Features

- High Efficiency up to 93.5%
- Constant Output Voltage
- No Load Power Consumption < 0.5 W
- Excellent Thermal Performance up to 50°C Ambient Temperature
- Input Surge Protection: DM 2 kV
- All-Around Protection: OCP, OVP, OTP, SCP
- Class II
- SELV Output
- 5 Years Warranty

Description

The *LUV-150SxxxSF* is a 150W, constant-voltage LED driver that operates from 90-305 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage. The high efficiency of the driver enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, over current, output over voltage, over temperature, and short circuit.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power	Typical Efficiency (2)	Model Number (3)
12 V	90 ~ 305 Vac/ 127~300 Vdc	0 ~ 12.50 A	150 W	91.0%	LUV-150S012SF
24 V	90 ~ 305 Vac/ 127~300 Vdc	0 ~ 6.25 A	150 W	92.0%	LUV-150S024SF
36 V	90 ~ 305 Vac/ 127~300 Vdc	0 ~ 4.17 A	150 W	92.0%	LUV-150S036SF
48 V	90 ~ 305 Vac/ 127~300 Vdc	0 ~ 3.13 A	150 W	93.0%	LUV-150S048SF

Notes: (1) Certified input voltage range: UL, FCC 100-277Vac; otherwise 100-240Vac.
(2) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(3) SELV output.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90 Vac	-	305 Vac	
Input DC Voltage	127 Vdc	-	300 Vdc	
Input Frequency	47 Hz	-	63 Hz	
Input AC Current	-	-	1.55 A	Measured at 100% load and 120Vac input.
	-	-	0.82 A	Measured at 100% load and 220Vac input.
Inrush Current(I^2t)	-	-	5.40 A^2s	At 220Vac input, 25°C cold start, duration=468 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 100-277Vac, 50-60Hz, 60%-100% Load (90-150W)
THD	-	-	20%	
PF	0.95	-	-	At 220Vac, 50Hz, 100% Load (150W)
THD	-	-	10%	At 220-240Vac, 50-60Hz, 60%-100% Load (90-150W)

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-5%Vo	-	5%Vo	At 100% load condition
Total Output Voltage Ripple (pk-pk)		-	-	2%Vo	At 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor.
Startup Overshoot / Undershoot		-	-	5%Vo	At 100% load condition
Line Regulation		-	-	±1%	Measured at 100% load
Load Regulation		-	-	±2%	
Turn-on Delay Time		-	-	0.5 s	Measured at 120Vac input, 100%Load
		-	-	0.5 s	Measured at 220Vac input, 100%Load
Hold up Time		20 ms	-	-	Measured at 230Vac input, 100%Load
Load Dynamic Response	Output Deviation	-	-	5%Vo	R/S: 1 A/μs Load: 25% ~ 100% load
	Settling Time	-	-	10 ms	
Temperature Coefficient of Vo		-	0.03%/°C	-	Case temperature = 0°C~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: Vo = 12 V Vo = 24 V Vo = 36 V Vo = 48 V	 87.0% 88.0% 87.5% 89.0%	 89.0% 90.0% 89.5% 91.0%	 - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Efficiency at 220Vac input: Vo = 12 V Vo = 24 V Vo = 36 V Vo = 48 V	 89.0% 90.0% 90.0% 91.0%	 91.0% 92.0% 92.0% 93.0%	 - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Efficiency at 277Vac input: Vo = 12 V Vo = 24 V Vo = 36 V Vo = 48 V	 89.5% 90.5% 90.0% 91.5%	 91.5% 92.5% 92.0% 93.5%	 - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
No Load Power	-	-	0.5 W	Measured at 230Vac
MTBF	-	464,000 Hours	-	Measured at 220Vac input, 80%load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	120,000 Hours	-	Measured at 220Vac input, 80%load and 70°C case temperature. See lifetime vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-40 °C	-	+90 °C	
Operating Case Temperature for Warranty Tc_w	-40 °C	-	+70 °C	Case temperature for 5 years warranty Humidity: 10%RH to 90%RH; No condensation
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5%RH to 95%RH; No condensation
Dimensions Inches (L × W × H) Millimeters ((L × W × H)	6.34 x 2.30 x 1.48 161 x 58.5 x 37.5			
Net Weight — LUV-150S012SF	-	660 g	-	
Net Weight — LUV-150S024SF LUV-150S036SF LUV-150S048SF	-	630 g	-	

