CUSTOMER	PROJECT	DATE
TYPE	QTY	PO #

LS-PSU-24V-320W-IP67-B

24 VDC LED power supply · 320 W · IP67 · 0-10 V dimming

IP67 **UL8750 · CSA** **0-10 V** **ACTIVE PFC** **CLASS I**

24 VDC Output voltage	**320 W** Rated power
13.34 A Rated current	**90–305 VAC** Universal input (120–277 V)
94.5% Efficiency (277 VAC)	**−40 to +90 °C** Case temperature (Tc)

Description

320 W dual-mode LED power supply — constant voltage and constant current — for indoor and outdoor installations. Its 90–305 VAC universal input accepts 120 V to 277 V networks. The fanless, IP67-rated metal housing delivers up to 94.5% efficiency and operates from −40 °C to +90 °C (case temperature).

The B version includes 3-in-1 dimming: 1–10 VDC, 10 V PWM signal or resistance.

Applications

- 24 V LED strips and fixtures
- Street and parking lot lighting
- Industrial high-bay lighting
- Greenhouse horticultural lighting
- Class I, Division 2 hazardous locations (type HL)

Key features

- Constant voltage + constant current output
- Active power factor correction (PF ≥ 0.94)
- 3-in-1 dimming: 1–10 VDC, 10 V PWM, resistance
- Class I metal housing, IP67 waterproof
- Protections: short circuit, overcurrent, overvoltage, over-temperature
- Typical lifetime over 62,000 hours
- UL8750 (type HL) and CSA C22.2 No. 250.0 listed
- 7-year warranty

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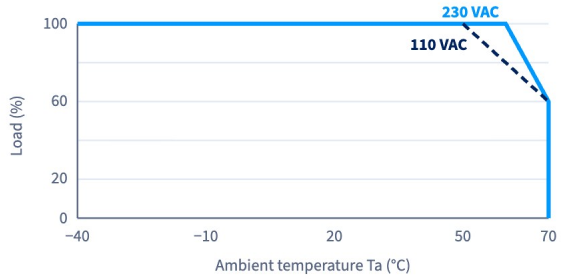
Specifications

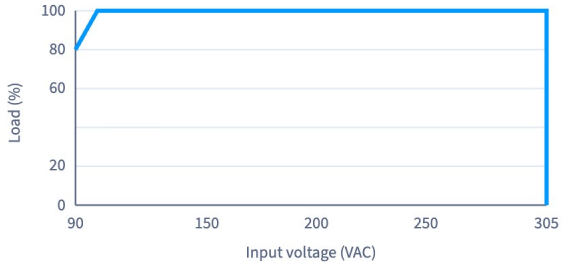
OUTPUT	
Output voltage	24 VDC
Constant current region	12–24 V
Rated current	13.34 A
Rated power	320.16 W
Ripple & noise (max.)	150 mVp-p
Voltage / current adjustment	Not adjustable (B version)
Voltage tolerance	±1.0%
Line regulation	±0.5%
Load regulation	±0.5%
Setup / rise time	2500 ms / 80 ms at 115 VAC · 500 ms / 80 ms at 230 VAC
Hold-up time (typ.)	15 ms at 115 VAC and 230 VAC
INPUT	
Voltage range	90–305 VAC · 127–431 VDC
Frequency	47–63 Hz
Power factor (typ.)	≥ 0.98 at 115 VAC · ≥ 0.95 at 230 VAC · ≥ 0.94 at 277 VAC (full load)
Total harmonic distortion	< 20% (load ≥ 50% at 115/230 VAC · ≥ 75% at 277 VAC)
Efficiency (typ.)	94% at 230 VAC · 94.5% at 277 VAC
AC current	3.5 A at 115 VAC · 1.65 A at 230 VAC · 1.45 A at 277 VAC
Inrush current (typ.)	Cold start 70 A (width 1010 µs at 50% of peak) at 230 VAC, per NEMA 410
Max. units per 16 A breaker	1 (type B) · 2 (type C) at 230 VAC
Leakage current	< 0.75 mA at 277 VAC

Derating curves

Load vs ambient temperature (horizontal mounting)



Load vs input voltage (60 Hz)



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Specifications (continued)

