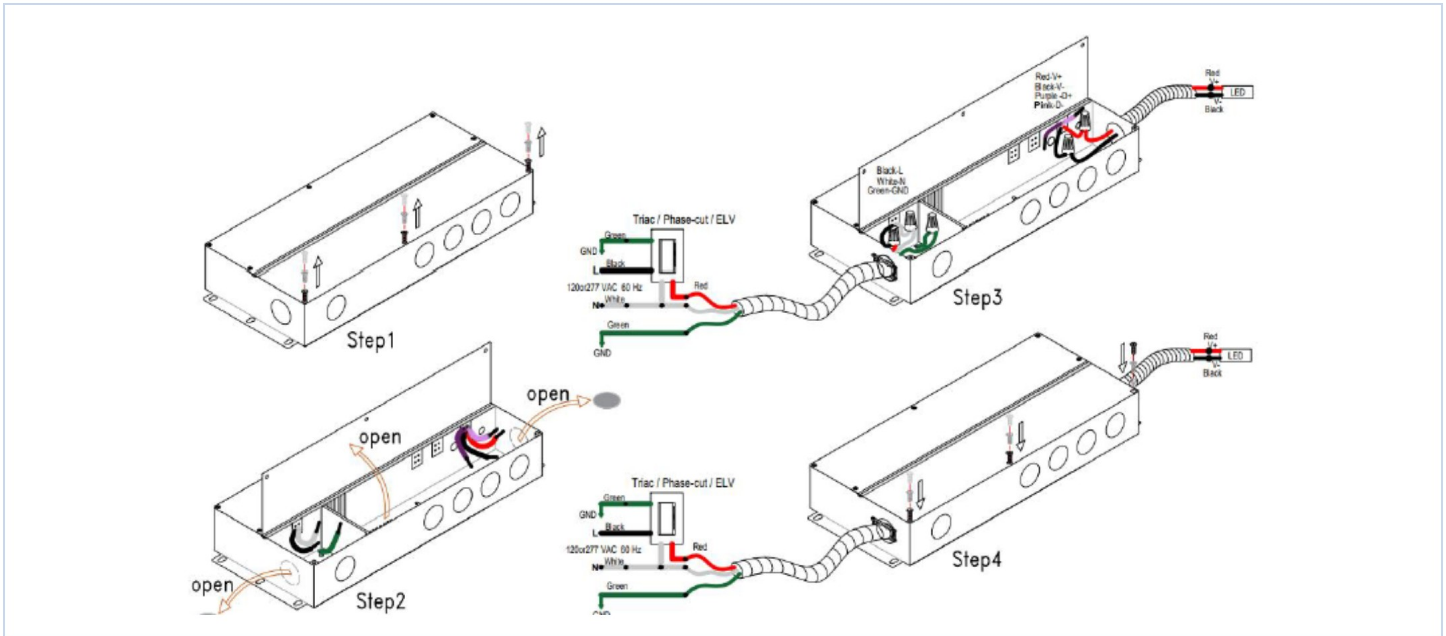
Wiring — TRIAC MLV dimmer

Magnetic low-voltage (MLV) dimmer · steps 1 to 4



Wiring — TRIAC ELV dimmer

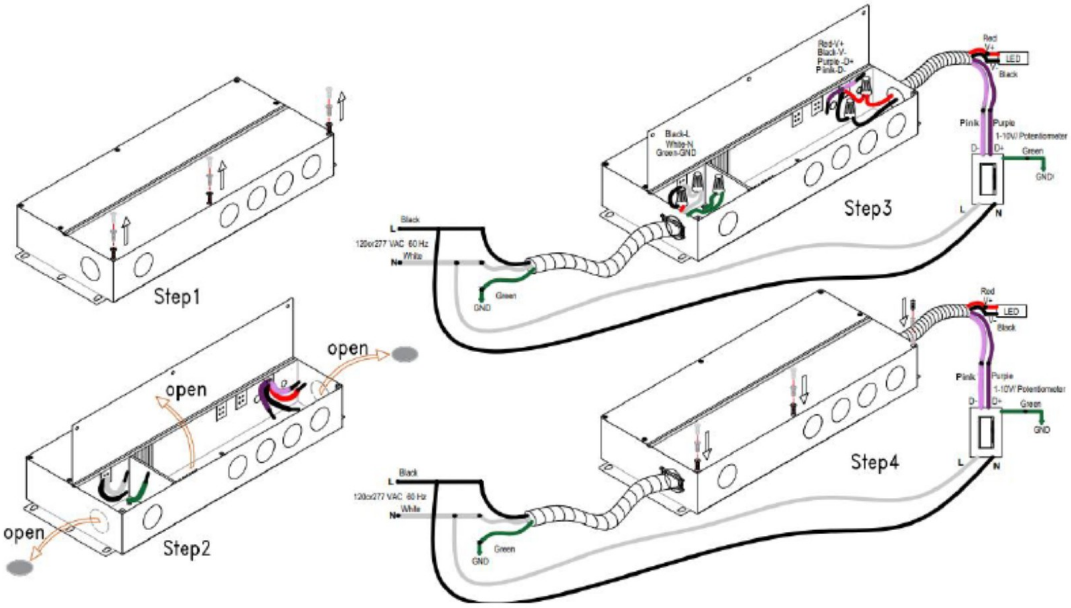
Electronic low-voltage (ELV) dimmer · steps 1 to 4