Specifications are subject to changes without notice. *All specifications are typical at 25°C unless otherwise stated.*

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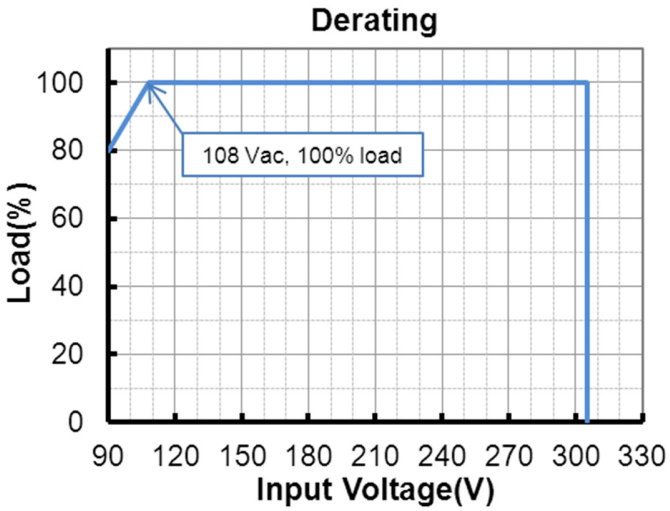
Safety & EMC Compliance

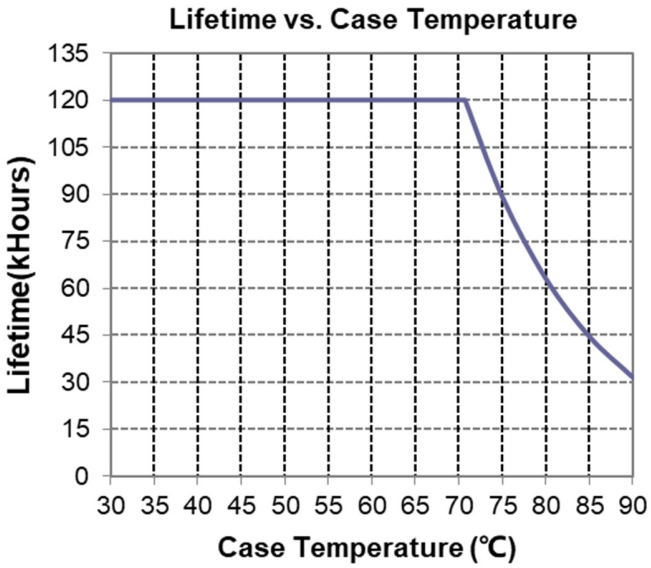
Safety Category	Standard
UL/CUL	UL 8750,CAN/CSA-C22.2 No. 250.13
ENEC & CE	EN 61347-1(1), EN 61347-2-13
UKCA	BS EN 61347-1(1), BS EN 61347-2-13
CB	IEC 61347-1(1), IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
SAA	AS/NZS 61347.1, AS/NZS 61347.2.13
Performance	**Standard**
ENEC	EN 62384
EMI Standards	**Notes**
BS EN/EN IEC 55015/GB/T 17743(2)	Conducted emission Test &Radiated emission Test
BS EN/EN IEC 61000-3-2/GB 17625.1	Harmonic current emissions
BS EN/EN 61000-3-3	Voltage fluctuations & flicker
FCC Part 15(2)	ANSI C63.4 Class B
	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: [1] this device may not cause harmful interference, and [2] this device must accept any interference received, including interference that may cause undesired operation.
EMS Standards	**Notes**
BS EN/EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
BS EN/EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
BS EN/EN 61000-4-4	Electrical Fast Transient / Burst-EFT
BS EN/EN 61000-4-5	Surge Immunity Test: AC Power Line: Differential Mode 2 kV
BS EN/EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
BS EN/EN 61000-4-8	Power Frequency Magnetic Field Test
BS EN/EN 61000-4-11	Voltage Dips
BS EN/EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Notes: (1) This product meets the requirements for EN/BS EN/IEC 61347-1 [Annex O (Double insulation)].
(2) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

