

Features

- High Efficiency (Up to 93%)
- Full Power at Wide Output Current Range (Constant Power)
- Adjustable Output Current (AOC) with Dip-switch
- Non-dimming Control
- Input Surge Protection: 6 kV line-line, 10 kV 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



Description

The EUP-150SxxxST series is a 150W, constant-current, AOC LED driver that operates from 90-305 Vac input with excellent power factor. It is created for street, tunnel and bay lights. 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
							120Vac	220Vac	
350-700mA	450-700mA	550 mA	90~305 Vac/ 127~300 Vdc	117~333Vdc	150 W	93.0%	0.99	0.96	EUP-150S070ST
700-1050mA	700-1050mA	700 mA	90~305 Vac/ 127~300 Vdc	75~214 Vdc	150 W	93.0%	0.99	0.96	EUP-150S105ST
1000-2100mA	1400-2100mA	1400 mA	90~305 Vac/ 127~300 Vdc	38~107 Vdc	150 W	93.0%	0.99	0.96	EUP-150S210ST(4)
2100-3500mA	2450-3500mA	3150 mA	90~305 Vac/ 127~300 Vdc	22 ~ 61 Vdc	150 W	92.5%	0.99	0.96	EUP-150S350ST(4)
3500-5600mA	4200-5600mA	4200 mA	90~305 Vac/ 127~300 Vdc	14 ~ 36 Vdc	150 W	92.0%	0.99	0.96	EUP-150S560ST(4)

- Notes:** (1) Output current range with constant power at 150W
 (2) UL, FCC certified input voltage range: 100-277Vac or 127-300Vdc; other certified input voltage range except UL & FCC: 100-240Vac or 127-250Vdc (except KS)
 (3) Measured at full load and 220Vac input (see below "General Specifications" for details).
 (4) 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,
Input AC Current	-	-	1.60 A	Measured at full load and 120 Vac input.
	-	-	0.90 A	Measured at full load and 220 Vac input.
Inrush Current(I ² t)	-	-	2.10 A ² s	At 220Vac input, 25°C cold start, duration=740 μs, 10%lpk-10%lpk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 100-277Vac, 70%-100% Load (105-150W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%loset	-	5%loset	At full load condition
Output Current Setting(loset) Range				
EUP-150S070ST	350 mA	-	700 mA	
EUP-150S105ST	700 mA	-	1050 mA	
EUP-150S210ST	1000 mA	-	2100 mA	
EUP-150S350ST	2100 mA	-	3500 mA	
EUP-150S560ST	3500 mA	-	5600 mA	
Output Current Setting Range with Constant Power				
EUP-150S070ST	450 mA	-	700 mA	
EUP-150S105ST	700 mA	-	1050 mA	
EUP-150S210ST	1400 mA	-	2100 mA	
EUP-150S350ST	2450 mA	-	3500 mA	
EUP-150S560ST	4200 mA	-	5600 mA	
Total Output Current Ripple (pk-pk)	-	5%lomax	10%lomax	At full load condition. 20 MHz BW
Startup Overshoot Current	-	-	10%lomax	At full load condition
No Load Output Voltage				
EUP-150S070ST	-	350 V	360 V	
EUP-150S105ST	-	230 V	240 V	
EUP-150S210ST	-	118 V	120 V	
EUP-150S350ST	-	70 V	80 V	
EUP-150S560ST	-	40 V	50 V	
Line Regulation	-	-	±0.5%	Measured at full load
Load Regulation	-	-	±1.5%	

Output Specifications (continued)

Parameter	Min.	Typ.	Max.	Notes
Turn-on Delay Time	-	-	1.0 s	Measured at 120Vac input, 70%-100% Load
	-	-	0.5 s	Measured at 220Vac input, 70%-100% Load
Temperature Coefficient of I _o set	-	-	0.03%/°C	Case temperature = 0°C ~T _c max

