

## Features

- High Efficiency (Up to 93%)
- Constant Voltage Output
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: OVP, OCP, SCP, OTP
- IP67 and UL Dry / Damp / Wet Location
- SELV
- TYPE HL, for use in a Class I, Division 2 hazardous (Classified) location
- 5 Years Warranty



## Description

The EUV-150SxxxST series 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 high bay, tunnel and roadway, etc. The high efficiency of these drivers and compact metal case enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, output over voltage, over current, short circuit, and over temperature.

## Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power	Typical Efficiency (2)	Typical Power Factor		Model Number (3)
					110Vac	220Vac	
12 Vdc	90 ~ 305 Vac	0~12.5 A	150 W	92%	0.99	0.96	EUV-150S012ST
24 Vdc	90 ~ 305 Vac	0~6.25 A	150 W	93%	0.99	0.96	EUV-150S024ST
36 Vdc	90 ~ 305 Vac	0~4.17 A	150 W	93%	0.99	0.96	EUV-150S036ST
42 Vdc	90 ~ 305 Vac	0~3.57 A	150 W	93%	0.99	0.96	EUV-150S042ST
48 Vdc	90 ~ 305 Vac	0~3.13 A	150 W	93%	0.99	0.96	EUV-150S048ST
54 Vdc	90 ~ 305 Vac	0~2.78 A	150 W	93%	0.99	0.96	EUV-150S054ST

**Notes:** (1) UL Certified input voltage range: 100-277Vac; otherwise 100-240Vac (except KS).

(2) Measured at 100% load and 220 Vac input.

(3) SELV output.

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 MIU	UL8750; 277Vac/ 60Hz, grounding effectively
	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz, grounding effectively

## Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Input AC Current	-	-	1.93 A	Measured at 100% load and 100 Vac input.
	-	-	0.85 A	Measured at 100% load and 220 Vac input
Inrush Current(I <sup>2</sup> t)	-	-	1.5 A <sup>2</sup> s	At 220Vac input, 25°C cold start, duration=1.2 ms, 10%I <sub>pk</sub> -10%I <sub>pk</sub> .
PF	0.90	-	-	At 100-277Vac, 50-60Hz, 100% Load
THD	-	-	20%	

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes	
Output Voltage Tolerance	-2.5%	-	2.5%	EUV-150S042ST. At 100% load condition.	
	-5%	-	5%	Others. At 100% load condition.	
Ripple and Noise (pk-pk)	-	-	2% V <sub>O</sub>	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor.	
Output Overshoot / Undershoot	-	-	10%	When power on or off.	
Line Regulation	-	-	± 1%	At 100% load condition.	
Load Regulation	-	-	± 2%		
Turn-on Delay Time	-	0.9 s	1.5 s	Measured at 110Vac input, 100% Load	
	-	0.5 s	1.0 s	Measured at 220Vac input, 100% Load	
Load Dynamic Response	Output Deviation	-	-	5% V <sub>O</sub>	R/S: 1 A/ uS Load: 25% ~ 75% 100% load.
	Settling Time	-	-	10 mS	
Temperature coefficient	-	0.03%/°C	-	Case temperature = 0°C ~T <sub>c</sub> max	

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 110 Vac input: V <sub>O</sub> = 12 V V <sub>O</sub> = 24 V V <sub>O</sub> = 36 V V <sub>O</sub> = 42 V V <sub>O</sub> = 48 V V <sub>O</sub> = 54 V	88% 89% 89% 89% 89% 89%	89% 90% 90% 90% 90% 90%	- - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)
Efficiency at 220 Vac input: V <sub>O</sub> = 12 V V <sub>O</sub> = 24 V V <sub>O</sub> = 36 V V <sub>O</sub> = 48 V V <sub>O</sub> = 42 V V <sub>O</sub> = 54 V	91% 92% 92% 92% 92% 92%	92% 93% 93% 93% 93% 93%	- - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)

