

LED Driver PLEV-100SxxxST 20090814 A

Features

- Ultra High Efficiency (Up to 93%)
- High Power Factor (0.99 Typical)
- 100W Continuous Output Power
- Lightning Protection
- All-Round Protection: OVP, OCP, SCP, OTP
- Waterproof (IP67)
- Comply With UL8750 & EN61347-1 Safety Regulations



Description

The PLEV-100SxxxST Series operate from a 90 ~ 305 Vac input range. These units will provide up to 100W of output power and a maximum output current of 8.33A for 12V output model. They are designed to be highly efficient and highly reliable. Features include lightning protection, over voltage protection, over current protection, short circuit protection and over temperature protection.

Models

Output Voltage	Input Voltage	Max. Output Current	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number (2)
					110Vac	220Vac	
12 Vdc	90 ~ 305 Vac	8.33 A	100 W	91%	0.99	0.96	PLEV-100S012ST
24 Vdc	90 ~ 305 Vac	4.05 A	100 W	93%	0.99	0.96	PLEV-100S024ST
36 Vdc	90 ~ 305 Vac	2.75 A	100 W	93%	0.99	0.96	PLEV-100S036ST
42 Vdc	90 ~ 305 Vac	2.35 A	100 W	93%	0.99	0.96	PLEV-100S042ST
48 Vdc	90 ~ 305 Vac	1.95 A	100 W	92%	0.99	0.96	PLEV-100S048ST
54 Vdc	90 ~ 305 Vac	1.75 A	100 W	93%	0.99	0.96	PLEV-100S054ST
81 Vdc	90 ~ 305 Vac	1.23 A	100 W	93%	0.99	0.96	PLEV-100S081ST
105 Vdc	90 ~ 305 Vac	0.95 A	100 W	93%	0.99	0.96	PLEV-100S105ST

Note: (1) Measured at full load and 220 Vac input.

(2) A suffix –xxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 V	-	305 V	
Input Frequency	47 Hz	-	63 Hz	
Input AC Current	-	-	1.20 A	Measured at full load and 100 Vac input.
	-	-	0.60 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	65 A	At 230Vac input 25°C Cold Start

Specifications are subject to changes without notice.

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Range	$V_O = 12\text{ V}$	11.40 V	12 V	12.60 V	Measured at the end of output cable, including line, load and temperature regulations.
	$V_O = 24\text{ V}$	22.80 V	24 V	25.20 V	
	$V_O = 36\text{ V}$	34.20 V	36 V	37.80 V	
	$V_O = 42\text{ V}$	39.90 V	42 V	44.10 V	
	$V_O = 48\text{ V}$	45.60 V	48 V	50.40 V	
	$V_O = 54\text{ V}$	51.30 V	54 V	56.70 V	
	$V_O = 81\text{ V}$	76.95 V	81 V	85.05 V	
	$V_O = 105\text{ V}$	99.75 V	105 V	110.25V	
Load Current	$V_O = 12\text{ V}$	0 A	-	8.33 A	
	$V_O = 24\text{ V}$	0 A	-	4.05 A	
	$V_O = 36\text{ V}$	0 A	-	2.75 A	
	$V_O = 42\text{ V}$	0 A	-	2.35 A	
	$V_O = 48\text{ V}$	0 A	-	1.95 A	
	$V_O = 54\text{ V}$	0 A	-	1.75 A	
	$V_O = 81\text{ V}$	0 A	-	1.23 A	
	$V_O = 105\text{ V}$	0 A	-	0.95 A	
Ripple and Noise (pk-pk)		-	-	1.5% V_O	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor.
Line Regulation		-	-	1%	
Load Regulation		-	-	2%	
Turn-on Delay Time		-	-	3 S	
Output Overshoot / Undershoot		-	-	10%	When power on or off.
Load Dynamic Response	Output Deviation	-	-	5% V_O	R/S: 1 A/uS Load: 25% ~ 75% full load.
	Settling Time	-	-	10 mS	

Note: All specifications are typical at 25 °C unless otherwise stated.

Protection Functions

Parameter		Min.	Typ.	Max.	Notes
Over Voltage Protection	$V_O = 12\text{ V}$	14 V	15 V	16 V	Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
	$V_O = 24\text{ V}$	27 V	30 V	34 V	
	$V_O = 36\text{ V}$	40 V	47 V	50 V	
	$V_O = 42\text{ V}$	47 V	52 V	57 V	
	$V_O = 48\text{ V}$	54 V	59 V	63 V	
	$V_O = 54\text{ V}$	60 V	68 V	75 V	
	$V_O = 81\text{ V}$	91 V	95 V	100 V	
	$V_O = 105\text{ V}$	120 V	125 V	140 V	
Over Current Protection		110% I_O	135% I_O	180% I_O	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.
Over Temperature Protection		-	110 °C	-	Maximum temperature of components inside the case.
Short Circuit Protection		No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed.			

