

Features

- Input Over Voltage Protection at 440Vac with 48 Hours
- Full Power at Wide Output Current Range (Constant Power)
- Adjustable Output Current (AOC) with Potentiometer
- Non-dimming Control
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: IOVP, OVP, SCP, OTP
- IP66/IP67
- 5 Years Warranty



Description

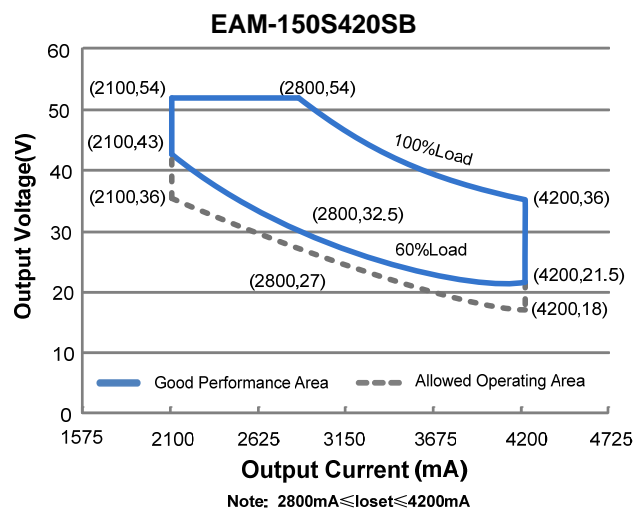
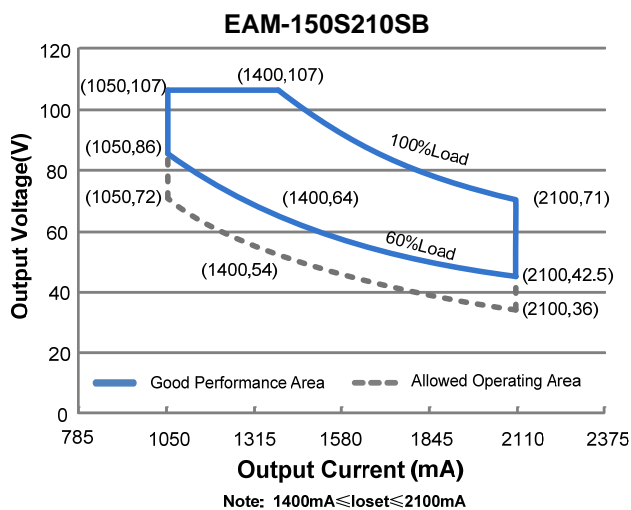
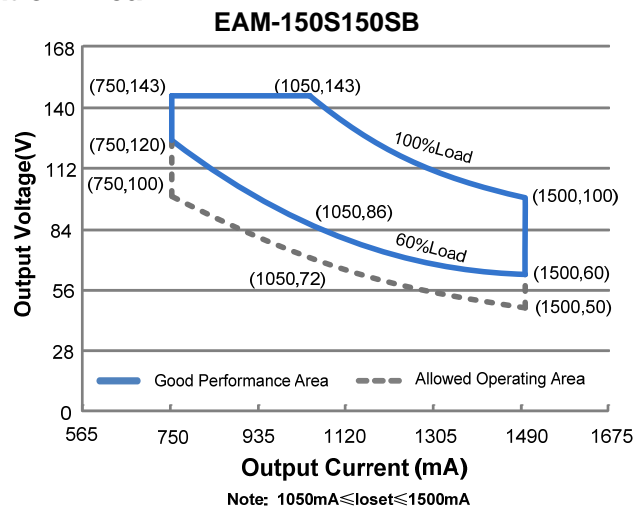
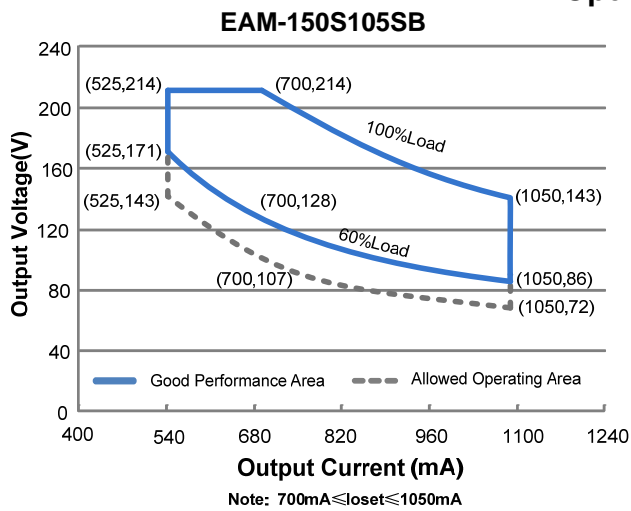
The EAM-150SxxxSB series is a 150W, constant-current, AOC LED driver that operates from 90-305Vac input with excellent power factor. It is created for many lighting applications including high bay, tunnel and roadway lights, etc. The high efficiency of these drivers and compact metal case enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, input over voltage, 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 (5)
							120Vac	220Vac	
525-1050mA	700-1050mA	700mA	90~305 Vac/ 127~300 Vdc	72~214 Vdc	150W	92.0%	0.99	0.96	EAM-150S105SB
750-1500mA	1050-1500mA	1050mA	90~305 Vac/ 127~300 Vdc	50~143 Vdc	150W	92.5%	0.99	0.96	EAM-150S150SB
1050-2100mA	1400-2100mA	1400mA	90~305 Vac/ 127~300 Vdc	36~107 Vdc	150W	91.5%	0.99	0.96	EAM-150S210SB ⁽⁴⁾
2100-4200mA	2800-4200mA	3150mA	90~305 Vac/ 127~300 Vdc	18 ~ 54 Vdc	150W	91.0%	0.99	0.96	EAM-150S420SB ⁽⁴⁾