## General Specifications (Continued)

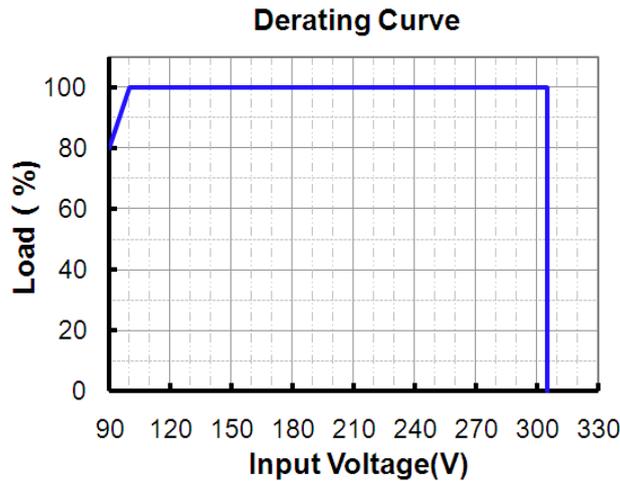
Parameter	Min.	Typ.	Max.	Notes
No Load Power Dissipation	-	-	3 W	
MTBF	-	260,900 hours	-	Measured at 110Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	77,200 hours	-	Measured at 220Vac input, 80%Load and 60°C case temperature; See life time vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-35 °C	-	+90 °C	@90-305 Vac
	-40°C	-	+90 °C	@198-305 Vac
Operating Case Temperature for Warranty Tc_w	-35 °C	-	+65 °C	@90-305 Vac, Case temperature for 5 years warranty Humidity: 10%RH to 95%RH
	-40 °C	-	+65 °C	@198-305 Vac, Case temperature for 5 years warranty Humidity: 10%RH to 95%RH
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5%RH to 95%RH
Dimensions				With mounting ear
Inches (L × W × H)	7.83 × 2.66 × 1.56			8.90 × 2.66 × 1.56
Millimeters (L × W × H)	199 × 67.5 × 39.5			226 × 67.5 × 39.5
Net Weight	-	1100 g	-	

## Safety & EMC Compliance

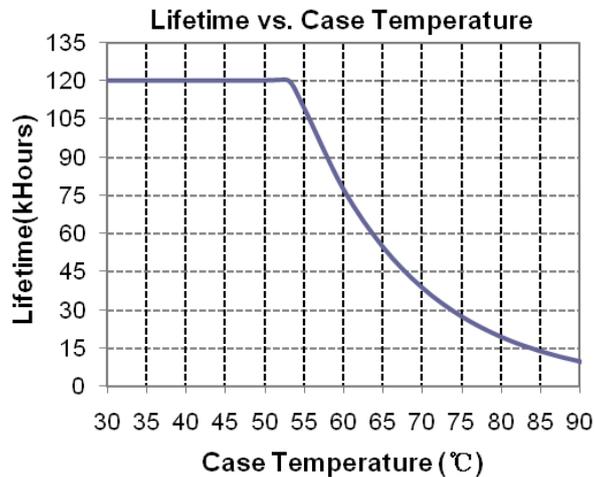
Safety Category	Standard
UL/CUL	UL 8750, CAN/CSA-C22.2 No. 250.13
CE	EN 61347-1, EN 61347-2-13
KS	KS C 7655
EMI Standards	Notes
EN 55015 <sup>(1)</sup>	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
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 4 kV, Common Mode 6 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

