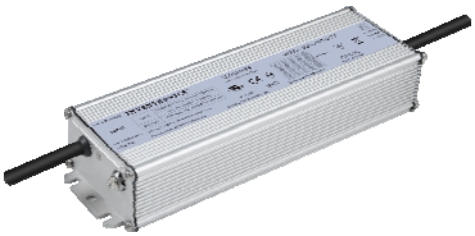
Features

- Ultra High Efficiency (Up to 93.5%)
- Full Power at Wide Output Current Range (Constant Power)
- Adjustable Output Current (AOC) with Dip-switch
- Non-dimming Control
- Input Surge Protection: 6kV line-line, 10kV line-earth
- All-Around Protection: OVP, 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
- 5 Years Warranty



Description

The *EUP-240SxxxST* series is a 240W, constant-current, AOC IP67 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, short circuit, and over temperature.

Models

Adjustable Output Current Range	Full-Power Current Range (1)	Default Output Current	Input Voltage Range(2)	Output Voltage Range	Max. Output Power	Typical Efficiency (3)	Power Factor		Model Number (4)
							120Vac	220Vac	
500-1050mA	700-1050mA	700 mA	90~305 Vac/ 127~300 Vdc	114~343Vdc	240W	93.5%	0.99	0.96	EUP-240S105ST
850-1500mA	1050-1500mA	1050 mA	90~305 Vac/ 127~300 Vdc	80~229Vdc	240W	93.5%	0.99	0.96	EUP-240S150ST
1000-2100mA	1400-2100mA	1400 mA	90~305 Vac/ 127~300 Vdc	57~171Vdc	240W	93.5%	0.99	0.96	EUP-240S210ST
2000-4200mA	2800-4200mA	4200 mA	90~305 Vac/ 127~300 Vdc	29 ~ 86Vdc	240W	92.5%	0.99	0.96	EUP-240S420ST(5)
3400-6700mA	4600-6700mA	6700 mA	90~305 Vac/ 127~300 Vdc	18 ~ 52Vdc	240W	92.0%	0.99	0.96	EUP-240S670ST(5)

Notes: (1) Output current range with constant power at 240W
(2) Certified input voltage range: UL, FCC 100-277Vac or 127-300Vdc; otherwise 100-240Vac or 127-250Vdc (except KS)
(3) Measured at 100% load and 220Vac input (see below "General Specifications" for details).
(4) All the models are certificated to KS，except EUP-240S105ST
(5) SELV Output

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	127~300 Vdc
Input Frequency	47 Hz	-	63 Hz	

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Leakage Current	-	-	0.75 MIU	UL8750; 277Vac/ 60Hz
	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz,
Input AC Current	-	-	2.5 A	Measured at 100% load and 120 Vac input.
	-	-	1.3 A	Measured at 100% load and 220 Vac input.
Inrush Current(I^2t)	-	-	3.20 A^2s	At 220Vac input, 25°C cold start, duration=960 µs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 100-277Vac, 50-60Hz, 70%-100% Load (168-240W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load (180-240W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	100% load
Output Current Setting(Ioset) Range				
EUP-240S105ST	500 mA	-	1050 mA	
EUP-240S150ST	850 mA	-	1500 mA	
EUP-240S210ST	1000 mA	-	2100 mA	
EUP-240S420ST	2000 mA	-	4200 mA	
EUP-240S670ST	3400 mA	-	6700 mA	
Output Current Setting Range with Constant Power				
EUP-240S105ST	700 mA	-	1050 mA	
EUP-240S150ST	1050 mA	-	1500 mA	
EUP-240S210ST	1400 mA	-	2100 mA	
EUP-240S420ST	2800 mA	-	4200 mA	
EUP-240S670ST	4600 mA	-	6700 mA	
Total Output Current Ripple (pk-pk)	-	5%Iomax	10%Iomax	100% load. 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	2%Iomax	-	100% load
Startup Overshoot Current	-	-	10%Iomax	100% load
No Load Output Voltage				
EUP-240S105ST	-	-	390 V	
EUP-240S150ST	-	-	270 V	
EUP-240S210ST	-	-	200 V	
EUP-240S420ST	-	-	110 V	
EUP-240S670ST	-	-	70 V	
Line Regulation	-	-	±0.5%	100% load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	-	1.0 s	Measured at 120Vac input, 70%-100% Load
	-	-	0.5 s	Measured at 220Vac input, 70%-100% Load