Specifications are subject to changes without notice.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency				Measured at full load and 110 Vac input.
$V_O = 12\text{ V}$	88%	89%	-	
$V_O = 24\text{ V}$	90%	91%	-	
$V_O = 36\text{ V}$	89%	90%	-	
$V_O = 42\text{ V}$	90%	91%	-	
$V_O = 48\text{ V}$	89%	90%	-	
$V_O = 54\text{ V}$	90%	91%	-	
$V_O = 81\text{ V}$	90%	91%	-	
$V_O = 105\text{ V}$	90%	91%	-	
Efficiency				Measured at full load and 220 Vac input.
$V_O = 12\text{ V}$	89%	91%	-	
$V_O = 24\text{ V}$	92%	93%	-	
$V_O = 36\text{ V}$	92%	93%	-	
$V_O = 42\text{ V}$	92%	93%	-	
$V_O = 48\text{ V}$	91%	92%	-	
$V_O = 54\text{ V}$	92%	93%	-	
$V_O = 81\text{ V}$	92%	93%	-	
$V_O = 105\text{ V}$	92%	93%	-	
No Load Power Dissipation	≤ 1.5 W			
MTBF	450,000 hours			At 100 Vac input, full load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	100,000 hours			At 25°C ambient temperature.
Dimensions				
Inches (L x W x H)	7.24 x 2.66 x 1.46			
Millimeters (L x W x H)	184 x 67.5 x 37			
Net Weight	-	950 g	-	

Note: All specifications are typical at 25 °C unless otherwise stated.

Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-35 °C	-	+70 °C	Humidity: 10% RH to 100% RH
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH

Safety & EMC Compliance

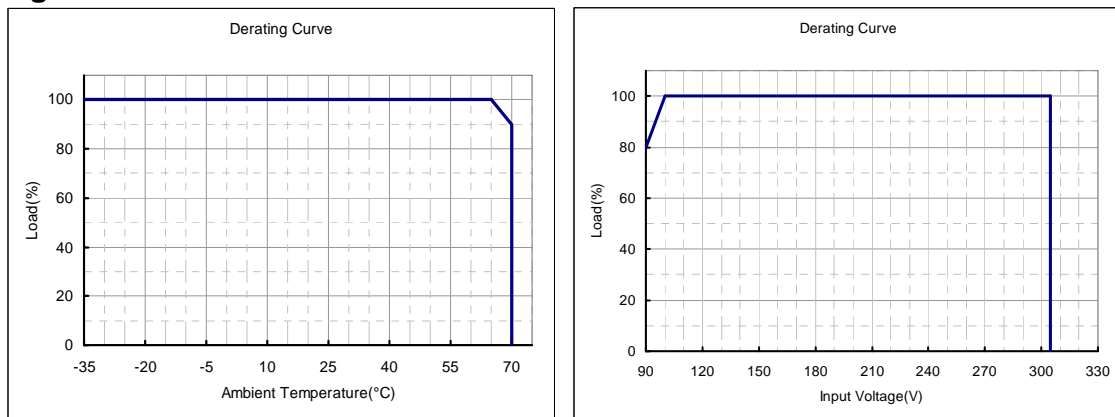
Safety Category	Country	Standard
CUL	USA & Canada	UL8750 Compliance to UL1310 Class2 UL1012 UL935, CAN/CSA-C22.2 No. 0, CSA-C22.2 No. 107.1, CSA-C22.2 No. 250.0
CE	Europe	EN 61347-1, EN61347-2-13
EMI Standards		Notes
EN 55015		Conducted emission Test & Radiated emission Test with 6 dB margin

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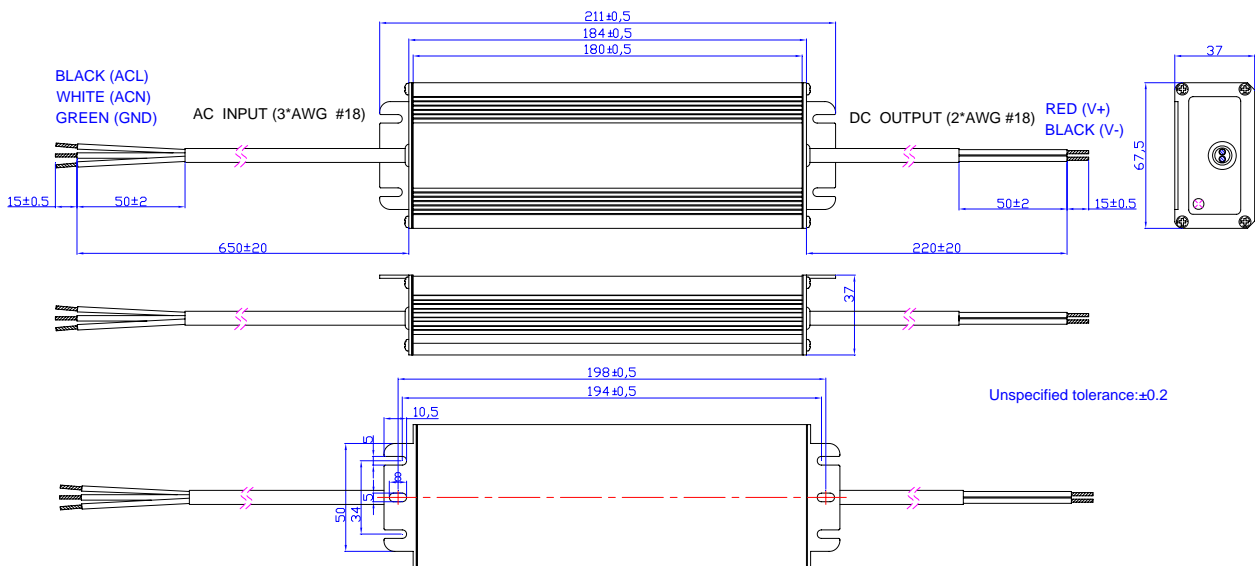
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EMS Standards	Notes
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 2 kV, line to earth 4 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Derating Curve



Mechanical Outline



RoHS Compliance

Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.

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