

## Features

- High Efficiency (Up to 93.0%)
- Constant Voltage Output
- Input Surge Protection: 4kV line-line, 6kV line-earth
- All-Around Protection: OVP, OCP, SCP, OTP
- Waterproof (IP67) and UL Dry / Damp / Wet Location
- SELV Output
- TYPE HL, for use in a Class I, Division 2 hazardous (Classified) location



## Description

The EUV-300SxxxST series is a 300W, 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, high mast, sports and roadway. 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)	Power Factor		Model Number (3)
					110Vac	220Vac	
12 Vdc	90 ~ 305 Vac	0~22.9 A	275 W	91.5%	0.99	0.93	EUV-300S012ST
24 Vdc	90 ~ 305 Vac	0~12.5 A	300 W	91.0%	0.99	0.96	EUV-300S024ST
28 Vdc	90 ~ 305 Vac	0~10.71 A	300 W	91.5%	0.99	0.96	EUV-300S028ST
36 Vdc	90 ~ 305 Vac	0~8.33 A	300 W	92.0%	0.99	0.96	EUV-300S036ST
42 Vdc	90 ~ 305 Vac	0~7.14 A	300 W	92.0%	0.99	0.96	EUV-300S042ST
48 Vdc	90 ~ 305 Vac	0~6.25 A	300 W	92.5%	0.99	0.96	EUV-300S048ST
54 Vdc	90 ~ 305 Vac	0~5.56 A	300 W	93.0%	0.99	0.96	EUV-300S054ST

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

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

(3) SELV output

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage Range	90 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 mA	At 277Vac 60Hz input , grounding effectively
Input AC Current	-	-	3.6 A	Measured at 100% load and 100 Vac input.
	-	-	1.6 A	Measured at 100% load and 220 Vac input.

## Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current(I <sup>2</sup> t)	-	-	2.33 A <sup>2</sup> s	At 220Vac input, 25°C cold start, duration=3 ms, 10%Ipk-10%Ipk.
Power Factor	0.90	-	-	At 100-277Vac, 50-60Hz,75%-100% load (225-300W)
THD	-	-	20%	

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-5%	-	5%	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	-	-	±3%	
Turn-on Delay Time	-	0.4 s	1.0 s	Measured at 110Vac input,75%-100%load
	-	0.4 s	1.0 s	Measured at 220Vac input,75%-100%load
Load Dynamic Response	Output Deviation	-	-	5% V <sub>O</sub>
	Settling Time	-	-	10 mS
				R/S: 1 A / uS Load: 25% ~ 75% load.
Temperature Coefficient	-	-	0.02%/°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 110 Vac input:				Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.5% lower if measured immediately after startup.)
V <sub>O</sub> = 12 V	89.0%	89.5%	-	
V <sub>O</sub> = 24 V	88.5%	89.0%	-	
V <sub>O</sub> = 28 V	89.0%	89.5%	-	
V <sub>O</sub> = 36 V	89.5%	90.0%	-	
V <sub>O</sub> = 42 V	90.5%	91.0%	-	
V <sub>O</sub> = 48 V	90.5%	91.0%	-	
V <sub>O</sub> = 54 V	91.0%	91.5%	-	
Efficiency at 220 Vac input:				Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.5% lower if measured immediately after startup.)
V <sub>O</sub> = 12 V	91.0%	91.5%	-	
V <sub>O</sub> = 24 V	90.5%	91.0%	-	
V <sub>O</sub> = 28 V	91.0%	91.5%	-	
V <sub>O</sub> = 36 V	91.5%	92.0%	-	
V <sub>O</sub> = 42 V	91.5%	92.0%	-	
V <sub>O</sub> = 48 V	92.0%	92.5%	-	
V <sub>O</sub> = 54 V	92.5%	93.0%	-	
No Load Power Dissipation	-	-	5 W	
MTBF	-	278,000 hours	-	Measured at 110Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)

## General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Lifetime	-	58,000 hours	-	Measured at 220Vac input, 80%Load ,Case temperature=60°C @ Tc point. See life time 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	-	+60 °C	
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH
Dimensions Inches (L x W x H) Millimeters (L x W x H)	8.82 x 3.86 x 1.75 224 x 98 x 44.5			With mounting ear 9.88 x 3.86 x 1.75 251 x 98 x 44.5
Net Weight	-	1700g	-	

