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: DM 6kV, CM 10kV
- 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-320SxxxST* series is a 320W, 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, aquaculture and sports. 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)	Typical Power Factor		Model Number
							120Vac	220Vac	
850-1500mA	1050-1500mA	1400 mA	90~305 Vac/ 127~300 Vdc	107~305Vdc	320 W	93.5%	0.99	0.96	EUP-320S150ST
1100-2200mA	1500-2200mA	2100 mA	90~305 Vac/ 127~300 Vdc	73~213Vdc	320 W	93.5%	0.99	0.96	EUP-320S220ST
1700-3200mA	2300-3200mA	2750 mA	90~305 Vac/ 127~300 Vdc	50~139Vdc	320 W	92.5%	0.99	0.96	EUP-320S320ST
2400-4600mA	3200-4600mA	4200 mA	90~305 Vac/ 127~300 Vdc	35~100Vdc	320 W	92.5%	0.99	0.96	EUP-320S460ST(4)
3700-6700mA	4700-6700mA	6700 mA	90~305 Vac/ 127~300 Vdc	24 ~ 68Vdc	320 W	92.5%	0.99	0.96	EUP-320S670ST(4)

Notes: (1) Output current range with constant power at 320W
(2) UL, FCC certified input voltage range: 100-277Vac or 127-300Vdc; otherwise: 100-240Vac or 127-250Vdc.
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV Output.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90 Vac	-	305 Vac	
Input DC Voltage	127 Vdc	-	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	-	-	3.20 A	Measured at 100% load and 120 Vac input.
	-	-	1.70 A	Measured at 100% load and 220 Vac input.
Inrush Current(I^2t)	-	-	1.30 A^2s	At 220Vac input, 25°C cold start, duration= 3.92 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 100-277Vac, 50-60Hz, 60%-100%Load (192-320W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load (240-320W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	At 100% load condition
Output Current Setting(Ioset) Range				
EUP-320S150ST	850 mA	-	1500 mA	
EUP-320S220ST	1100 mA	-	2200 mA	
EUP-320S320ST	1700 mA	-	3200 mA	
EUP-320S460ST	2400 mA	-	4600 mA	
EUP-320S670ST	3700 mA	-	6700 mA	
Output Current Setting Range with Constant Power				
EUP-320S150ST	1050 mA	-	1500 mA	
EUP-320S220ST	1500 mA	-	2200 mA	
EUP-320S320ST	2300 mA	-	3200 mA	
EUP-320S460ST	3200 mA	-	4600 mA	
EUP-320S670ST	4700 mA	-	6700 mA	
Total Output Current Ripple (pk-pk)	-	5%Iomax	10%Iomax	At 100% load condition. 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	2%Iomax	-	At 100% load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%Iomax	At 100% load condition
No Load Output Voltage				
EUP-320S150ST	-	-	350 V	
EUP-320S220ST	-	-	250 V	
EUP-320S320ST	-	-	170 V	
EUP-320S460ST	-	-	120 V	
EUP-320S670ST	-	-	85 V	
Line Regulation	-	-	±0.5%	Measured at 100% load

Output Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	-	1.0 s	Measured at 120Vac input, 60%-100% Load
	-	-	0.5 s	Measured at 220Vac input, 60%-100% Load
Temperature Coefficient of loset	-	0.03%/°C	-	Case temperature = 0°C ~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input:				Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUP-320S150ST				
Io=1050mA	89.50%	91.50%	-	
Io=1500mA	89.00%	91.00%	-	
EUP-320S220ST				
Io=1500mA	89.00%	91.00%	-	
Io=2200mA	89.00%	91.00%	-	
EUP-320S320ST				
Io=2300mA	88.00%	90.00%	-	
Io=3200mA	88.00%	90.00%	-	
EUP-320S460ST				
Io=3200mA	88.50%	90.50%	-	
Io=4600mA	88.00%	90.00%	-	
EUP-320S670ST				
Io=4700mA	88.00%	90.00%	-	
Io=6700mA	87.00%	89.00%	-	
Efficiency at 220 Vac input:				Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUP-320S150ST				
Io=1050mA	91.50%	93.50%	-	
Io=1500mA	91.50%	93.50%	-	
EUP-320S220ST				
Io=1500mA	91.50%	93.50%	-	
Io=2200mA	91.50%	93.50%	-	
EUP-320S320ST				
Io=2300mA	90.50%	92.50%	-	
Io=3200mA	90.00%	92.00%	-	
EUP-320S460ST				
Io=3200mA	90.50%	92.50%	-	
Io=4600mA	90.00%	92.00%	-	
EUP-320S670ST				
Io=4700mA	90.50%	92.50%	-	
Io=6700mA	89.50%	91.50%	-	