Output Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Temperature Coefficient of loset	-	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 120 Vac input:				
EUP-240S105ST				
Io= 700 mA	88.5%	90.5%	-	
Io=1050 mA	87.5%	89.5%	-	
EUP-240S150ST				
Io=1050 mA	88.5%	90.5%	-	
Io=1500 mA	87.5%	89.5%	-	Measured at 100% load and steady-state
EUP-240S210ST				temperature in 25°C ambient;
Io=1400 mA	88.5%	90.5%	-	(Efficiency will be about 2.0% lower if
Io=2100 mA	87.0%	89.0%	-	measured immediately after startup.)
EUP-240S420ST				
Io=2800 mA	87.5%	89.5%	-	
Io=4200 mA	85.5%	87.5%	-	
EUP-240S670ST				
Io=4600 mA	87.0%	89.0%	-	
Io=6700 mA	85.0%	87.0%	-	
Efficiency at 220 Vac input:				
EUP-240S105ST				
Io= 700 mA	91.5%	93.5%	-	
Io=1050 mA	90.0%	92.0%	-	
EUP-240S150ST				
Io=1050 mA	91.5%	93.5%	-	
Io=1500 mA	90.0%	92.0%	-	Measured at 100% load and steady-state
EUP-240S210ST				temperature in 25°C ambient;
Io=1400 mA	91.5%	93.5%	-	(Efficiency will be about 2.0% lower if
Io=2100 mA	90.0%	92.0%	-	measured immediately after startup.)
EUP-240S420ST				
Io=2800 mA	90.5%	92.5%	-	
Io=4200 mA	88.5%	90.5%	-	
EUP-240S670ST				
Io=4600 mA	90.0%	92.0%	-	
Io=6700 mA	88.0%	90.0%	-	
Efficiency at 277 Vac input:				
EUP-240S105ST				
Io= 700 mA	92.0%	94.0%	-	
Io=1050 mA	90.5%	92.5%	-	
EUP-240S150ST				
Io=1050 mA	92.0%	94.0%	-	
Io=1500 mA	90.5%	92.5%	-	Measured at 100% load and steady-state
EUP-240S210ST				temperature in 25°C ambient;
Io=1400 mA	92.0%	94.0%	-	(Efficiency will be about 2.0% lower if
Io=2100 mA	90.5%	92.5%	-	measured immediately after startup.)
EUP-240S420ST				
Io=2800 mA	91.0%	93.0%	-	
Io=4200 mA	89.0%	91.0%	-	
EUP-240S670ST				
Io=4600 mA	90.5%	92.5%	-	
Io=6700 mA	88.5%	90.5%	-	

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
MTBF	-	241,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	84,000 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	-	+88°C	
Operating Case Temperature for Warranty Tc_w	-40°C	-	+75°C	Case temperature for 5 years warranty
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	8.35 × 2.66 × 1.56 212 × 67.5 × 39.7			With mounting ear 9.17 × 2.66 × 1.56 233 × 67.5 × 39.7
Net Weight	-	1200 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, EN61347-2-13
KS	KS C 7655
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: line to line 6 kV, line to earth 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