- Notes:** (1) Output current range with constant power at 150W.
 (2) Certified input voltage range: 100-240Vac.
 (3) Measured at 100% load and 220Vac input (see below "General Specifications" for details).
 (4) SELV output.
 (5) To order CB approved model, please use suffix "SG" in place of "SB" (ex: EAM-150S105SG).

I-V Operation Area



Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	127~300 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz,
Input AC Current	-	-	1.50 A	Measured at 100% load and 120 Vac input.
	-	-	0.80 A	Measured at 100% load and 220 Vac input.
Inrush Current(I ² t)	-	-	0.86 A ² s	At 220Vac input, 25°C cold start, duration=280 μs, 10%I _{pk} -10%I _{pk} . See Inrush Current Waveform for the details.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
PF	0.9	-	-	At 100-240Vac, 50-60Hz, 60%-100% Load (90-150W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load (112.5-150W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%loset	-	5%loset	At 100% load condition
Output Current Setting(loset) Range				
EAM-150S105SB	525 mA	-	1050 mA	
EAM-150S150SB	750 mA	-	1500 mA	
EAM-150S210SB	1050 mA	-	2100 mA	
EAM-150S420SB	2100 mA	-	4200 mA	
Output Current Setting Range with Constant Power				
EAM-150S105SB	700 mA	-	1050 mA	
EAM-150S150SB	1050 mA	-	1500 mA	
EAM-150S210SB	1400 mA	-	2100 mA	
EAM-150S420SB	2800 mA	-	4200 mA	
Total Output Current Ripple (pk-pk)	-	5%lomax	10%lomax	At 100% load condition. 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	2%lomax	-	At 100% load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%lomax	At 100% load condition
No Load Output Voltage				
EAM-150S105SB	-	-	240 V	
EAM-150S150SB	-	-	160 V	
EAM-150S210SB	-	-	120 V	
EAM-150S420SB	-	-	60 V	
Line Regulation	-	-	±0.5%	Measured at 100% load
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