Derating



Lifetime vs. Case Temperature



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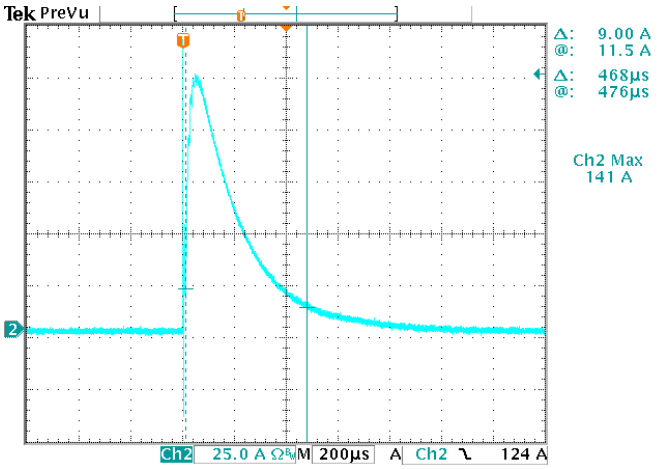
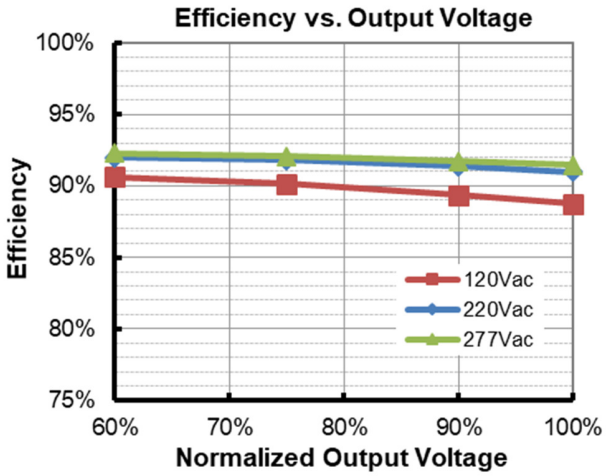
Inrush Current Waveform