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 277 Vac input: EUP-320S150ST Io=1050mA Io=1500mA EUP-320S220ST Io=1500mA Io=2200mA EUP-320S320ST Io=2300mA Io=3200mA EUP-320S460ST Io=3200mA Io=4600mA EUP-320S670ST Io=4700mA Io=6700mA	 92.00% 91.50% 92.00% 91.50% 90.50% 90.50% 90.50% 90.50% 91.00% 90.00%	 94.00% 93.50% 94.00% 93.50% 92.50% 92.50% 92.50% 92.50% 93.00% 92.00%	 - - - - - - - - - -	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	-	303,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	78,000 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	-	+85°C	
Operating Case Temperature for Warranty Tc_w	-40°C	-	+75°C	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 Inches (L × W × H) Millimeters (L × W × H)	8.82 × 3.15 × 1.66 224 × 80 × 42			With mounting ear 9.89 × 3.15 × 1.66 251 × 80 × 42
Net Weight	-	1550 g	-	

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.

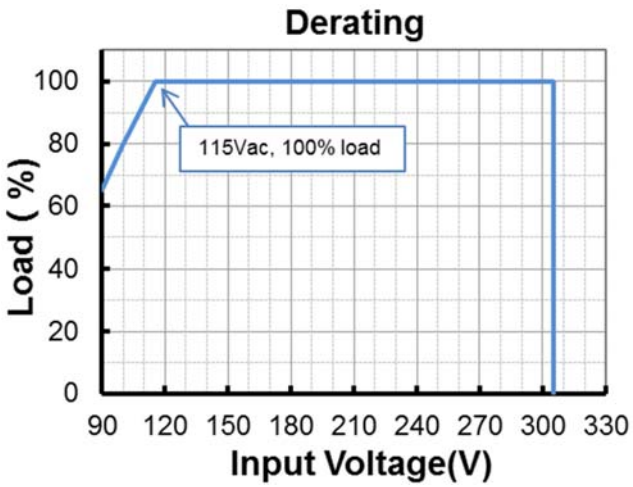
Safety &EMC Compliance (Continued)

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: Differential Mode 6 kV, Common Mode 10 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

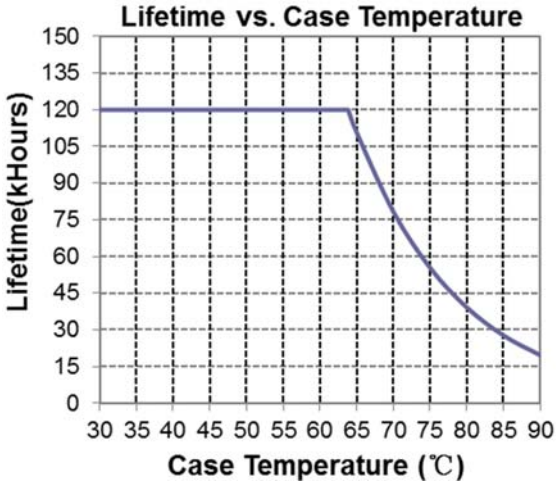
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(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.

