

Features

- Ultra High Efficiency (Up to 93%)
- Constant Voltage Output
- Input Surge Protection: DM 6kV, CM 10kV
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67 and UL Dry / Damp / Wet Location
- SELV Output
- TYPE HL, for Use in a Class I, Division 2 Hazardous (Classified) Location
- 5 Years Warranty



Description

The EUV-600SxxxST series is a 600W, constant-voltage IP67 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 and compact metal case enable 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, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power	Typical Efficiency (2)	Power Factor		Model Number (3)
					120Vac	220Vac	
48 Vdc	90~305 Vac 127~300 Vdc	0 ~ 12.5 A	600 W	92.5%	0.95	0.90	EUV-600S048ST
54 Vdc	90~305 Vac 127~300 Vdc	0 ~ 11.2 A	600 W	93.0%	0.95	0.90	EUV-600S054ST

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 Voltage	90 Vac	-	305 Vac	127~300 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 MIU	UL8750; 277Vac/60Hz
	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz, grounding effectively
Input AC Current	-	-	6.15 A	Measured at 100% load and 120 Vac input.
	-	-	3.25 A	Measured at 100% load and 220 Vac input.
Inrush Current(I ² t)	-	-	3.82 A ² s	At 220Vac input, 25°C cold start, duration=6.68ms, 10%I _{pk} -10%I _{pk} . See Inrush Current Waveform for the details.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
PF	0.90	-	-	At 100-277Vac, 50-60Hz, 60%-100%load (360 - 600W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100%load (450 - 600W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes	
Output Voltage Tolerance	-2.5%Vo	-	2.5%Vo	At 100% load condition	
Output Voltage Ripple (pk-pk)	-	-	2%Vo	At 0% - 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 µF ceramic capacitor and a 10 µF electrolytic capacitor.	
Output Voltage Overshoot / Undershoot	-	-	5%Vo		
Line Regulation	-	-	±0.5%	Measured at 100% load	
Load Regulation	-	-	±1.0%		
Turn-on Delay Time	-	-	0.5 s	Measured at 120Vac input, 60%-100% Load	
	-	-	0.5 s	Measured at 220Vac input, 60%-100% Load	
Load Dynamic Response	Output Deviation	-	-	5%Vo	R/S: 1 A/µs Load: 25% ~ 100% load.
	Settling Time	-	-	10 ms	
Temperature Coefficient	-	0.03%/°C	-	Case temperature = 0°C ~ Tc max	

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

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120Vac input: EUV-600S048ST EUV-600S054ST	88.5% 89.0%	90.5% 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: EUV-600S048ST EUV-600S054ST	90.5% 91.0%	92.5% 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: EUV-600S048ST EUV-600S054ST	91.0% 91.5%	93.0% 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.)
MTBF	-	201,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Lifetime	-	106,000 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	-	+75°C	Case temperature for 5 years warranty. Humidity: 10% RH to 100% RH.
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	9.84 × 5.67 × 1.91 250 × 144 × 48.5			With mounting ear 10.83 × 5.67 × 1.91 275 × 144 × 48.5
Net Weight	-	3320 g	-	

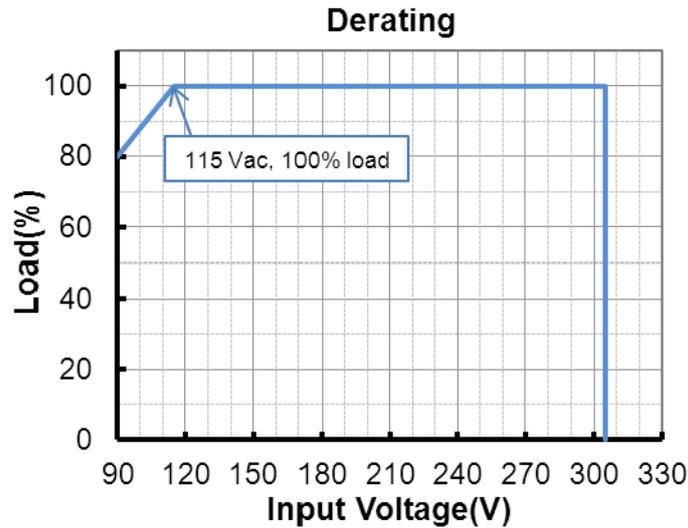
Note: All specifications are typical at 25 °C unless otherwise stated.