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

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUP-150S070ST				
I _o = 450 mA	88.0%	90.0%	-	
I _o = 700 mA	87.5%	89.5%	-	
EUP-150S105ST				
I _o = 700 mA	88.5%	90.5%	-	
I _o =1050 mA	87.0%	89.0%	-	
EUP-150S210ST				
I _o =1400 mA	88.5%	90.5%	-	
I _o =2100 mA	87.0%	89.0%	-	
EUP-150S350ST				
I _o =2450 mA	88.0%	90.0%	-	
I _o =3500 mA	86.0%	88.0%	-	
EUP-150S560ST				
I _o =4200 mA	88.0%	90.0%	-	
I _o =5600 mA	86.0%	88.0%	-	
Efficiency at 220 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUP-150S070ST				
I _o = 450 mA	91.0%	93.0%	-	
I _o = 700 mA	90.0%	92.0%	-	
EUP-150S105ST				
I _o = 700 mA	91.0%	93.0%	-	
I _o =1050 mA	90.0%	92.0%	-	
EUP-150S210ST				
I _o =1400 mA	91.0%	93.0%	-	
I _o =2100 mA	89.5%	91.5%	-	
EUP-150S350ST				
I _o =2450 mA	90.5%	92.5%	-	
I _o =3500 mA	88.5%	90.5%	-	
EUP-150S560ST				
I _o =4200 mA	90.0%	92.0%	-	
I _o =5600 mA	88.0%	90.0%	-	

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 277 Vac input: EUP-150S070ST I _o = 450 mA I _o = 700 mA EUP-150S105ST I _o = 700 mA I _o =1050 mA EUP-150S210ST I _o =1400 mA I _o =2100 mA EUP-150S350ST I _o =2450 mA I _o =3500 mA EUP-150S560ST I _o =4200 mA I _o =5600 mA	91.0% 90.5% 91.5% 90.0% 91.5% 90.0% 91.0% 89.0% 90.0% 88.0%	93.0% 92.5% 93.5% 92.0% 93.5% 92.0% 93.0% 91.0% 92.0% 90.0%	- - - - - - - - - -	Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
MTBF	-	210,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	114,000 Hours	-	Measured at 220Vac input, 80%Load and 70°C case temperature; See lifetime vs. T _c curve for the details
Operating Case Temperature for Safety T _{c_s}	-40°C	-	+90°C	
Operating Case Temperature for Warranty T _{c_w}	-40°C	-	+75°C	
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	6.74 × 2.37 × 1.44 171 × 60 × 36.5			With mounting ear 7.56 × 2.37 × 1.44 192 × 60 × 36.5
Net Weight	-	810 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. 250.13-12
CE	EN 61347-1, EN61347-2-13
KS	KS C 7655 : 2011
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 C63.4:2009 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.

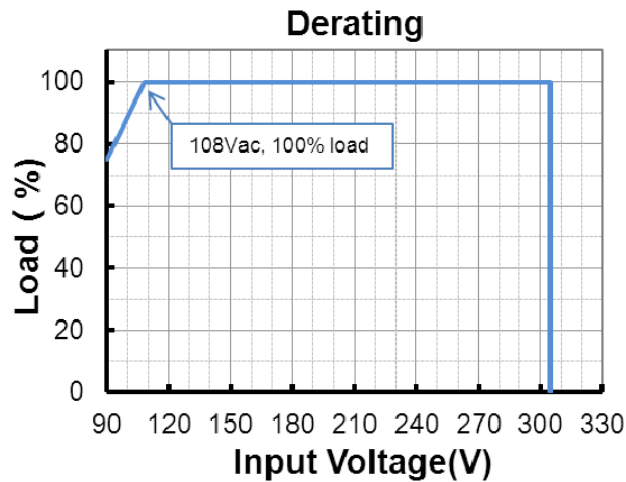
Safety & EMC Compliance (Continued)

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
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