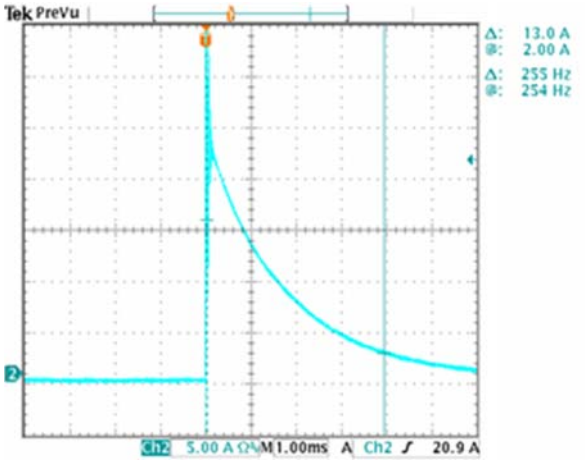
Derating



Lifetime vs. Case Temperature

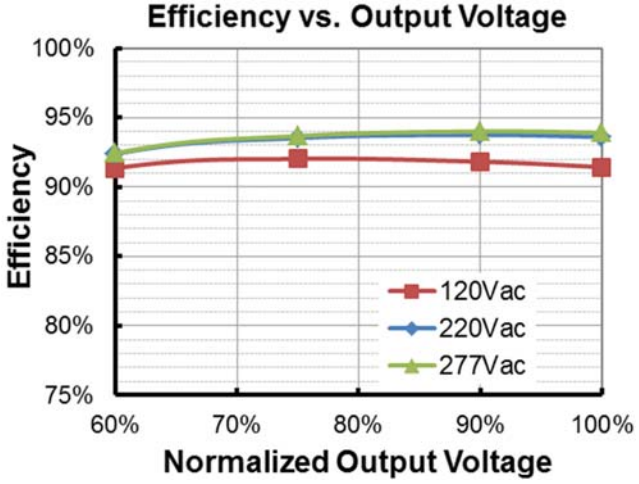


Inrush Current Waveform

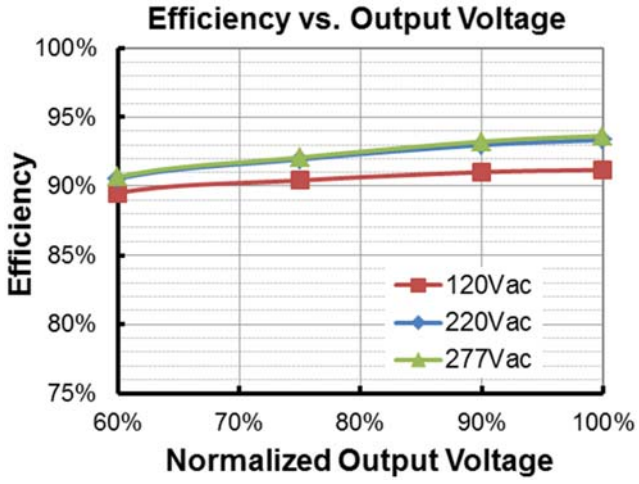


Efficiency vs. Load

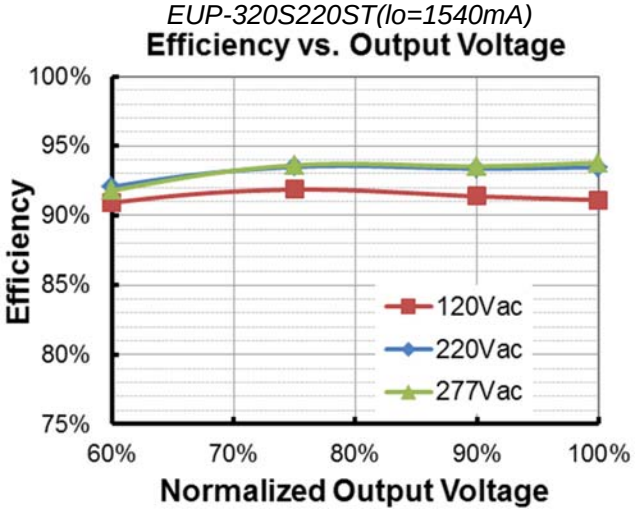
EUP-320S150ST(Io=1050mA)