Safety & EMC Compliance

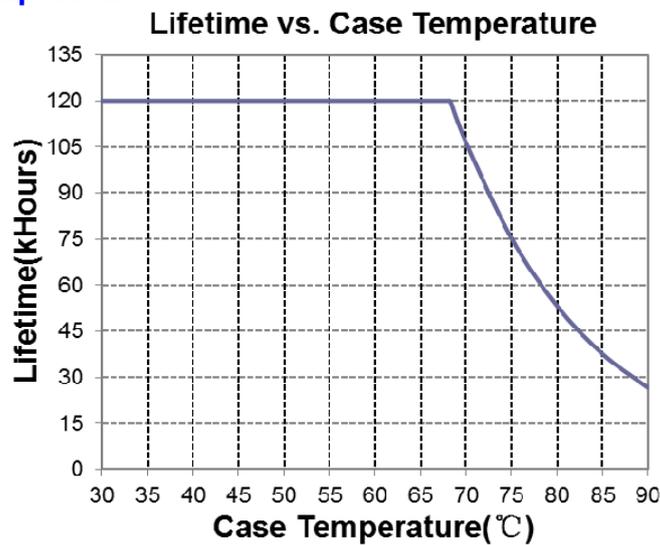
Safety Category	Standard
UL/CUL	UL8750, CAN/CSA-C22.2 No. 250.13
CE	EN 61347-1,EN 61347-2-13
EMI Standards	Notes
EN 55015 ⁽¹⁾	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
FCC Part 15 ⁽¹⁾	ANSI C63.4 Class B This device 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
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: Differential Mode 6 kV, Common Mode 10 kV ⁽²⁾
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

- Notes:** (1) 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.
- (2) To perform electric strength (hi-pot) testing, the “GDT ground disconnect” (nut and metal lock sheet) on the driver end-cap should be removed temporarily to prevent the internal gas discharge tube from conducting (as allowed by IEC 60598-1 Clause 10.2). After testing is completed, these items must be reinstalled to restore line-to-earth surge protection and secure the end cap.