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

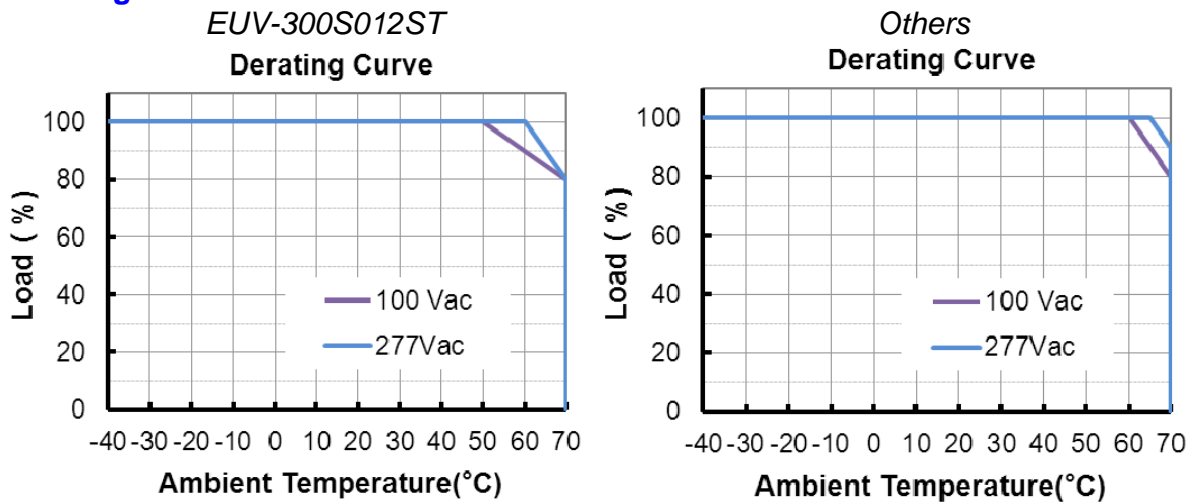
## Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL8750, CAN/CSA-C22.2 No. 250.13
CE	EN 61347-1, EN61347-2-13
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: line to line 4 kV, line to earth 6 kV <sup>(2)</sup>
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

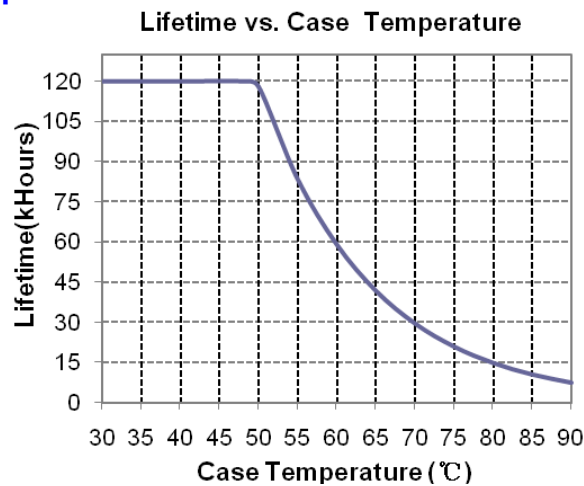
**Note:** (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(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