PROTECTION	
Overcurrent	95–108% · constant current limiting, auto-recovery
Short circuit	Hiccup mode, auto-recovery
Overvoltage	27–33 V · output shuts down and latches off; re-power to recover
Over-temperature	Output shuts down and latches off; re-power to recover
ENVIRONMENT	
Operating temperature	Tc = −40 °C to +90 °C (see derating curves)
Max. case temperature	Tc = +90 °C
Operating humidity	20–95% RH, non-condensing
Storage	−40 °C to +80 °C · 10–95% RH
Temperature coefficient	±0.03%/°C (0–50 °C)
Vibration	10–500 Hz, 5 G, 12 min/cycle, 72 min along each X, Y, Z axis
Ingress protection	IP67
SAFETY & EMC	
Safety standards	UL8750 (type HL) · CSA C22.2 No. 250.0-08 · EN/AS/NZS 61347-1 and 61347-2-13 (independent) · GB19510.1, GB19510.14 · KC61347-1, KC61347-2-13 · EAC TP TC 004
Withstand voltage	Input/output 3.75 kVAC · input/ground 2 kVAC · output/ground 1.5 kVAC
Isolation resistance	Input/output, input/ground, output/ground: 100 MΩ at 500 VDC, 25 °C, 70% RH
EMC emission	EN55015, EN55032 (CISPR32) Class B, EN61000-3-2 Class C (load ≥ 50%), EN61000-3-3, GB17743, GB17625.1, EAC TP TC 020
EMC immunity	EN61000-4-2, -3, -4, -5, -6, -8, -11, EN61547, EN55024, light industry level (surge line-earth 4 kV, line-line 2 kV), EAC TP TC 020
OTHER	
MTBF	157,100 h min. (MIL-HDBK-217F, 25 °C)
Dimensions (L × W × H)	252 × 90 × 43.8 mm
Weight	1.88 kg
Packing	8 units · 16 kg · 0.92 cu ft per carton
Lifetime	> 62,000 hours (typical)
Warranty	7 years

Notes

1. Unless otherwise specified, values are measured at 230 VAC input, rated current and 25 °C ambient.
2. Ripple and noise measured at 20 MHz bandwidth using a 30 cm (12 in) twisted pair terminated with 0.1 µF and 47 µF parallel capacitors.
3. Voltage tolerance includes setup tolerance, line regulation and load regulation.
4. Derating may be required at low input voltage (see curve, page 2).
5. Typical lifetime > 62,000 h when the Tc point temperature is about 75 °C or less.
6. Above 2000 m (6500 ft) altitude, derate the max. ambient temperature by 3.5 °C per 1000 m.
7. Component for integration: EMC compliance must be re-verified on the final installation.

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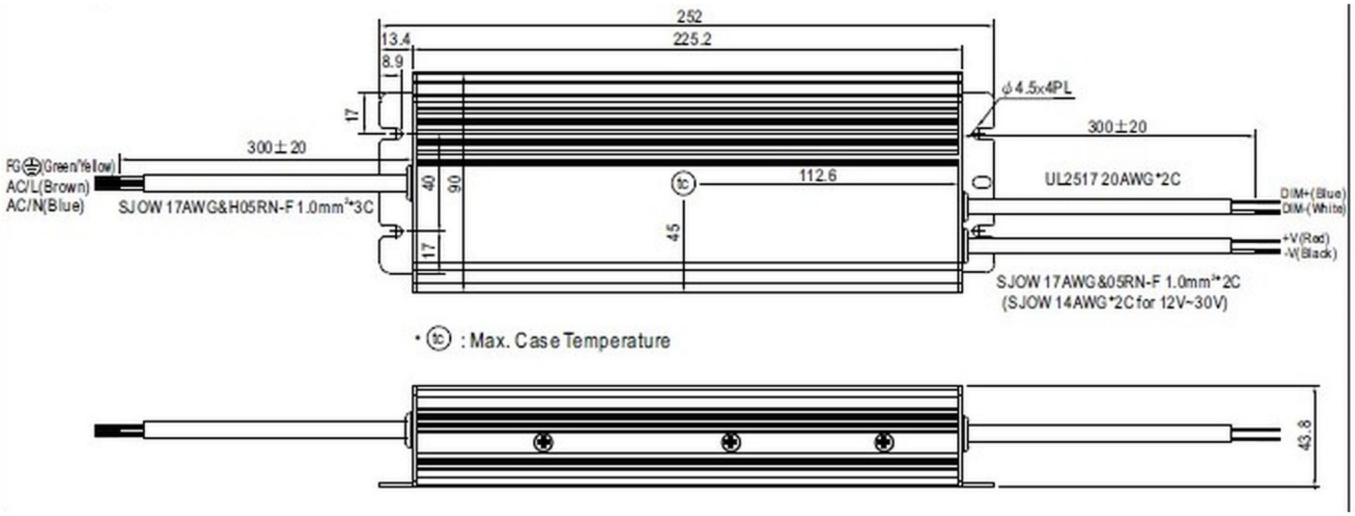
Dimensions

Dimensions in millimetres · top and side views



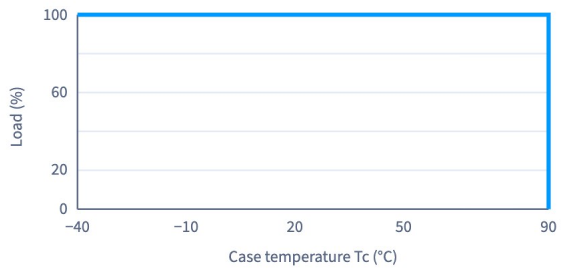
Housing 252 × 90 × 43.8 mm | **Mounting** 4 × Ø 4.5 mm | **Cables** 300 ± 20 mm | **Tc** case temperature measuring point