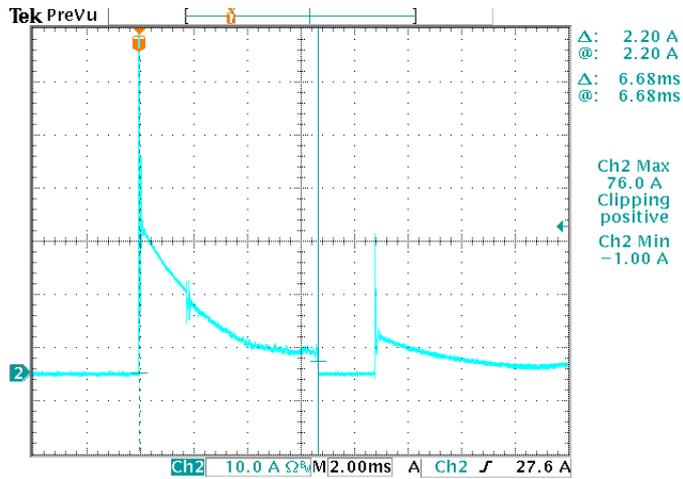
Derating



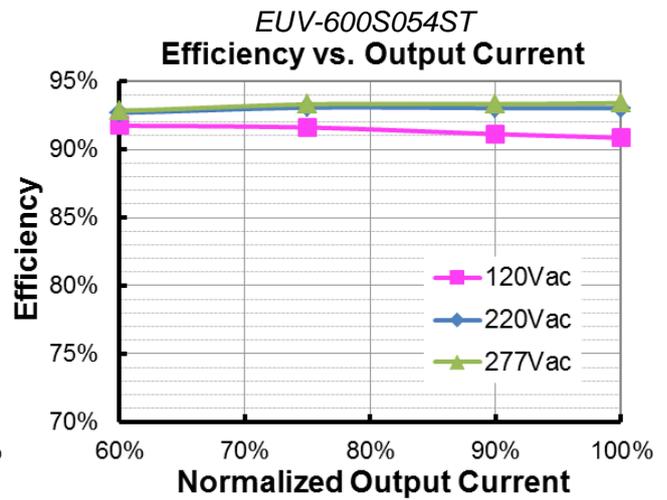
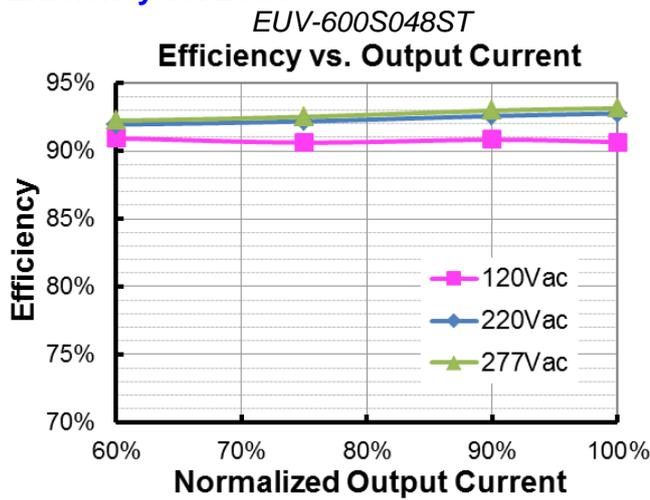
Lifetime vs. Case Temperature