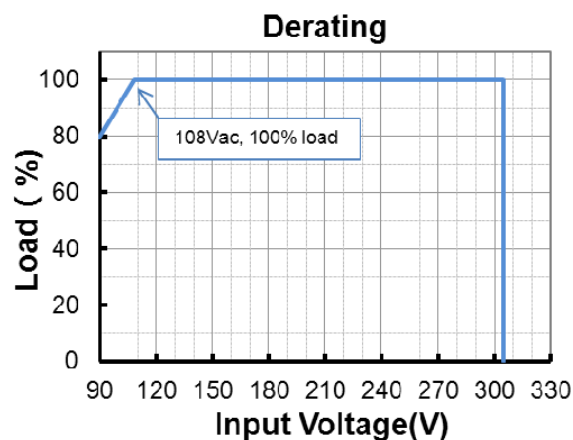
Parameter	Min.	Typ.	Max.	Notes	
Efficiency at 120 Vac input: EAM-150S105SB I _o = 700 mA I _o =1050 mA EAM-150S150SB I _o =1050 mA I _o =1500 mA EAM-150S210SB I _o =1400 mA I _o =2100 mA EAM-150S420SB I _o =2800 mA I _o =4200 mA	87.0% 88.0% 88.0% 88.0% 87.0% 87.0% 87.0% 86.0%	89.0% 90.0% 90.0% 90.0% 89.0% 89.0% 89.0% 88.0%	- - - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)	
Efficiency at 220 Vac input: EAM-150S105SB I _o = 700 mA I _o =1050 mA EAM-150S150SB I _o =1050 mA I _o =1500 mA EAM-150S210SB I _o =1400 mA I _o =2100 mA EAM-150S420SB I _o =2800 mA I _o =4200 mA	89.5% 90.0% 90.0% 90.5% 89.0% 89.5% 89.0% 88.0%	91.5% 92.0% 92.0% 92.5% 91.0% 91.5% 91.0% 90.0%	- - - - - - - -		
Efficiency at 277 Vac input: EAM-150S105SB I _o = 700 mA I _o =1050 mA EAM-150S150SB I _o =1050 mA I _o =1500 mA EAM-150S210SB I _o =1400 mA I _o =2100 mA EAM-150S420SB I _o =2800 mA I _o =4200 mA	90.0% 90.5% 90.5% 90.5% 89.5% 90.0% 89.5% 88.5%	92.0% 92.5% 92.5% 92.5% 91.5% 92.0% 91.5% 90.5%	- - - - - - - -		
MTBF EAM-150S105SB	-	457,000 Hours	-		Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
MTBF Others	-	218,000 Hours	-		Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	109,000 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}	-20°C	-	+90°C		
Operating Case Temperature for Warranty T _{c w}	-20°C	-	+80°C		Case temperature for 5 years warranty. Humidity: 10% RH to 95% RH;
Storage Temperature	-20°C	-	+85°C		Humidity: 5% RH to 95% RH;
Dimensions Inches (L × W × H) Millimeters (L × W × H)	6.34 × 2.36 × 1.44 161 × 60 × 36.5				With mounting ear 7.01 × 2.36 × 1.44 178 × 60 × 36.5
Net Weight	-	710 g	-		

Safety & EMC Compliance

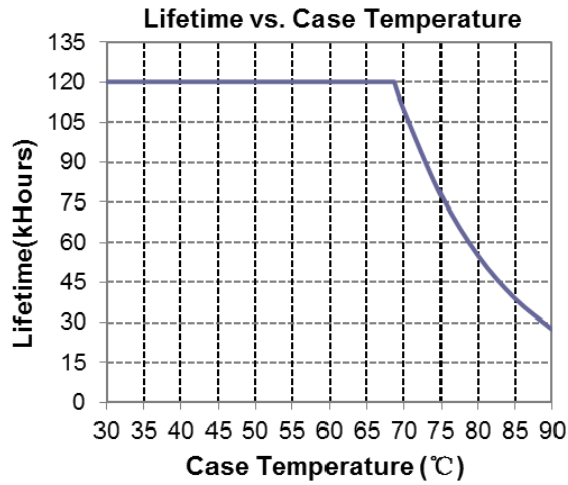
Safety Category	Standard
CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
BIS	IS 15885(PART2/SEC13)
EAC	ГОСТ Р МЭК 61347-1, ГОСТ IEC 61347-2-13
EMI Standards	Notes
EN 55015 ⁽¹⁾	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
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.