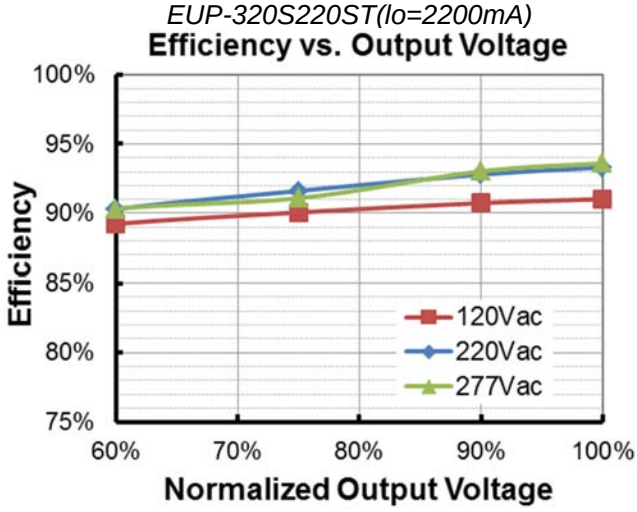
EUP-320S150ST(Io=1500mA)



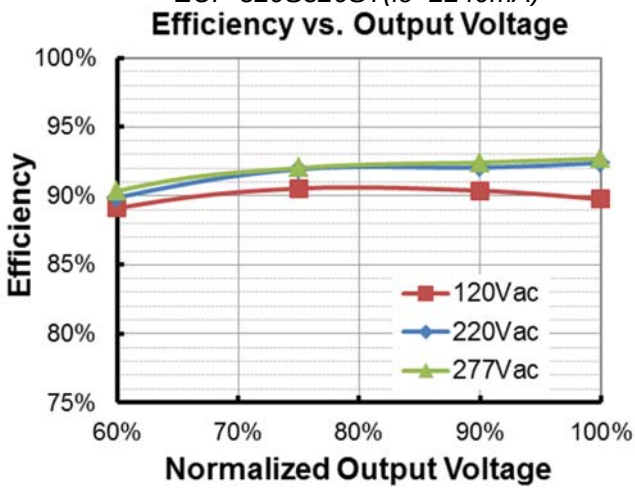
EUP-320S220ST(Io=1540mA)



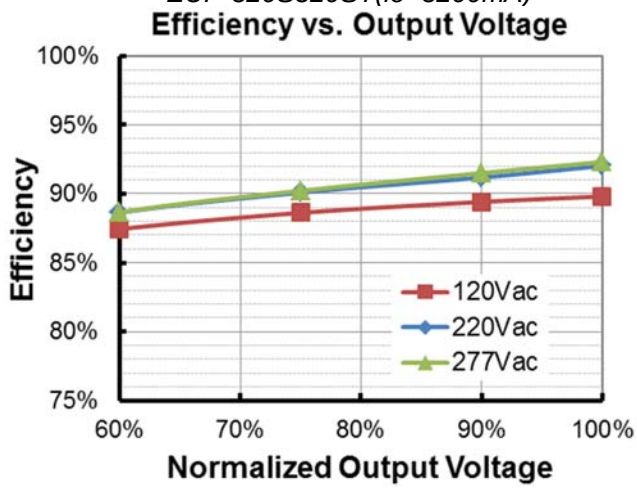
EUP-320S220ST(Io=2200mA)



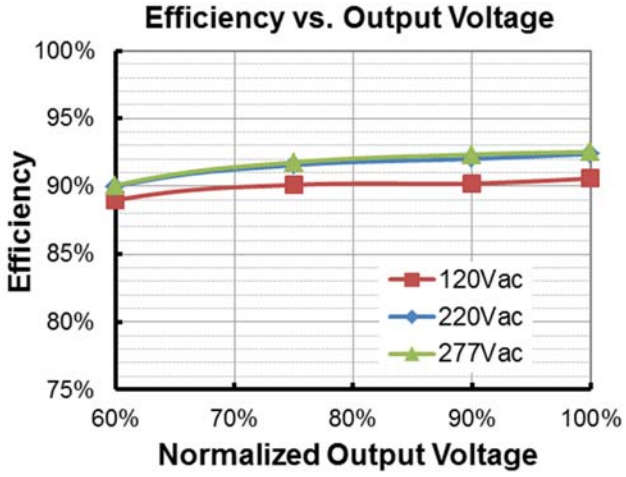
EUP-320S320ST(Io=2240mA)