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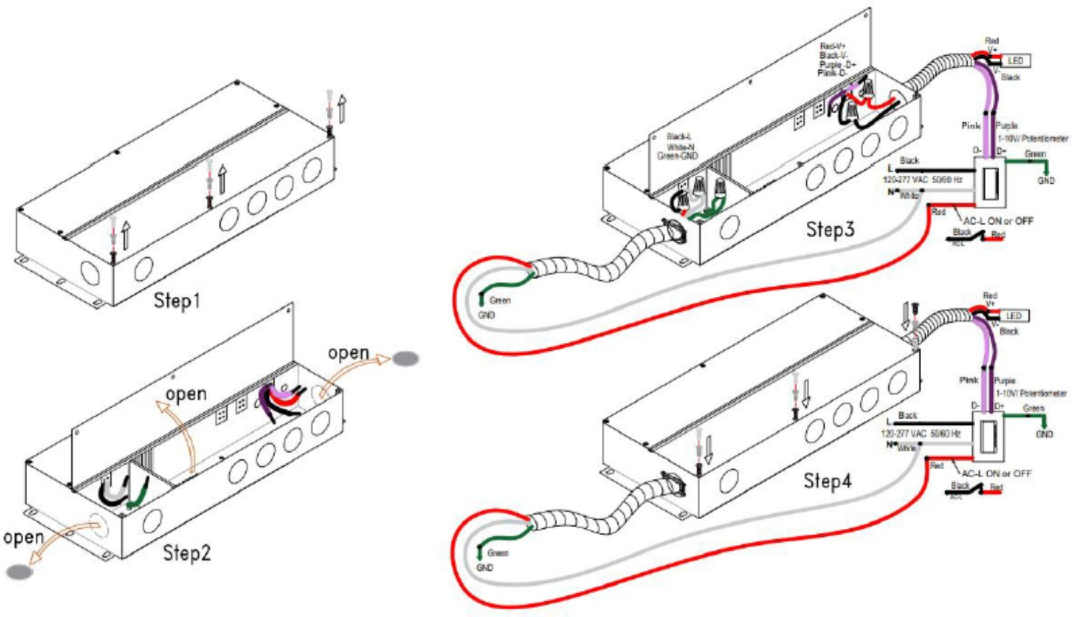
0-10 V / 1-10 V wiring — power supplied through the dimmer (option 1)

0-10 V / 1-10 V dimmer or potentiometer · steps 1 to 4



0-10 V / 1-10 V wiring — power supplied through the dimmer (option 2)