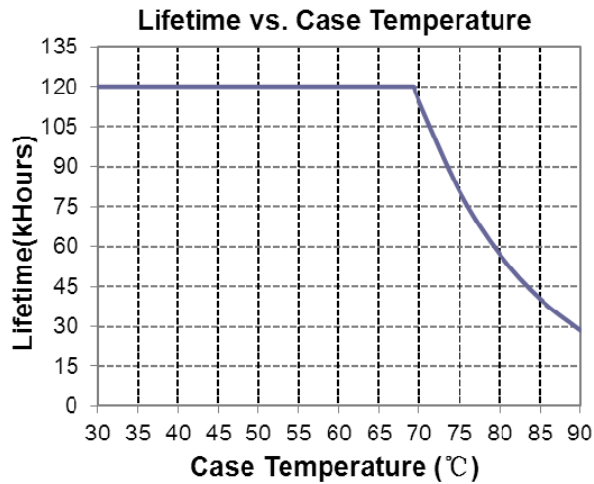
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(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.

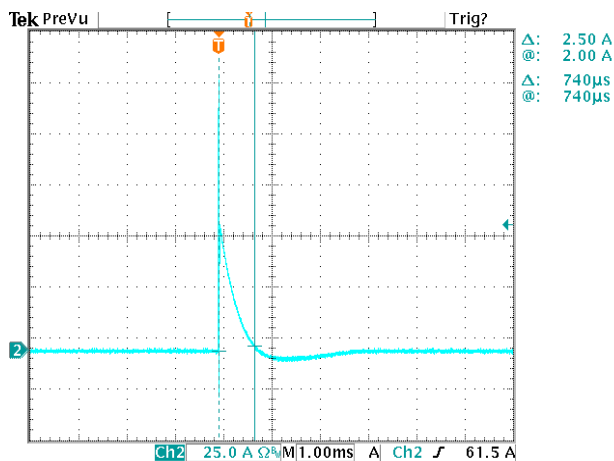
Derating



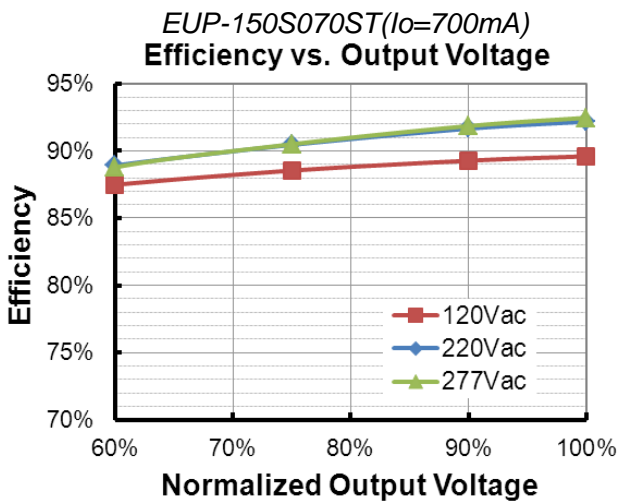
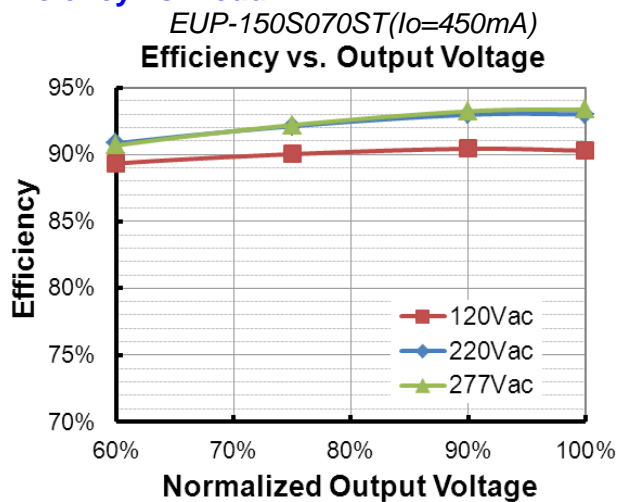
Lifetime vs. Case Temperature