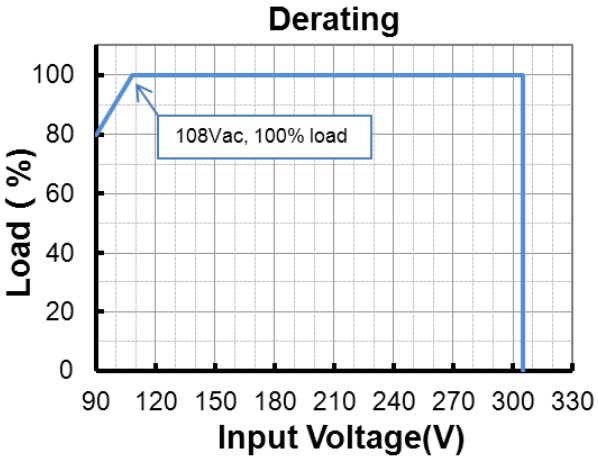
Safety &EMC Compliance (Continued)

EMS Standards	Notes
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

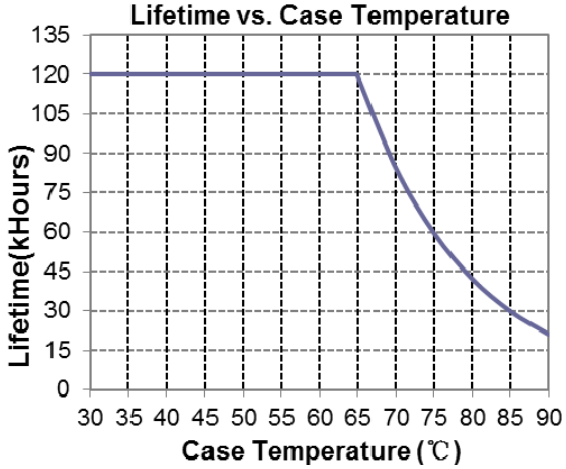
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(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.