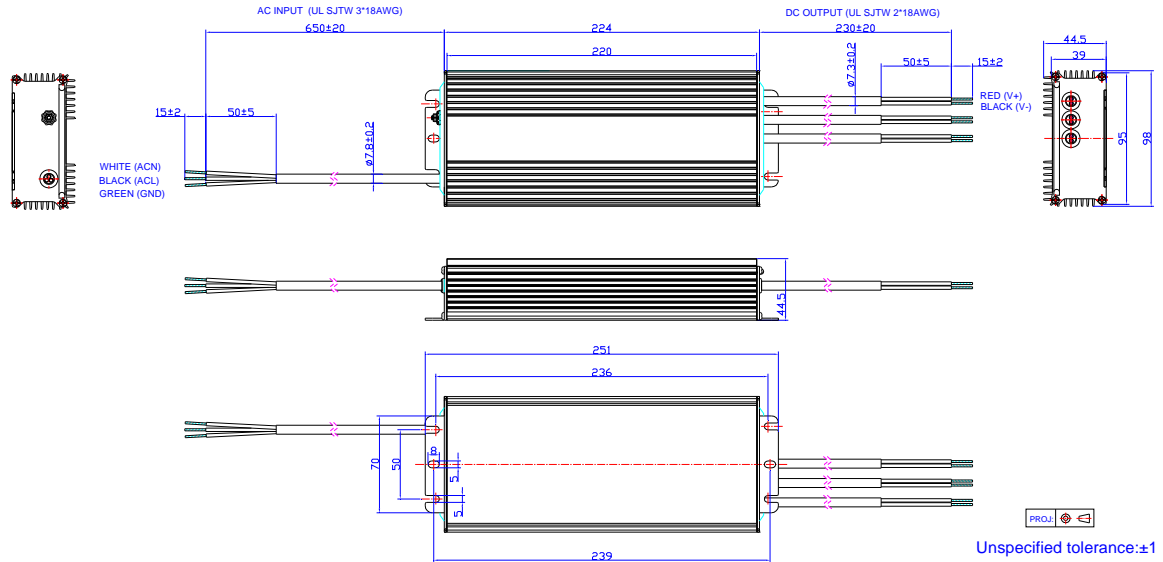


## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Current Protection	130% I <sub>o</sub>	165% 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.			

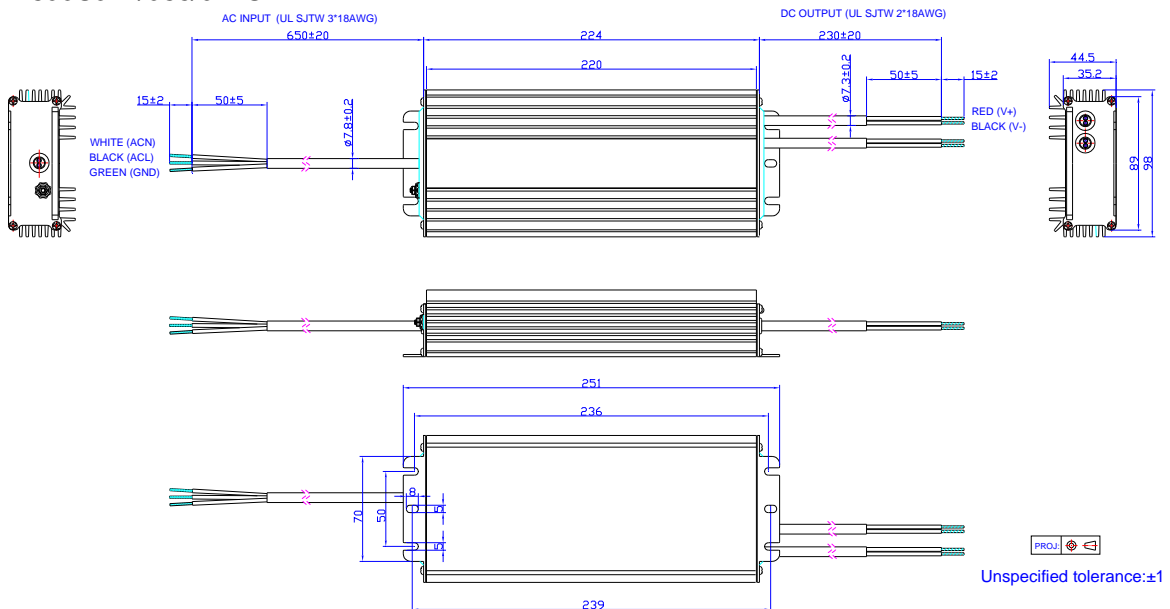
## Mechanical Outline

### EUV-300S012ST



**Note:** The 3 DC output cables are connected in parallel internally because one AWG #18 wire can only carry 10A. Please connect the 3 red wires together and 3 black wires together in application, or ensure each cable carries same current.