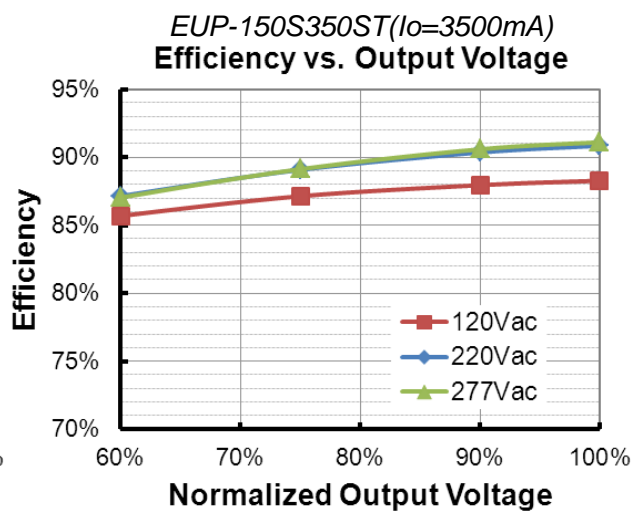
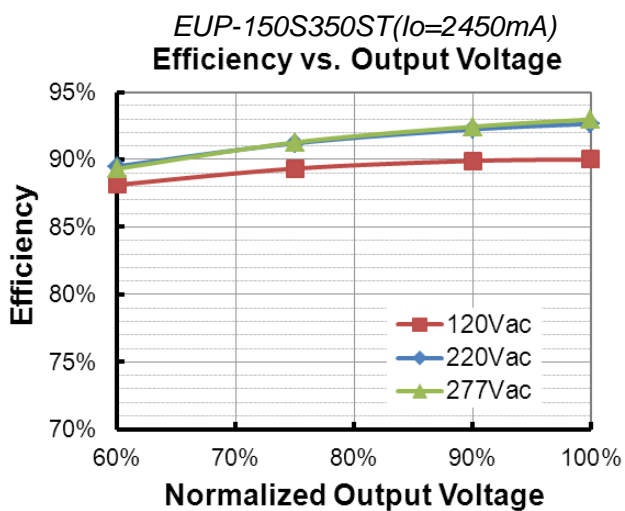
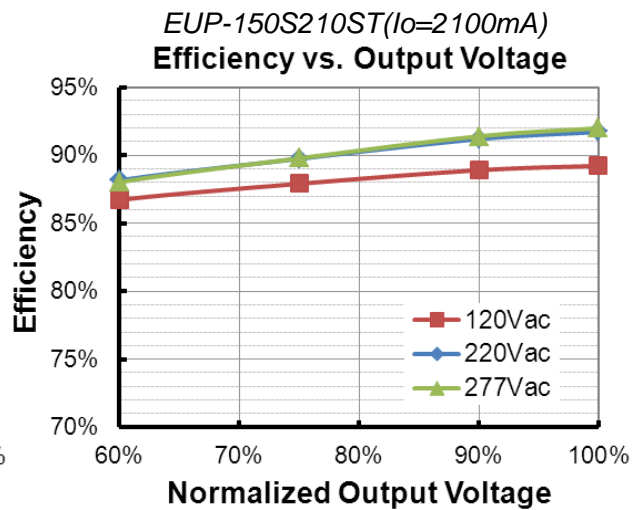