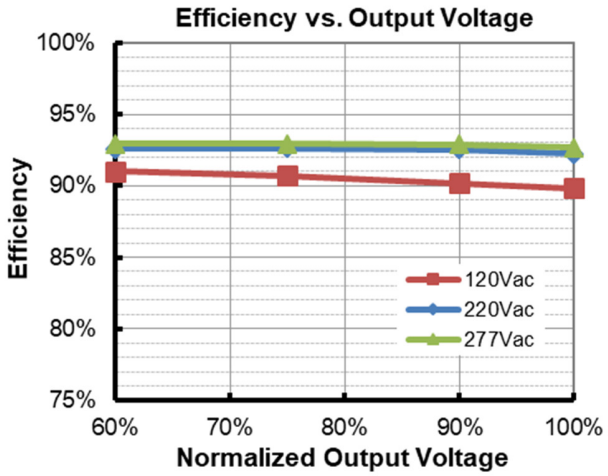


Efficiency vs. Load

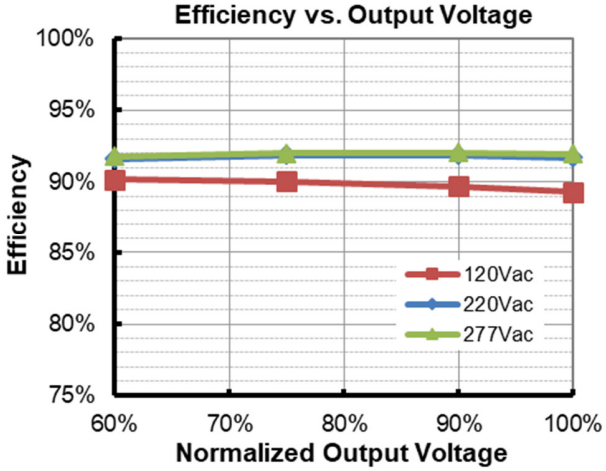
LUV-150S012SF



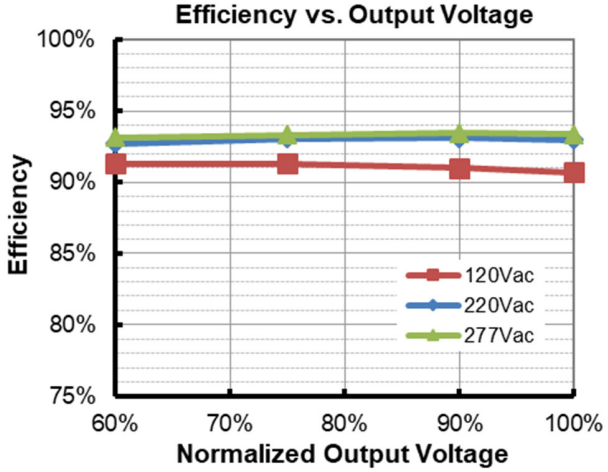
LUV-150S024SF



LUV-150S036SF



LUV-150S048SF



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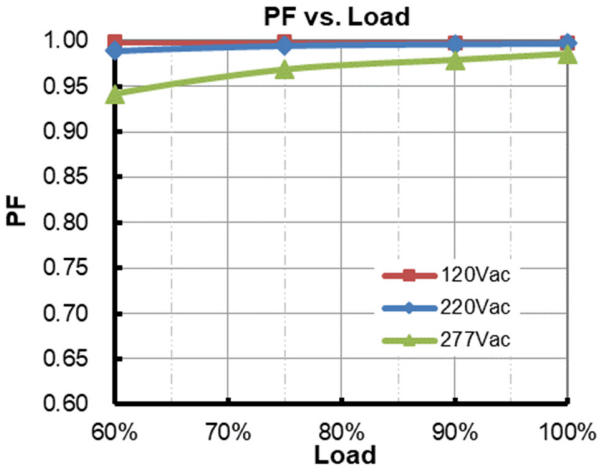
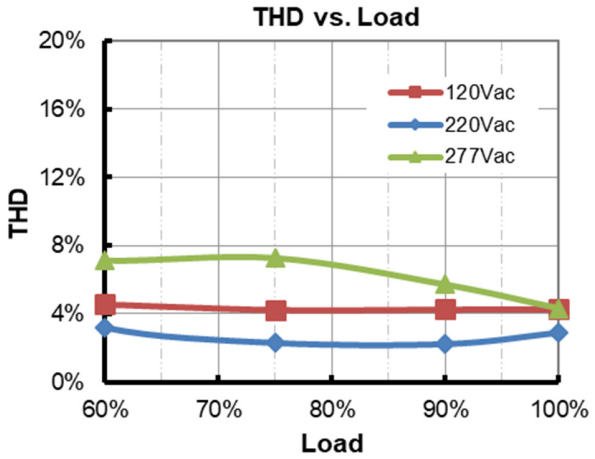
Power Factor