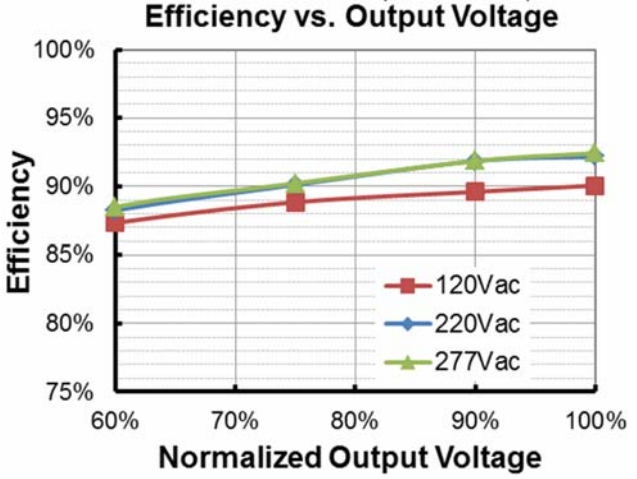
EUP-320S320ST(Io=3200mA)



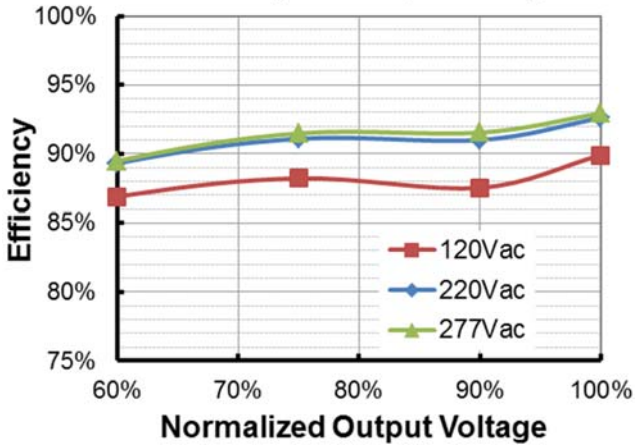
EUP-320S460ST(Io=3220mA)



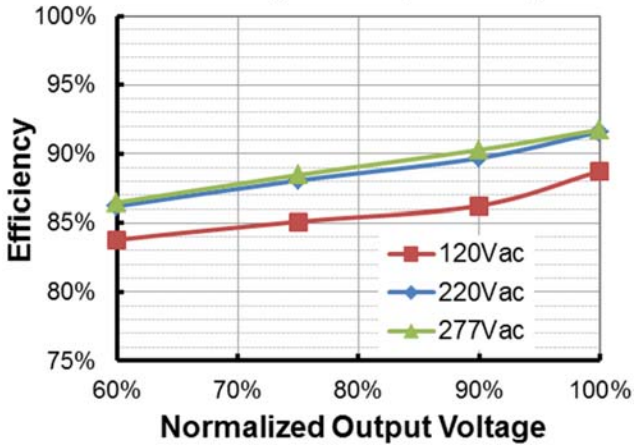
EUP-320S460ST(Io=4600mA)



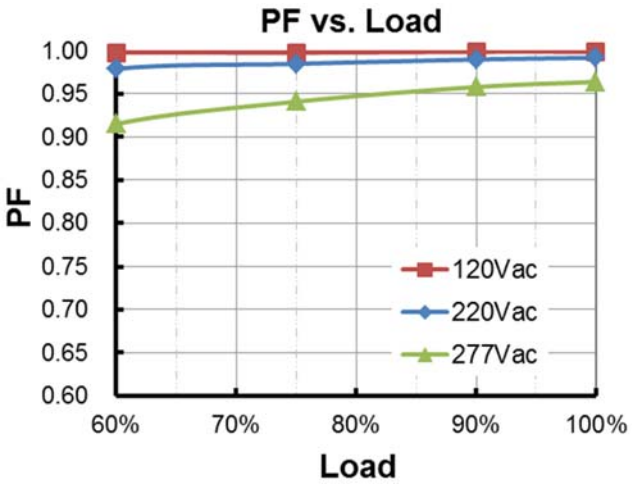
EUP-320S670ST(Io=4690mA)