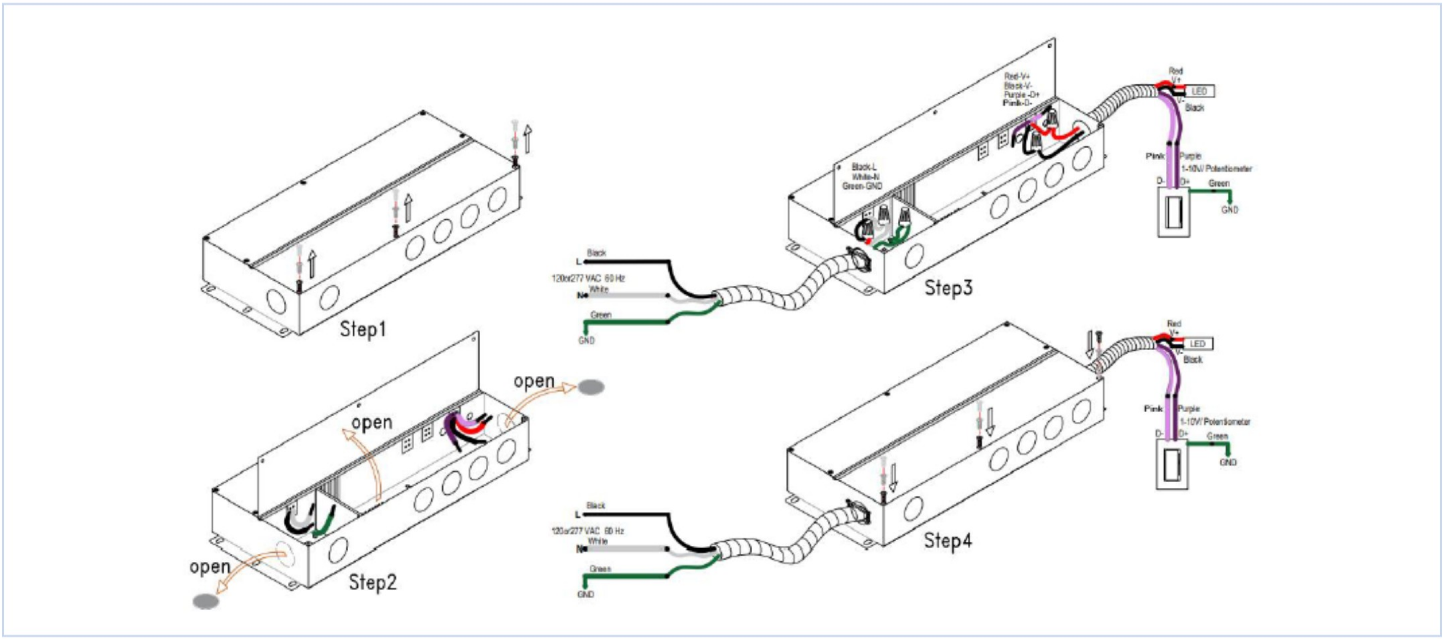
Dimmer with AC line on/off switching · steps 1 to 4



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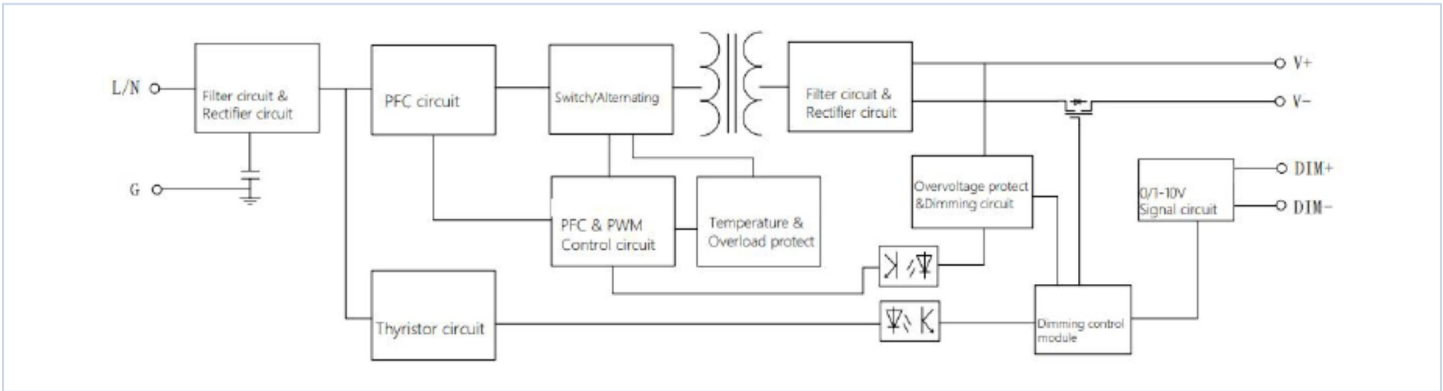
0-10 V / 1-10 V wiring — low-voltage dimmer only