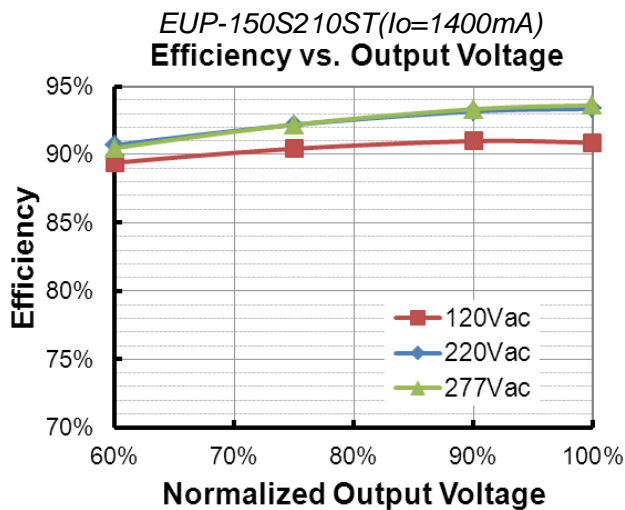
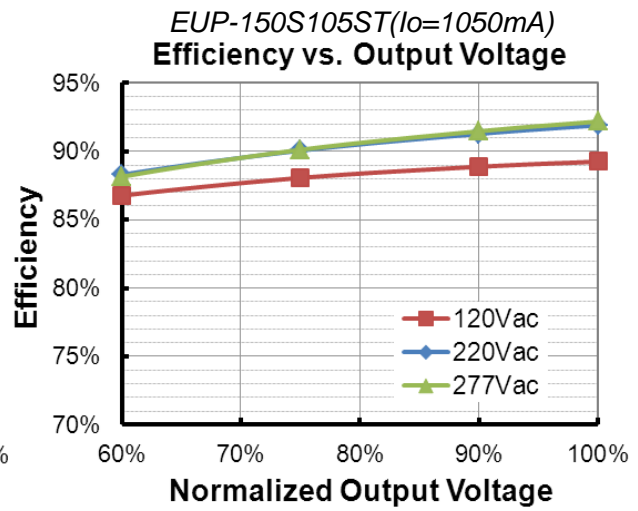
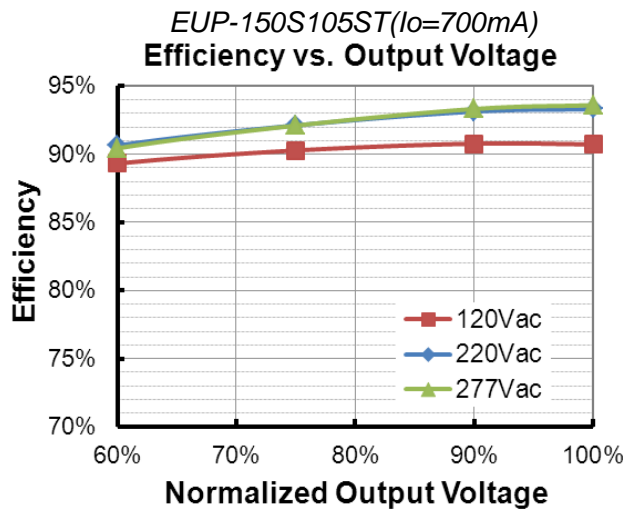