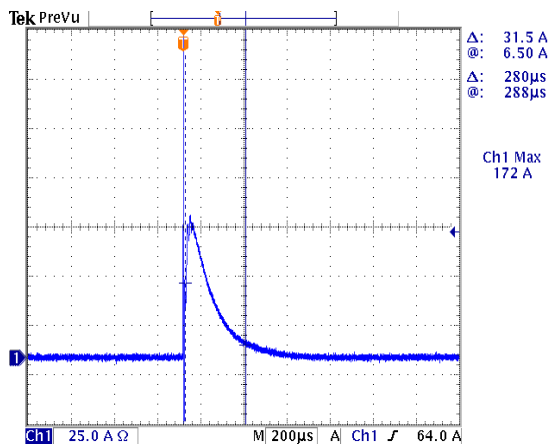
Derating



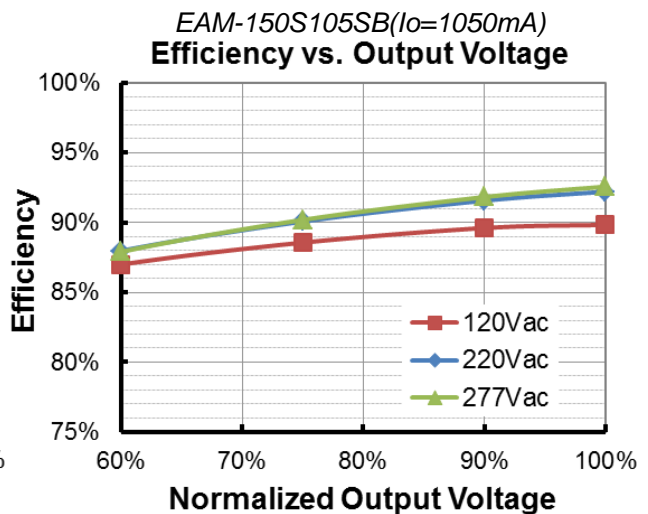
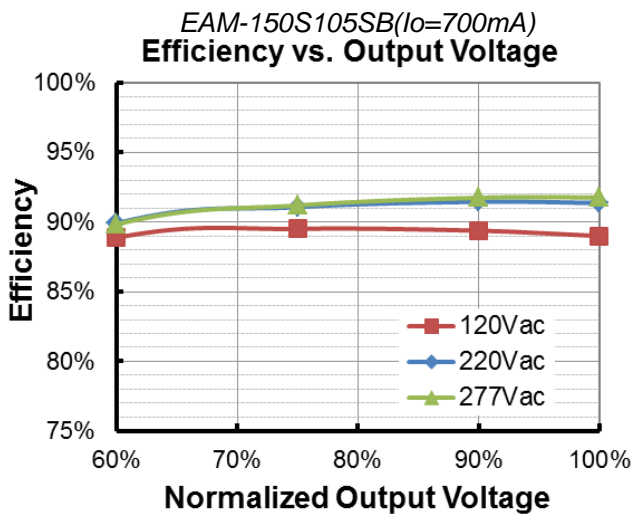
Lifetime vs. Case Temperature