Wiring

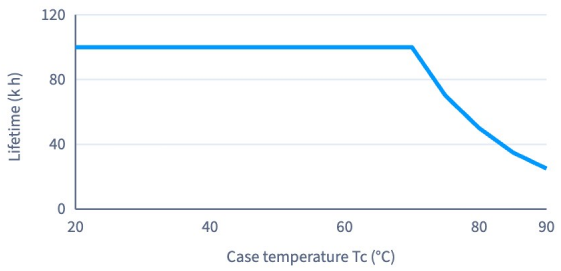
CIRCUIT	COLOUR	FUNCTION	CABLE
AC input	Brown	AC/L (line)	SJOW 17 AWG and H05RN-F 1.0 mm² × 3C
	Blue	AC/N (neutral)	
	Green / yellow	Ground	
DC output	Red	+V	SJOW 14 AWG × 2C
	Black	−V	
Dimming	Blue	DIM+	UL2517 20 AWG × 2C
	White	DIM−	

Case temperature and lifetime

Load vs case temperature Tc



Lifetime vs case temperature Tc



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3-in-1 dimming

Output current is adjusted by applying one of the following three methods between DIM+ and DIM−.

METHOD 1

1–10 VDC

Applied DC voltage. 1 V = 10% · 10 V = 100%.

METHOD 2

10 V PWM

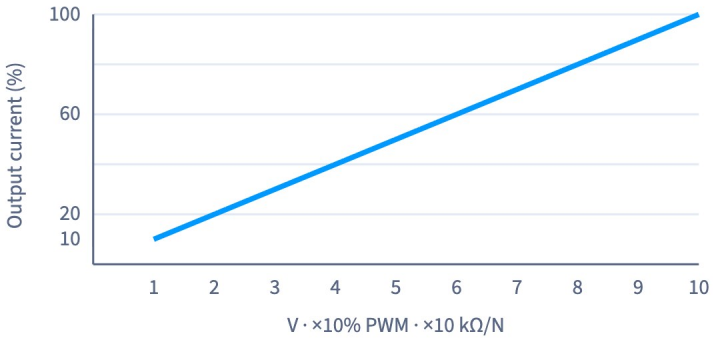
10 V PWM signal, 100 Hz to 3 kHz. Duty cycle 10% to 100%.

METHOD 3

Resistance

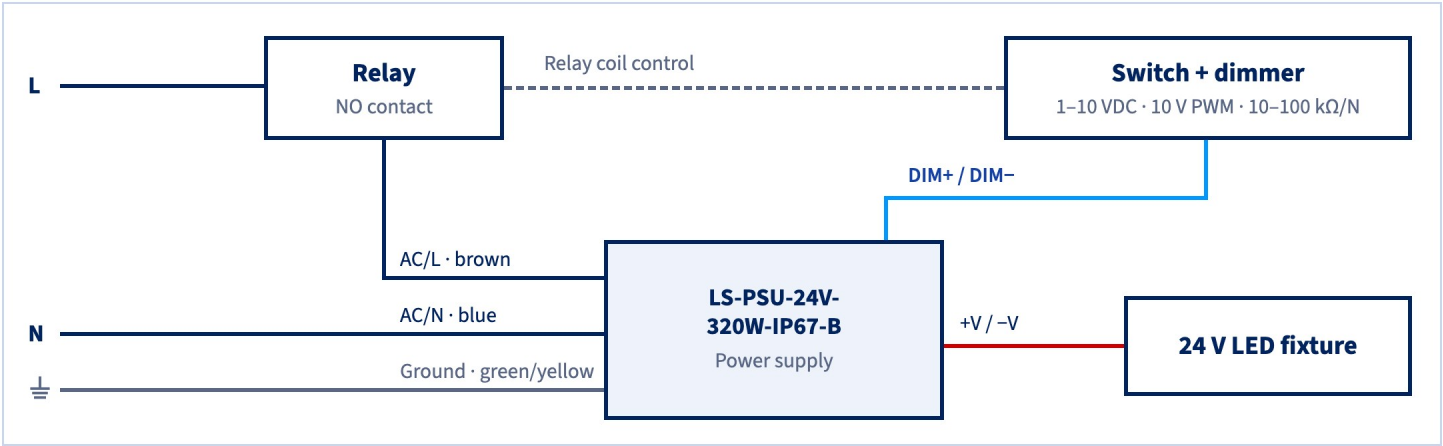
10 kΩ/N to 100 kΩ/N (N = number of units in synchronized dimming).

Output current vs dimming signal



- Dimming source current: 100 µA (typ.)
- Direct connection to LEDs recommended; not suitable for use with additional drivers.

Important — never connect DIM− to −V.

Full shut-off (0%)

Dimming goes down to 10%. For full shut-off, cut the AC supply to the unit with a relay controlled by the dimmer's switch.