Inrush Current Waveform

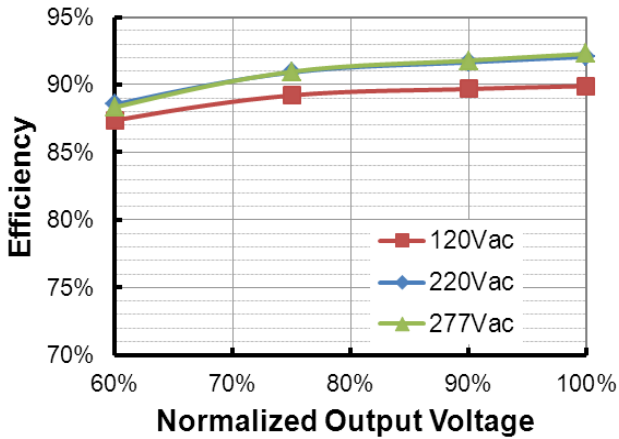


Efficiency vs. Load

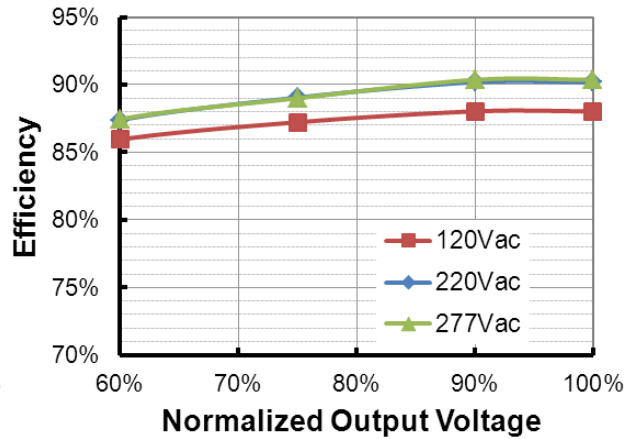




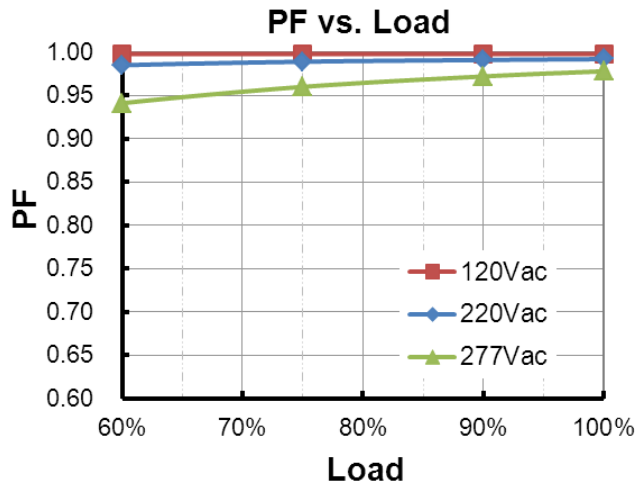
**EUP-150S560ST($I_o=4200mA$)
Efficiency vs. Output Voltage**



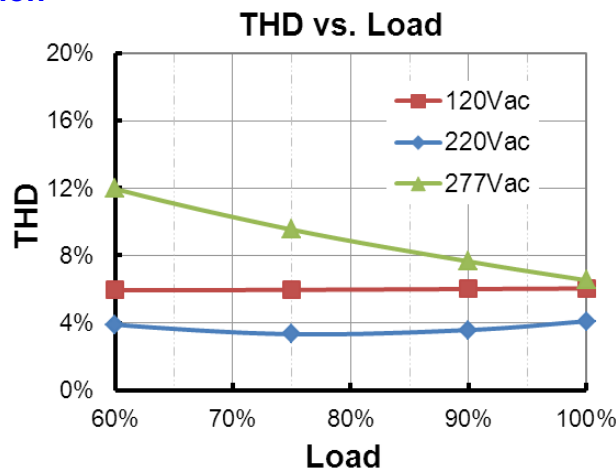
**EUP-150S560ST($I_o=5600mA$)
Efficiency vs. Output Voltage**



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-150S070ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
OFF	ON	ON	ON	700mA	117V	214V	Output Current Setting with Constant Power.
OFF	ON	ON	OFF	650mA	116V	231V	
OFF	ON	OFF	ON	600mA	125V	250V	
OFF	ON	OFF	OFF	550mA	137V	273V	
OFF	OFF	ON	ON	500mA	150V	300V	
OFF	OFF	ON	OFF	450mA	167V	333V	
OFF	OFF	OFF	ON	400mA	188V	333V	Output Current Setting with Power Derating.
OFF	OFF	OFF	OFF	350mA	214V	333V	