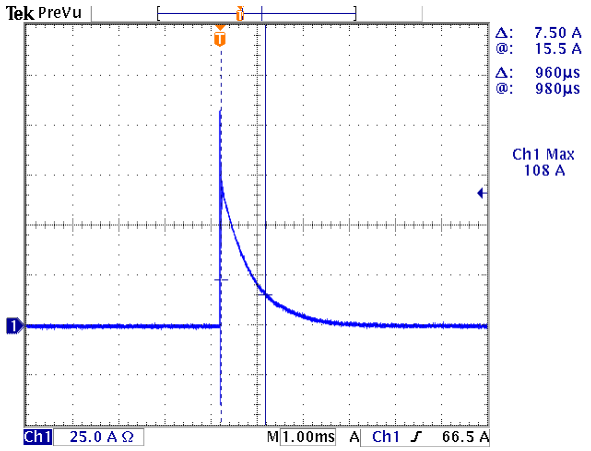
Derating



Lifetime vs. Case Temperature

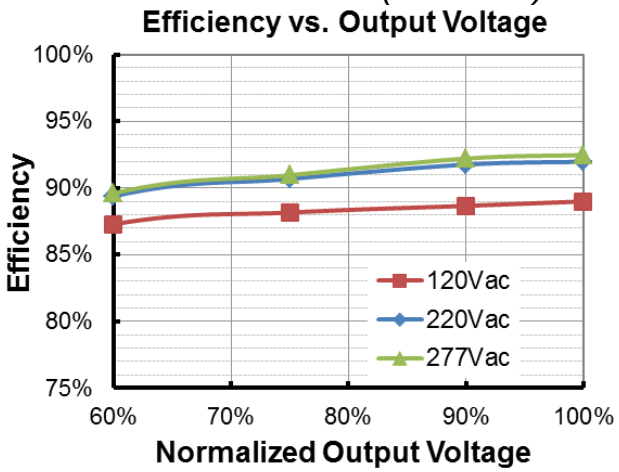


Inrush Current Waveform

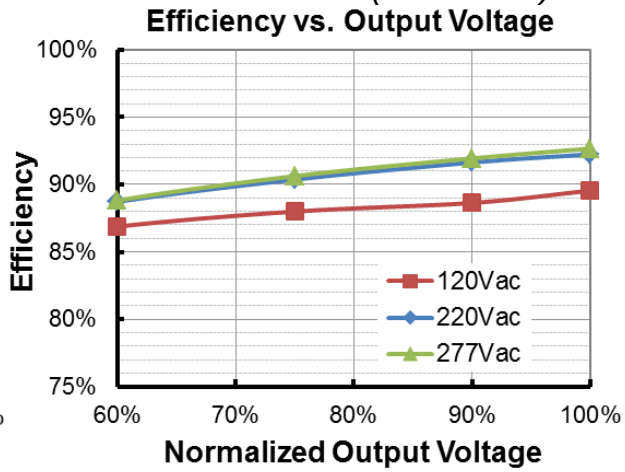


Efficiency vs. Load

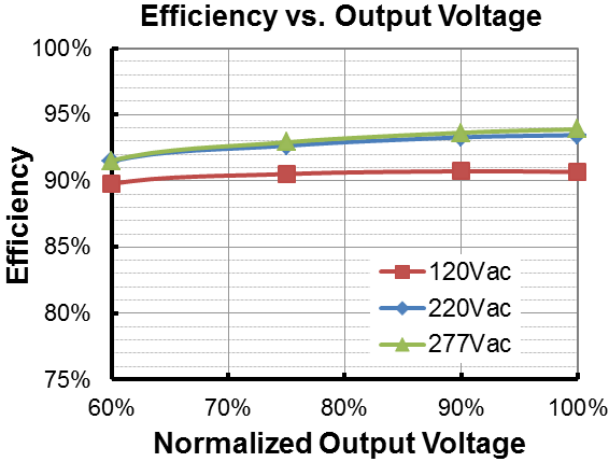
EUP-240S105ST(Io=700mA)



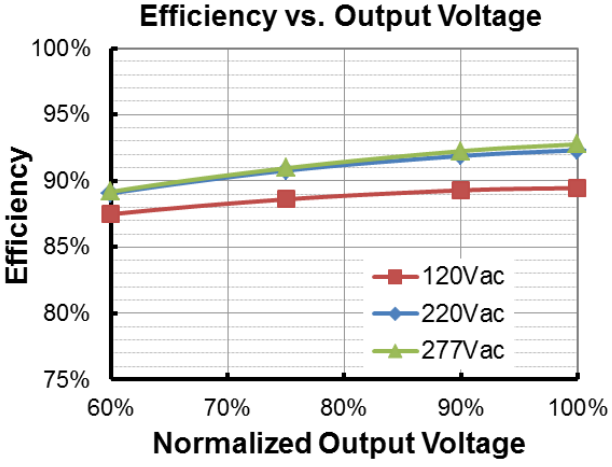
EUP-240S105ST(Io=1050mA)



EUP-240S150ST(Io=1050mA)



EUP-240S150ST(Io=1500mA)



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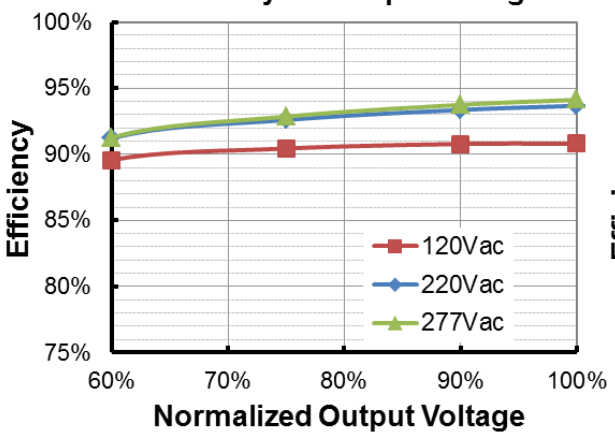
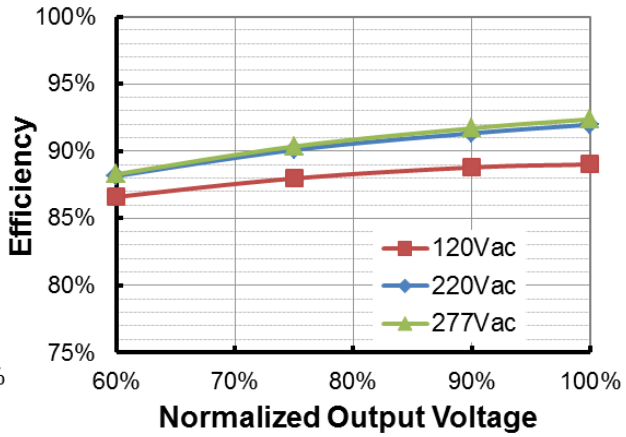
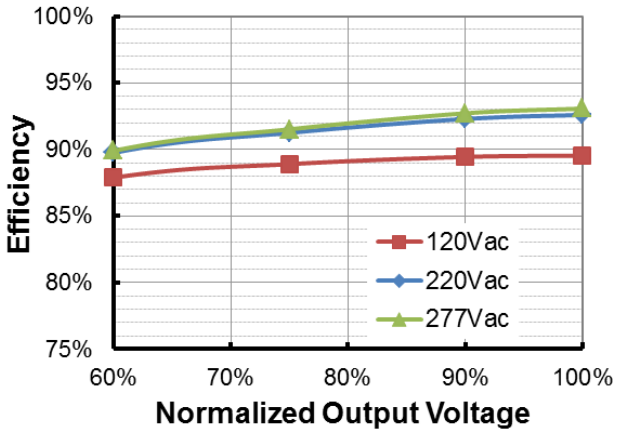
EUP-240S210ST(Io=1400mA)