**Note:** (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 Curve



## Lifetime vs. Case Temperature Curve

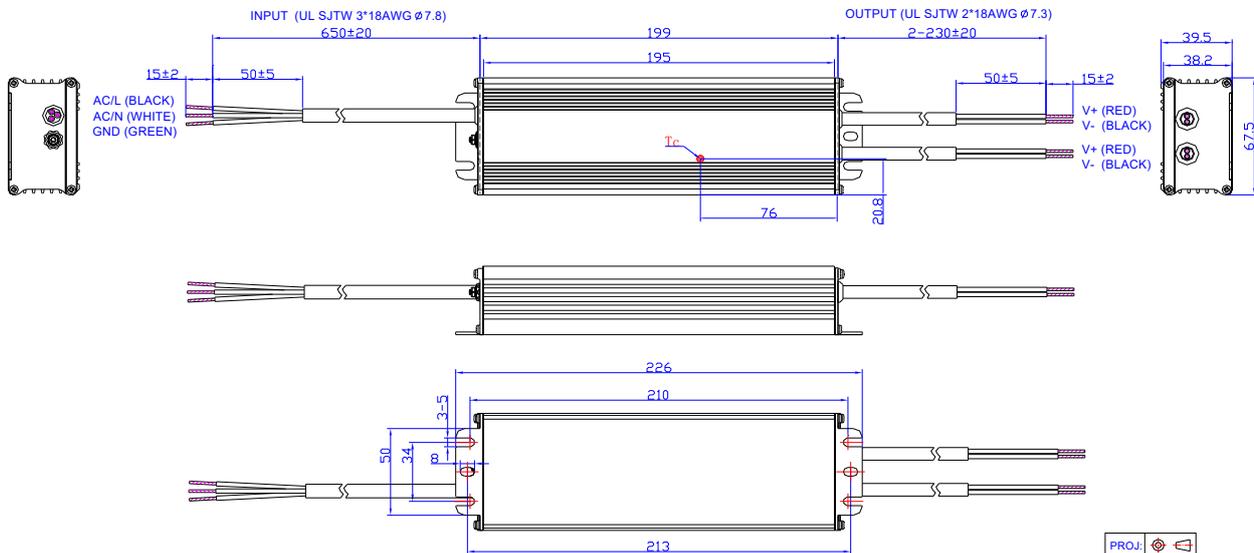


## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Current Protection	110% I <sub>o</sub>	135% I <sub>o</sub>	200% I <sub>o</sub>	Hiccup mode. The power supply 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	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

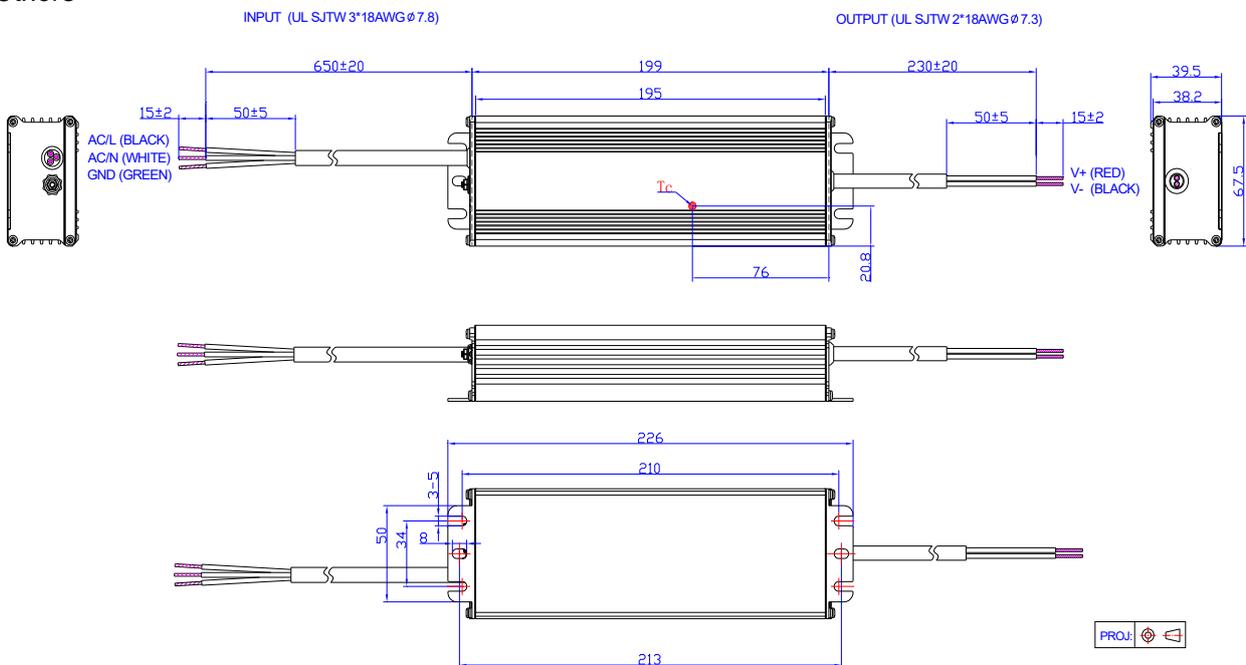
EUV-150S012ST



Unspecified tolerance: $\pm$ 1

**Note:** The 2 DC output cables are connected in parallel internally because one AWG #18 wire can only carry 10A. Please connect the 2 red wires together and 2 black wires together in application, or ensure each cable carries same current.