### EUV-300S024/036/042ST



**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.



## Revision History

Change Date	Rev.	Description of Change																																				
		Item	From	To																																		
2009-10-15	A	Delete "UL1310 Class2" in Safety & EMC Compliance Change the efficiency of 12V.																																				
2009-10-23	B	Change the Max. Output Current and Power of 12V. Change the description of Short Circuit Protection																																				
2009-11-10	C	Change notes of efficiency.																																				
2009-12-04	D	Update Mechanical Outline.																																				
2009-12-16	E	Add note for mechanical outline.																																				
2010-03-11	F	Add a new model of 28V																																				
		Add Leakage Current in Input Specifications	/	Max. 0.75 Ma At 277Vac 50Hz input																																		
		Standardize the tolerance in Mechanical Outline	/	/																																		
2010-05-31	G	Add star rank for recommended model	/	☆: Popular model.																																		
2011-01-14	H	Update MTBF & Life Time Data	For One Model	For Two Models																																		
2011-07-20	I	MTBF	Delete 24V	Add 28V																																		
		Life	Use Tcase data to replace the old test condition																																			
2012-3-27	J	Notes of Life time	/	/																																		
2012-5-04	H	Typ. Efficiency @220 Vac																																				
		<table border="0"> <tr><td>V<sub>o</sub> = 12 V</td><td>91.5%</td><td>91.5%</td></tr> <tr><td>V<sub>o</sub> = 24 V</td><td>93.0%</td><td>91.0%</td></tr> <tr><td>V<sub>o</sub> = 28 V</td><td>94.0%</td><td>91.5%</td></tr> <tr><td>V<sub>o</sub> = 36 V</td><td>94.0%</td><td>92.0%</td></tr> <tr><td>V<sub>o</sub> = 42 V</td><td>93.5%</td><td>93.0%</td></tr> <tr><td>V<sub>o</sub> = 48 V</td><td>93.5%</td><td>93.5%</td></tr> <tr><td>V<sub>o</sub> = 52 V</td><td>93.5%</td><td>93.5%</td></tr> <tr><td>V<sub>o</sub> = 54 V</td><td>94.0%</td><td>94.0%</td></tr> <tr><td>V<sub>o</sub> = 56 V</td><td>94.0%</td><td>94.0%</td></tr> <tr><td>V<sub>o</sub> = 60 V</td><td>94.0%</td><td>94.0%</td></tr> <tr><td>V<sub>o</sub> = 84 V</td><td>94.0%</td><td>94.0%</td></tr> <tr><td>V<sub>o</sub> = 105 V</td><td>94.0%</td><td>94.0%</td></tr> </table>	V <sub>o</sub> = 12 V	91.5%	91.5%	V <sub>o</sub> = 24 V	93.0%	91.0%	V <sub>o</sub> = 28 V	94.0%	91.5%	V <sub>o</sub> = 36 V	94.0%	92.0%	V <sub>o</sub> = 42 V	93.5%	93.0%	V <sub>o</sub> = 48 V	93.5%	93.5%	V <sub>o</sub> = 52 V	93.5%	93.5%	V <sub>o</sub> = 54 V	94.0%	94.0%	V <sub>o</sub> = 56 V	94.0%	94.0%	V <sub>o</sub> = 60 V	94.0%	94.0%	V <sub>o</sub> = 84 V	94.0%	94.0%	V <sub>o</sub> = 105 V	94.0%	94.0%
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		V <sub>o</sub> = 150 V	94.0%	94.0%																																		
		Life time & MTBF	/	Corrected																																		
2012-06-13	I	Models																																				
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Life time curve		/	Added																																			
Mechanical Outline		/	Updated																																			
		EN61000-4-5	line to line 2 kV, line to earth 4 kV	line to line 4 kV, line to earth 6 kV																																		
2012-7-17	J	Max Case Temperature	/	Updated																																		
2012-8-10	K	Life time	/	Updated																																		
2012-11-15	L	Operating Temperature	-35 °C	-40 °C																																		
		Derating Curve	/	Updated																																		

## Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2013-01-05	M	Inrush current	50°	150°
		Min PF and max THD	/	Added
		Temperature coefficient	/	Added
		MTBF	Min 250,000 hours	Typ.278,000 hours
		Life time	Min 50,000 hours	Typ.58,000 hours
		Life time curve	/	Updated
		Input AC current@100Vac	Max 3.3°	Typ3.3°, Max3.5°
2013-02-26	N	Efficiency of 48V, 54V	/	0.5%lower
2013-03-11	O	Over Current Protection	110%,155%,180%	130%,165%,200%
2013-12-13	P	Turn-on delay time	0.1s,0.2s	0.4s,1.0s
2014-09-25	Q	Derating curve	/	Updated
		Derating curve of EUV-300S012ST	/	Added
		Mechanical outline of EUV-200S012ST	/	Updated
2015-09-07	R	Format	/	Updated
		External Grounding Screw Solution	/	/
		Features	/	Updated
		Description	/	Updated
		Models	EUV-300S042ST	Added
		General Specifications	Case Temperature	Operating Case Temperature for Safety Tc_s
		General Specifications	Operating Case Temperature for Warranty Tc_w	Added
		Safety & EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
2019-03-01	S	Header	outdoor	IP67
		Description	/	Updated
		Models	notes	Updated
		Input Specifications	Power Factor/ THD	Updated
		General Specifications - Net Weight	1540g	1700g
		General Specifications	With mounting ear	Added
		Safety & EMC Compliance	Note	Added