● EUP-150S105ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	1050mA	75V	143V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	1000mA	75V	150V	
ON	ON	OFF	ON	950mA	79V	158V	
ON	ON	OFF	OFF	900mA	83V	166V	
ON	OFF	ON	ON	850mA	88V	176V	
ON	OFF	ON	OFF	800mA	94V	187V	
ON	OFF	OFF	ON	750mA	100V	200V	
ON	OFF	OFF	OFF	700mA	107V	214V	

● EUP-150S210ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	2100mA	38V	71V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	2000mA	38V	75V	
ON	ON	OFF	ON	1900mA	40V	79V	
ON	ON	OFF	OFF	1800mA	42V	83V	
ON	OFF	ON	ON	1700mA	44V	88V	
ON	OFF	ON	OFF	1600mA	47V	94V	
ON	OFF	OFF	ON	1500mA	50V	100V	
ON	OFF	OFF	OFF	1400mA	54V	107V	
OFF	ON	ON	ON	1300mA	58V	107V	
OFF	ON	ON	OFF	1200mA	63V	107V	
OFF	ON	OFF	ON	1100mA	68V	107V	
OFF	ON	OFF	OFF	1000mA	75V	107V	

● EUP-150S350ST

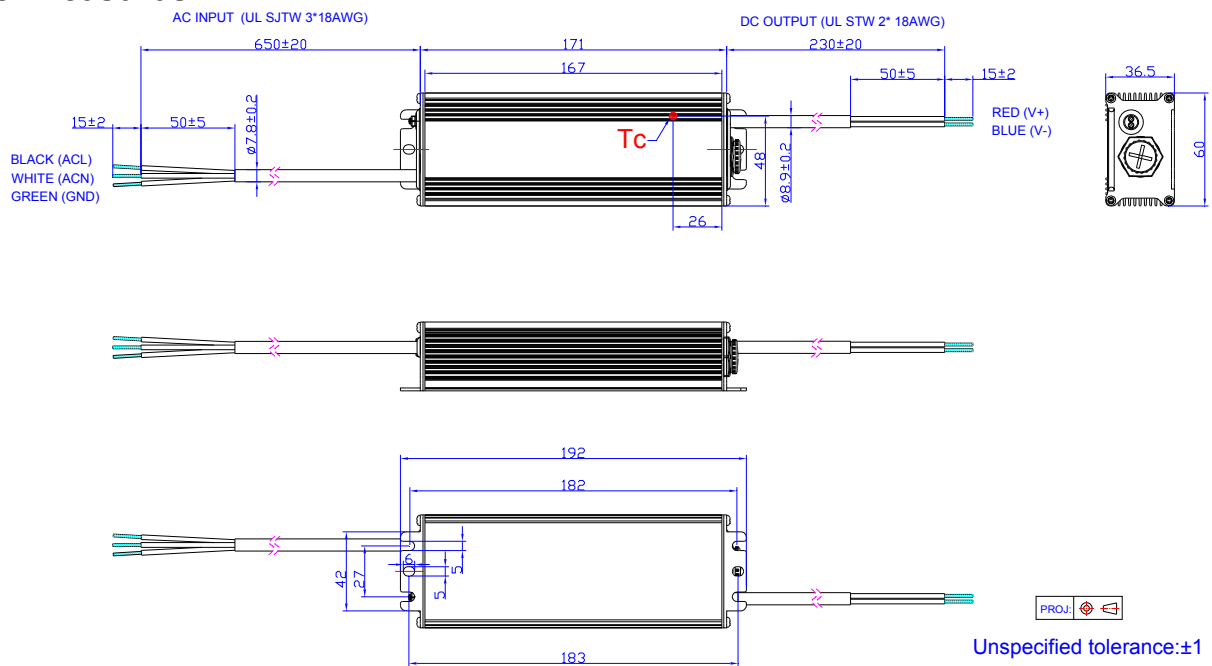
Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	3500mA	22V	43V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	3325mA	23V	45V	
ON	ON	OFF	ON	3150mA	24V	47.5V	
ON	ON	OFF	OFF	2975mA	26V	50.5V	
ON	OFF	ON	ON	2800mA	27V	53.5V	
ON	OFF	ON	OFF	2625mA	29V	57V	
ON	OFF	OFF	ON	2450mA	32V	61V	
ON	OFF	OFF	OFF	2275mA	33V	61V	
OFF	ON	ON	ON	2100mA	36V	61V	