The dimmer is not connected to line voltage · steps 1 to 4



Topology

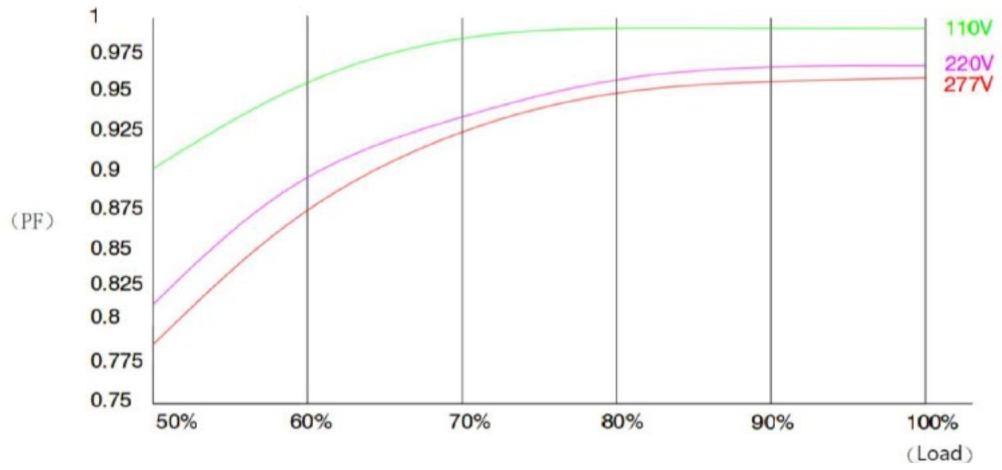
Power supply block diagram



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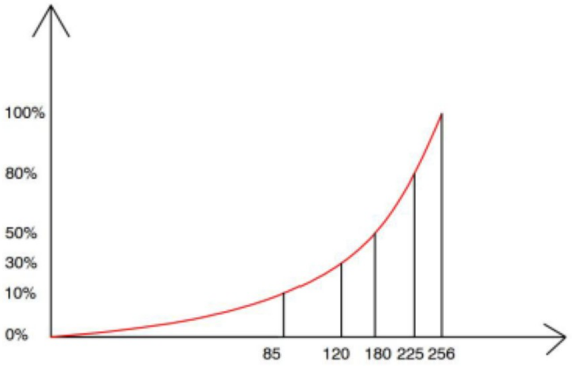
Power factor vs. load

Power factor (PF) vs. load (%) · 110 V, 220 V, 277 V



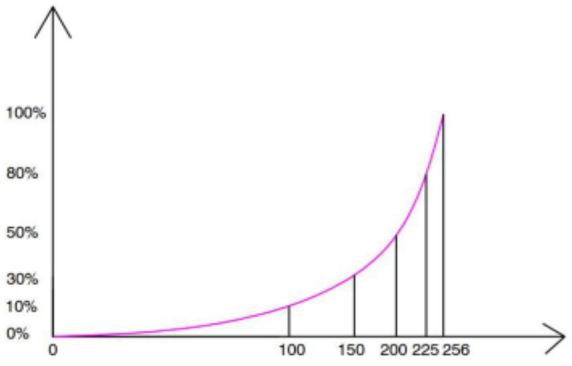
PWM dimming curve

PWM mode



VR dimming curve

Voltage regulation (VR) mode



Installation instructions

1. This driver must be installed by a qualified person.
2. Provide adequate ventilation around the driver to allow heat dissipation.
3. Check the wiring before powering up to avoid damaging the fixtures and the driver.