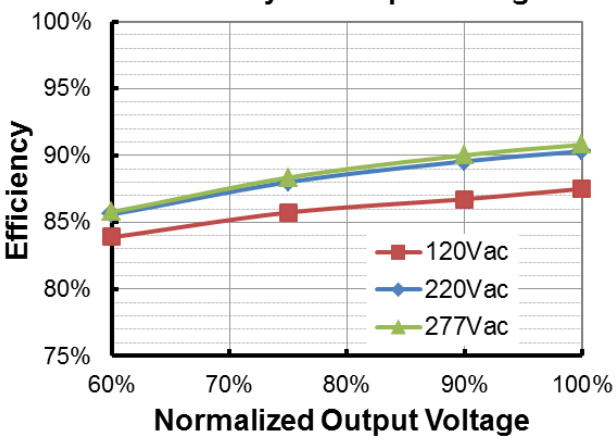
EUP-240S210ST(Io=2100mA)



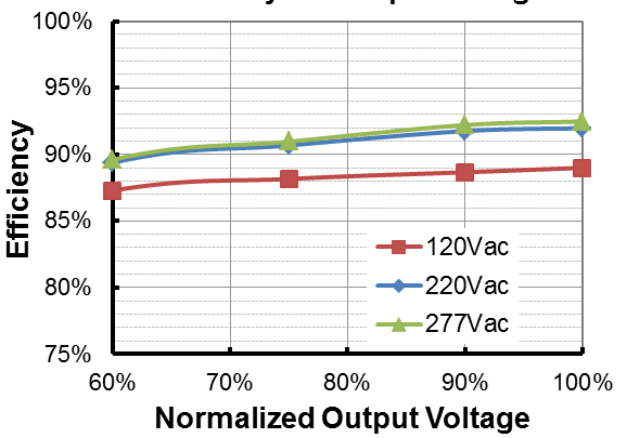
EUP-240S420ST(Io=2800mA)



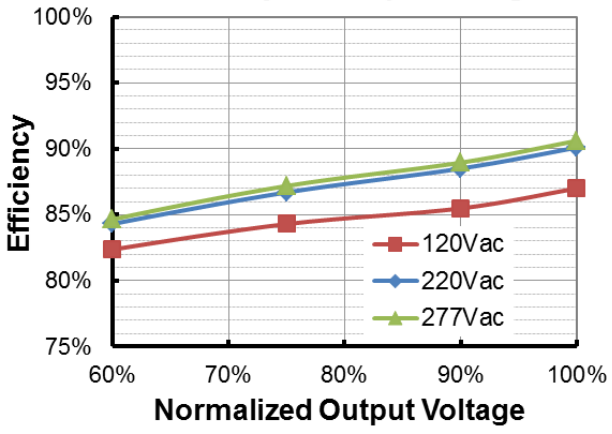
EUP-240S420ST(Io=4200mA)