● EUP-150S560ST

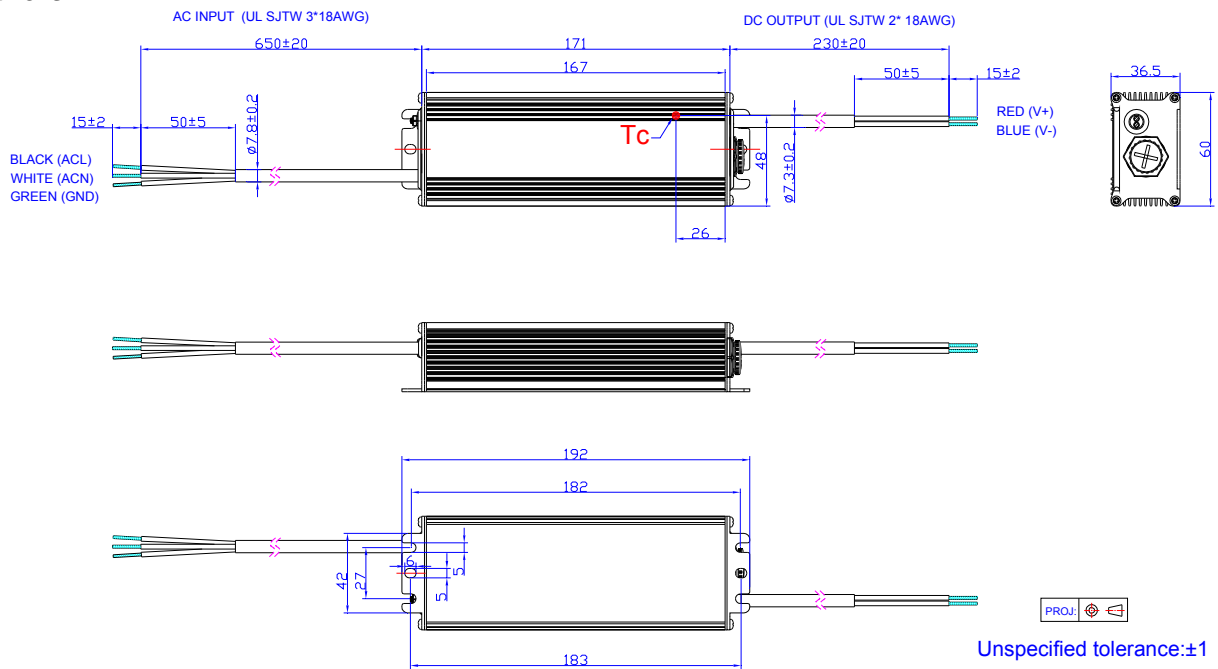
Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
OFF	ON	ON	ON	5600mA	14V	26.5V	Output Current Setting with Constant Power.
OFF	ON	ON	OFF	5250mA	15V	28.5V	
OFF	ON	OFF	ON	4900mA	16V	30.5V	
OFF	ON	OFF	OFF	4550mA	17V	33V	
OFF	OFF	ON	ON	4200mA	18V	36V	
OFF	OFF	ON	OFF	3850mA	20V	36V	Output Current Setting with Power Derating.
OFF	OFF	OFF	ON	3500mA	22V	36V	

Mechanical Outline

EUP-150S070ST



Others



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
2016-08-11	A	Datasheets Release	/	/