Total Harmonic Distortion

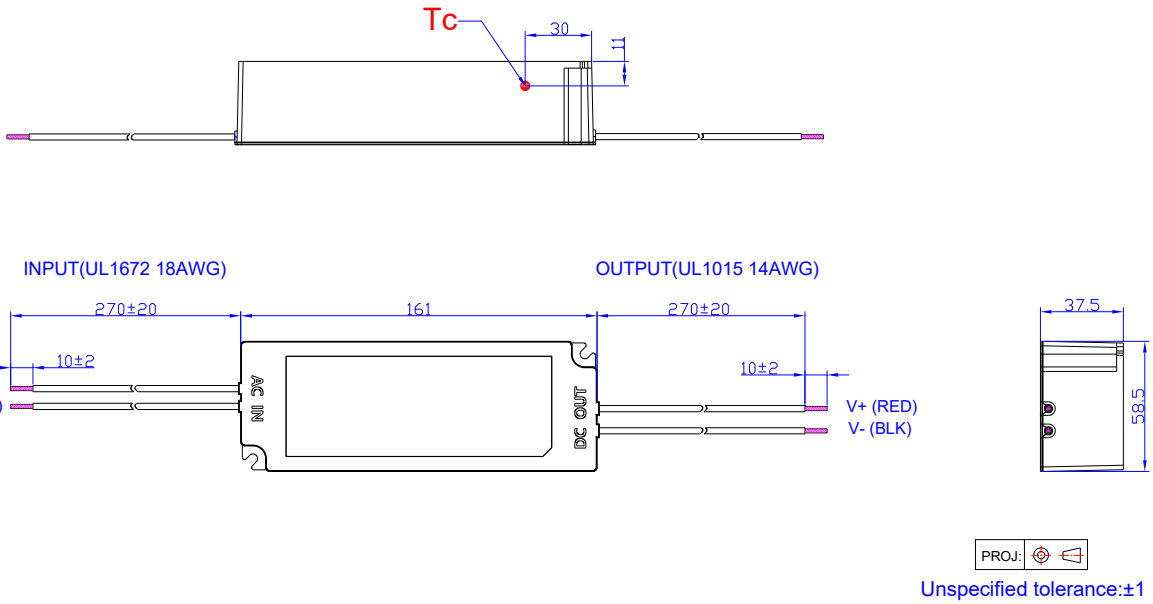


Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.
Short Circuit Protection	Auto Recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.

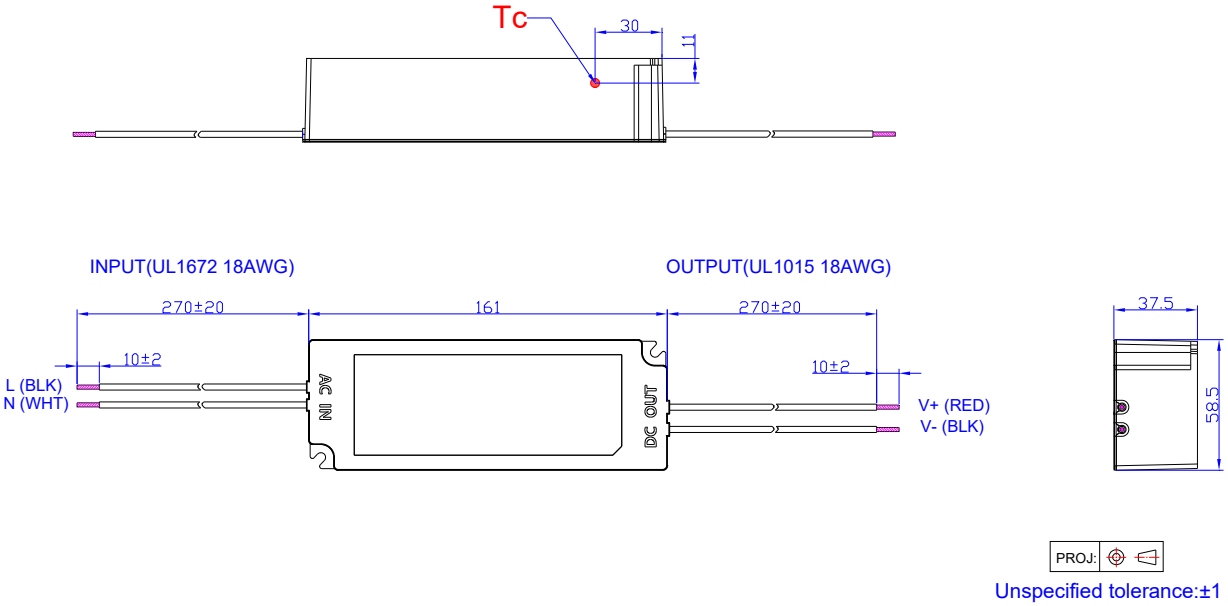
Mechanical Outline

LUV-150S012SF



Unspecified tolerance:±1

LUV-150S024SF/LUV-150S036SF/LUV-150S048SF



Unspecified tolerance:±1

RoHS Compliance

Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2023-08-15	A	Datasheet Release	/	/