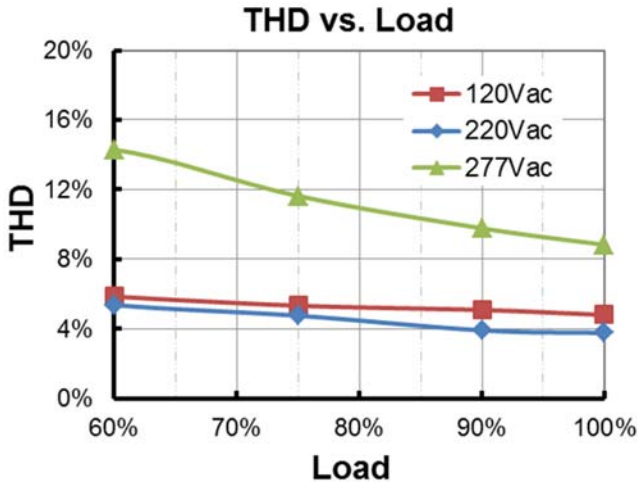
EUP-320S670ST(Io=6700mA)



Power Factor



Total Harmonic Distortion



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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-320S150ST**

Dip Switch Setting				Output Current Setting(Ioset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	1500mA	107V	213V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	1450mA	111V	221V	
ON	ON	OFF	ON	1400mA	115V	229V	
ON	ON	OFF	OFF	1350mA	119V	237V	
ON	OFF	ON	ON	1300mA	123V	246V	
ON	OFF	ON	OFF	1250mA	128V	256V	
ON	OFF	OFF	ON	1200mA	134V	267V	
ON	OFF	OFF	OFF	1150mA	139V	278V	
OFF	ON	ON	ON	1100mA	146V	291V	
OFF	ON	ON	OFF	1050mA	153V	305V	
OFF	ON	OFF	ON	1000mA	160V	305V	Output Current Setting with Power Derating.
OFF	ON	OFF	OFF	950mA	169V	305V	
OFF	OFF	ON	ON	900mA	178V	305V	
OFF	OFF	ON	OFF	850mA	189V	305V	

● EUP-320S220ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	2200mA	73V	145V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	2100mA	76V	152V	
ON	ON	OFF	ON	2000mA	80V	160V	
ON	ON	OFF	OFF	1900mA	84V	168V	
ON	OFF	ON	ON	1800mA	89V	178V	
ON	OFF	ON	OFF	1700mA	94V	188V	
ON	OFF	OFF	ON	1600mA	100V	200V	
ON	OFF	OFF	OFF	1500mA	107V	213V	
OFF	ON	ON	ON	1400mA	115V	213V	Output Current Setting with Power Derating.
OFF	ON	ON	OFF	1300mA	123V	213V	
OFF	ON	OFF	ON	1200mA	134V	213V	
OFF	ON	OFF	OFF	1100mA	146V	213V	

● EUP-320S320ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	3200mA	50V	100V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	3050mA	53V	105V	
ON	ON	OFF	ON	2900mA	55V	110V	
ON	ON	OFF	OFF	2750mA	58V	116V	
ON	OFF	ON	ON	2600mA	62V	123V	
ON	OFF	ON	OFF	2450mA	66V	131V	
ON	OFF	OFF	ON	2300mA	70V	139V	
ON	OFF	OFF	OFF	2150mA	75V	139V	Output Current Setting with Power Derating.
OFF	ON	ON	ON	2000mA	80V	139V	
OFF	ON	ON	OFF	1850mA	87V	139V	
OFF	ON	OFF	ON	1700mA	94V	139V	

● EUP-320S460ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	4600mA	35V	69.5V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	4400mA	37V	72.5V	
ON	ON	OFF	ON	4200mA	38V	76V	
ON	ON	OFF	OFF	4000mA	40V	80V	
ON	OFF	ON	ON	3800mA	42V	84V	
ON	OFF	ON	OFF	3600mA	45V	89V	
ON	OFF	OFF	ON	3400mA	47V	94V	
ON	OFF	OFF	OFF	3200mA	50V	100V	
OFF	ON	ON	ON	3000mA	54V	100V	Output Current Setting with Power Derating.
OFF	ON	ON	OFF	2800mA	57V	100V	
OFF	ON	OFF	ON	2600mA	62V	100V	
OFF	ON	OFF	OFF	2400mA	67V	100V	