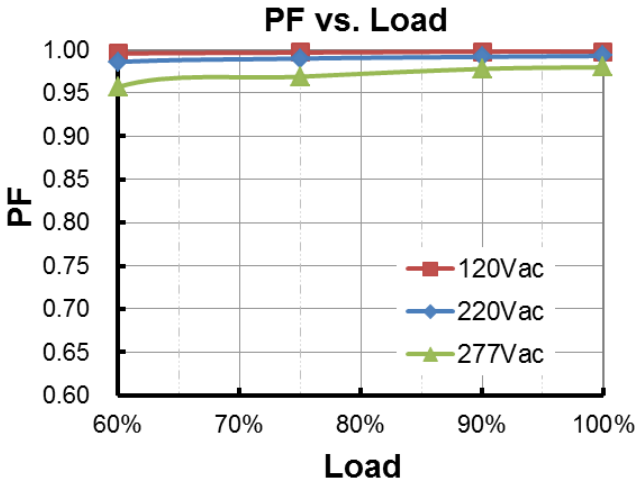
EUP-240S670ST(Io=4600mA)



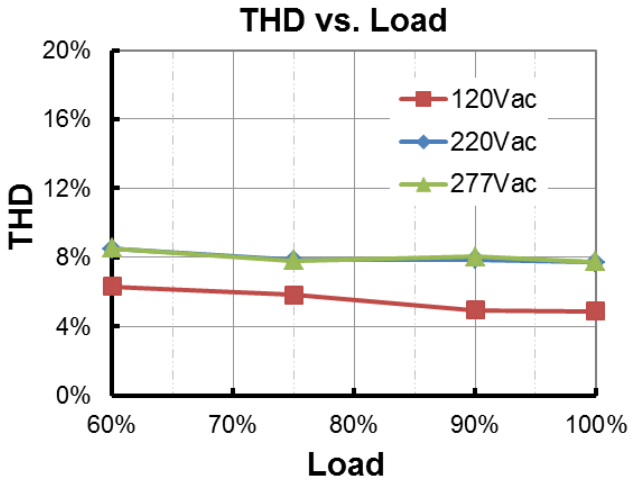
EUP-240S670ST(Io=6700mA)



Power Factor



Total Harmonic Distortion



Protection Functions

Parameter	Notes
Over Temperature Protection	Decreases output current, 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.

Output Current vs. Dip Switch Setting

- **EUP-240S105ST**

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	1050mA	114V	228V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	1000mA	120V	240V	
ON	ON	OFF	ON	950mA	127V	253V	
ON	ON	OFF	OFF	900mA	134V	267V	
ON	OFF	ON	ON	850mA	141V	282V	
ON	OFF	ON	OFF	800mA	150V	300V	
ON	OFF	OFF	ON	750mA	160V	320V	
ON	OFF	OFF	OFF	700mA	172V	343V	
OFF	ON	ON	ON	650mA	185V	343V	Output Current Setting with Power Derating.
OFF	ON	ON	OFF	600mA	200V	343V	
OFF	ON	OFF	ON	550mA	218V	343V	
OFF	ON	OFF	OFF	500mA	240V	343V	

● EUP-240S150ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	1500mA	80V	160V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	1450mA	83V	165V	
ON	ON	OFF	ON	1400mA	86V	171V	
ON	ON	OFF	OFF	1350mA	89V	178V	
ON	OFF	ON	ON	1300mA	93V	185V	
ON	OFF	ON	OFF	1250mA	96V	192V	
ON	OFF	OFF	ON	1200mA	100V	200V	
ON	OFF	OFF	OFF	1150mA	105V	209V	
OFF	ON	ON	ON	1100mA	109V	218V	
OFF	ON	ON	OFF	1050mA	115V	229V	
OFF	ON	OFF	ON	1000mA	120V	229V	Output Current Setting with Power Derating.
OFF	ON	OFF	OFF	950mA	127V	229V	
OFF	OFF	ON	ON	900mA	134V	229V	
OFF	OFF	ON	OFF	850mA	142V	229V	