## Others



Unspecified tolerance: $\pm$ 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		
2009-08-14	A	Change Max. Output Current and Efficiency.				
2009-09-02	B	Change MTBF and Life Time.				
2009-09-11	C	Change Turn-on Delay Time				
2009-10-15	D	Delete "UL1310 Class2" in Safety & EMC Compliance				
2009-11-10	E	Change notes of efficiency. Change "No Load Power Dissipation".				
2009-11-13	F	Add the Mechanical Outline of 12V.				
2009-12-16	G	Add note for mechanical outline.				
2010-05-31	H	Add star rank for recommended models	/	★: Popular model.		
		Add Leakage Current in Input Specifications	/	Max. 1 mA At 277Vac 50Hz input		
		Standardize the tolerance in Mechanical Outline	/	/		
2011-12-09	I	EUV-150S020ST	/	Add New Model		
2012-06-12	J	Models Vo = 40 V Vo = 50 V Vo = 52 V Vo = 56 V Vo = 81 V Vo = 105 V	/	Deleted		
		Turn-on delay time	0.6 s	1.0 s	0.9 s	1.5 s
			0.3 s	0.6 s	0.5 s	1.0 s
		Efficiency of EUV-150S020ST @ 110 Vac	/	1 % lower		
		MTBF	584,000 Hours	250,000 Hours		
		Life time	/	50,000 Hours at Tc 60°C		
		Life time Curve	/	Added		
Mechanical outline	/	Updated				
2012-7-17	K	Max Case Temperature	/	Updated		
2012-8-24	L	EN61000-4-5	line to line 2 kV, line to earth 4 kV	line to line 4 kV, line to earth 6 kV		
		Min PF	/	Added		
		Max THD	/	Added		
		Temperature Co-efficient	/	Added		
		42V Model	/	Deleted		
		Inrush Current(I <sup>2</sup> t)	/	Added		

## Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2012-10-12	M	Life Time Typical Value	69,000 hours	77,200 hours
		Life Time Curve	/	Updated
2013-01-18	N	No Load Power Dissipation	2 W	3 W
2013-11-26	O	Input Specifications--Load Range of PF & THD	75%load-100%load	100%load
2015-09-11	P	Format	/	Updated
		External Grounding Screw Solution	/	/
		Features	/	Updated
		Description	/	Updated
		Models	EUV-150S042ST	Added
		Models	EUV-150S020ST	Delete
		General Specifications	Case Temperature	Operating Case Temperature for Safety T <sub>c_s</sub>
		General Specifications	Operating Case Temperature for Warranty T <sub>c_w</sub>	Added
		General Specifications	Storage Temperature	Added
		Environmental Specifications	/	Delete
		Safety & EMC Compliance	/	Updated
		Protection Functions	/	Updated
Mechanical Outline	/	Updated		
2017/11/14	Q	KS	/	Added
		Features	5 years warranty	Added
		Input Specifications	Leakage Current	Updated
		PF/THD	Notes	Updated
		Turn-on Delay Time	Notes	Updated
		Temperature coefficient	Max 0.02%/°C	Typ 0.03%/°C
		General Specifications	Operating Case Temperature for Safety T <sub>c_s</sub>	Updated
		General Specifications	Operating Case Temperature for Warranty T <sub>c_w</sub>	Updated
		General Specifications	With mounting ear	Added
		Safety & EMC Compliance	/	Updated
		Mechanical Outline	/	Updated

## Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2019-03-18	R	Header	outdoor	IP67
		Description	/	Updated
		General Specifications - Net Weight	1000g	1100g
2020-01-06	S	Features	4kV line-line, 6kV line-earth	DM 4kV, CM 6kV
		Features	Waterproof (IP67)	IP67
		Safety &EMC Compliance	EN 61000-4-5	Updated
		Derating Curve	Ambient Temperature(°C)	Deleted
		RoHS Compliance	/	Updated
		Format	Page footer	Updated
2021-07-16	T	Mechanical Outline	/	Updated