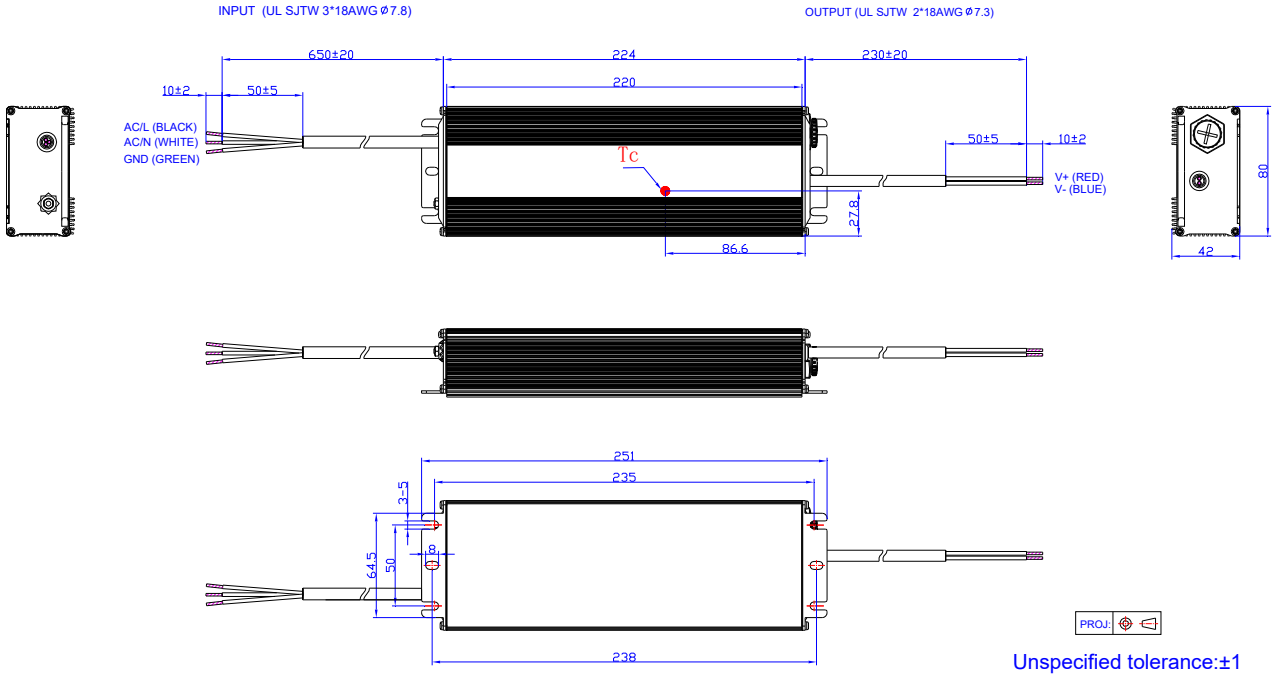
● EUP-320S670ST

Dip Switch Setting				Output Current Setting(loset)	Output Voltage Range		Notes
1	2	3	4	Typ.	Min.	Max.	/
ON	ON	ON	ON	6700mA	24V	48V	Output Current Setting with Constant Power.
ON	ON	ON	OFF	6450mA	25V	49.5V	
ON	ON	OFF	ON	6200mA	26V	51.5V	
ON	ON	OFF	OFF	5950mA	27V	54V	
ON	OFF	ON	ON	5700mA	28V	56V	
ON	OFF	ON	OFF	5450mA	30V	58.5V	
ON	OFF	OFF	ON	5200mA	31V	61.5V	
ON	OFF	OFF	OFF	4950mA	33V	64.5V	
OFF	ON	ON	ON	4700mA	34V	68V	
OFF	ON	ON	OFF	4450mA	36V	68V	Output Current Setting with Power Derating.
OFF	ON	OFF	ON	4200mA	38V	68V	
OFF	ON	OFF	OFF	3950mA	41V	68V	
OFF	OFF	ON	ON	3700mA	44V	68V	

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



Unspecified tolerance:±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
2019-02-12	A	Datasheets Release	/	/
2021-07-22	B	Mechanical Outline	/	Updated