● EUP-240S210ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	2100mA	57V	114V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	2000mA	60V	120V	
ON	ON	OFF	ON	1900mA	63V	126V	
ON	ON	OFF	OFF	1800mA	67V	133V	
ON	OFF	ON	ON	1700mA	71V	141V	
ON	OFF	ON	OFF	1600mA	75V	150V	
ON	OFF	OFF	ON	1500mA	80V	160V	
ON	OFF	OFF	OFF	1400mA	86V	171V	
OFF	ON	ON	ON	1300mA	92V	171V	Output Current Setting with Power Derating.
OFF	ON	ON	OFF	1200mA	100V	171V	
OFF	ON	OFF	ON	1100mA	109V	171V	
OFF	ON	OFF	OFF	1000mA	120V	171V	

● EUP-240S420ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	4200mA	29V	57V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	4000mA	30V	60V	
ON	ON	OFF	ON	3800mA	32V	63V	
ON	ON	OFF	OFF	3600mA	34V	66.5V	
ON	OFF	ON	ON	3400mA	36V	70.5V	
ON	OFF	ON	OFF	3200mA	38V	75V	
ON	OFF	OFF	ON	3000mA	40V	80V	
ON	OFF	OFF	OFF	2800mA	43V	86V	
OFF	ON	ON	ON	2600mA	46V	86V	Output Current Setting with Power Derating.
OFF	ON	ON	OFF	2400mA	50V	86V	
OFF	ON	OFF	ON	2200mA	55V	86V	
OFF	ON	OFF	OFF	2000mA	60V	86V	

● EUP-240S670ST

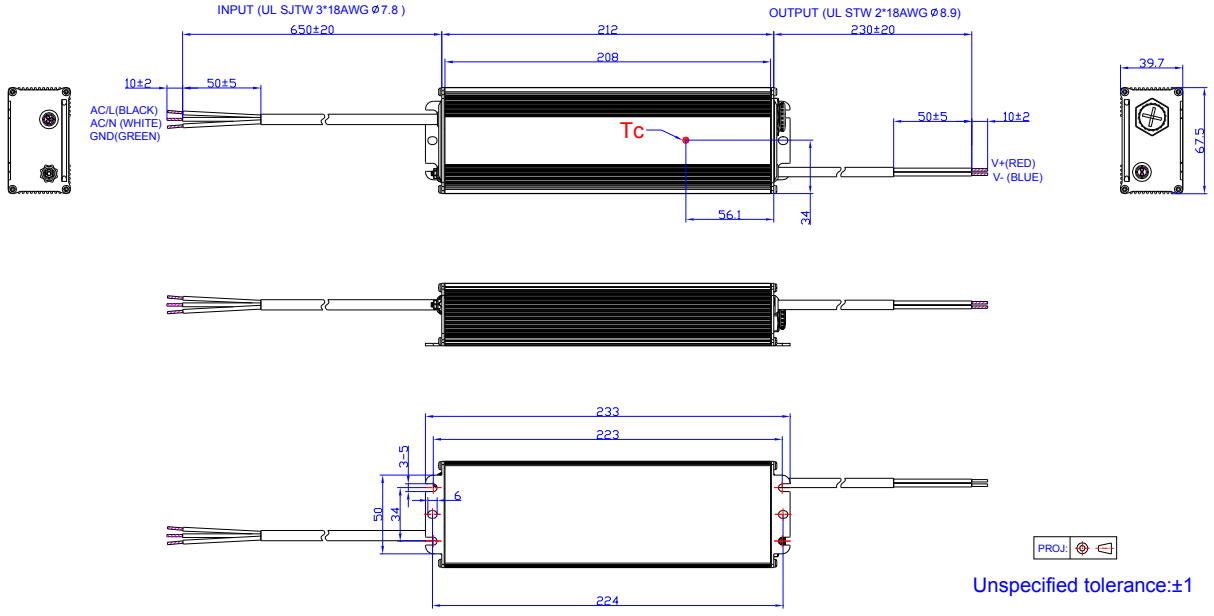
Dip Switch Setting				Output Current Setting(Ioset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	6700mA	18V	36V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	6400mA	19V	37.5V	
ON	ON	OFF	ON	6100mA	20V	39.5V	
ON	ON	OFF	OFF	5800mA	21V	41.5V	
ON	OFF	ON	ON	5500mA	22V	43.5V	
ON	OFF	ON	OFF	5200mA	23V	46V	
ON	OFF	OFF	ON	4900mA	25V	49V	
ON	OFF	OFF	OFF	4600mA	26V	52V	
OFF	ON	ON	ON	4300mA	28V	52V	Output Current Setting with Power Derating.
OFF	ON	ON	OFF	4000mA	30V	52V	
OFF	ON	OFF	ON	3700mA	33V	52V	
OFF	ON	OFF	OFF	3400mA	35V	52V	