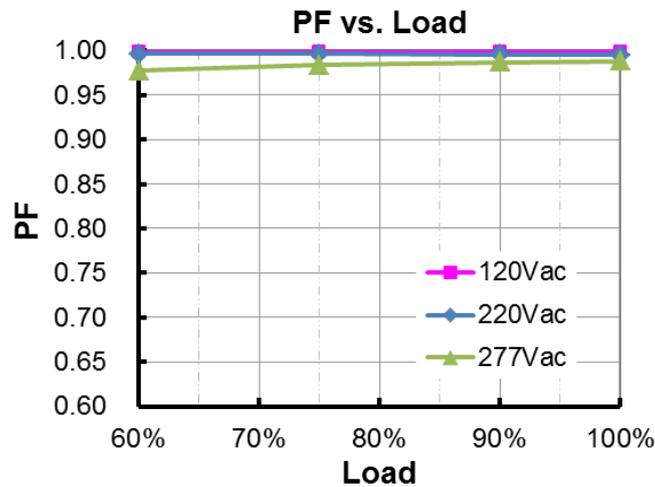
Inrush Current Waveform



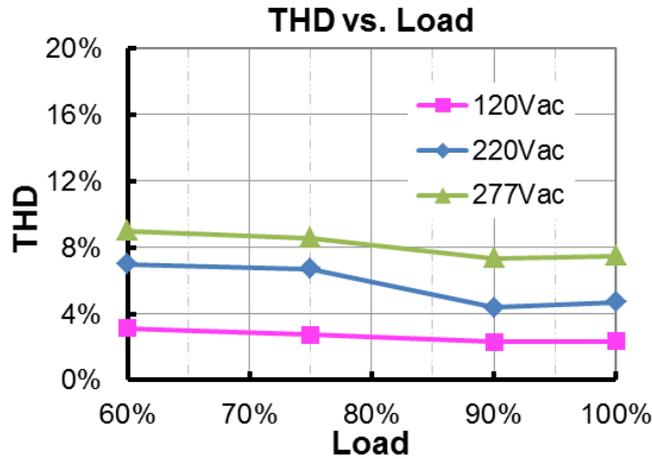
Efficiency vs. Load



Power Factor



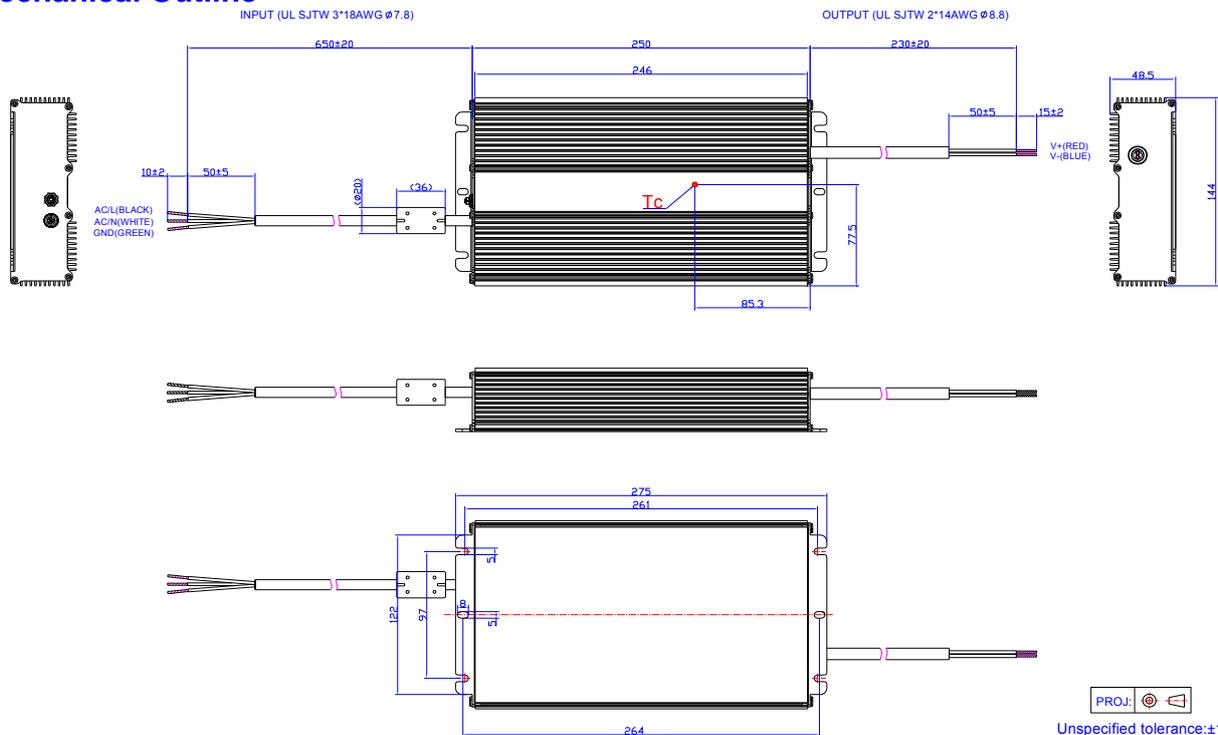
Total Harmonic Distortion



Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Current Protection	105% _{Io}	110% _{Io}	120% _{Io}	Constant current limiting, recovers automatically after fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.			
Short Circuit Protection	Auto Recovery. Constant current limiting, recovers automatically after fault condition is removed.			
Over Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.			

Mechanical Outline



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
2019-11-06	A	Datasheet Release	/	/
2019-12-17	B	Models	Power Factor	Updated
		Safety &EMC Compliance	EN 61000-4-5	Updated