Notes:

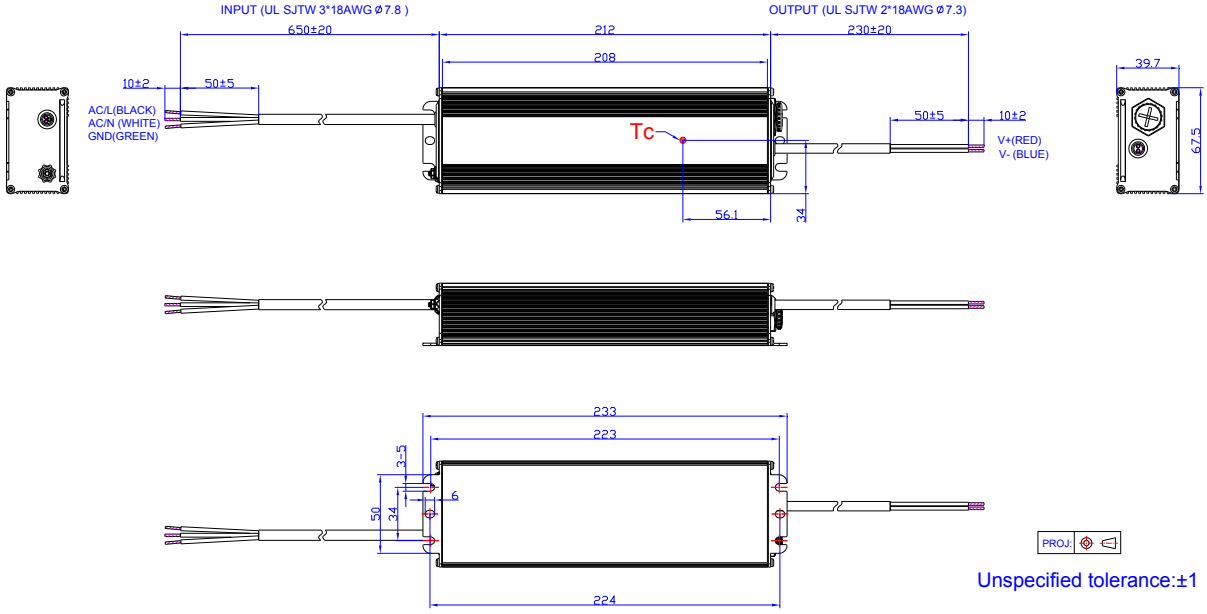
1. Dip switch must be set in the setting range as specified to insure the driver operates as expected.
2. Endcap covering dip switch must be tight to insure IP67 rating.

Mechanical Outline

EUP-240S105ST



EUP-240SxxxST



RoHS Compliance

Our products comply with the European Directive 2011/65/EC, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2017-11-02	A	Datasheets Release	/	/
2018-04-27	B	Description	/	Updated
		Mechanical Outline	/	Updated