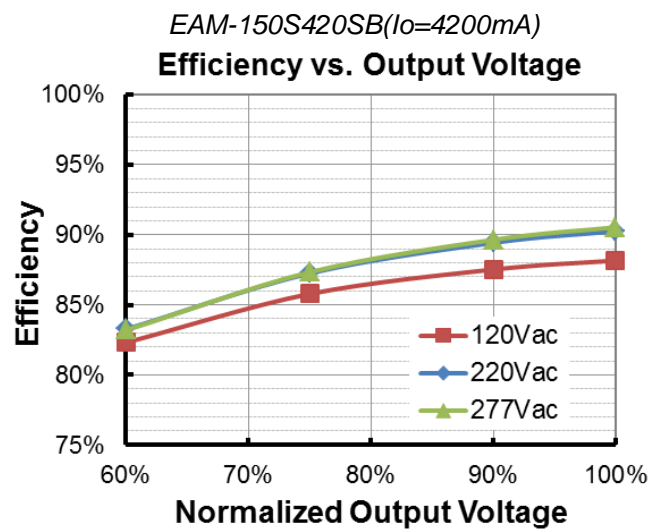
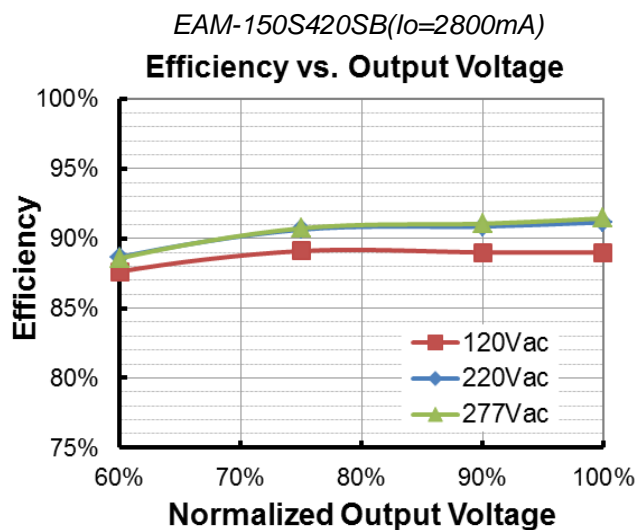
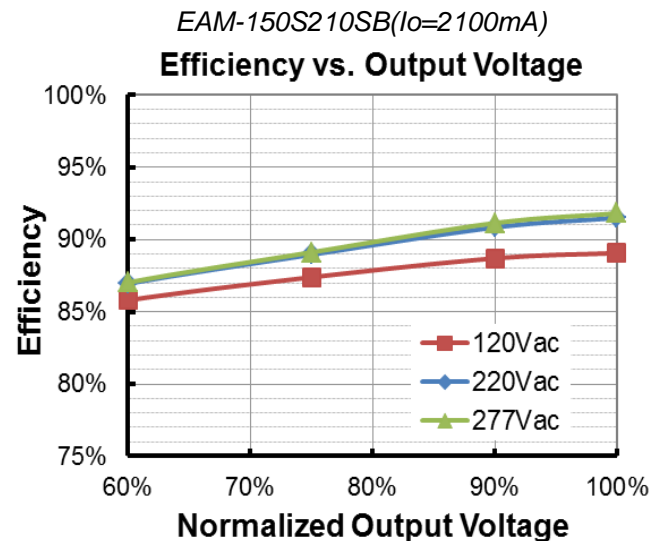
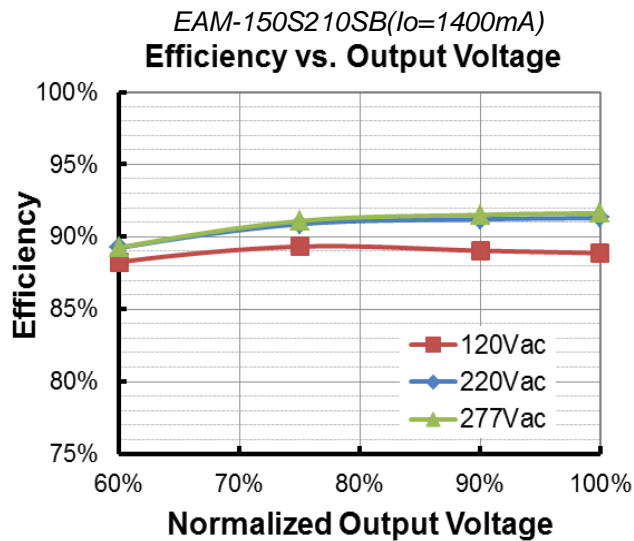
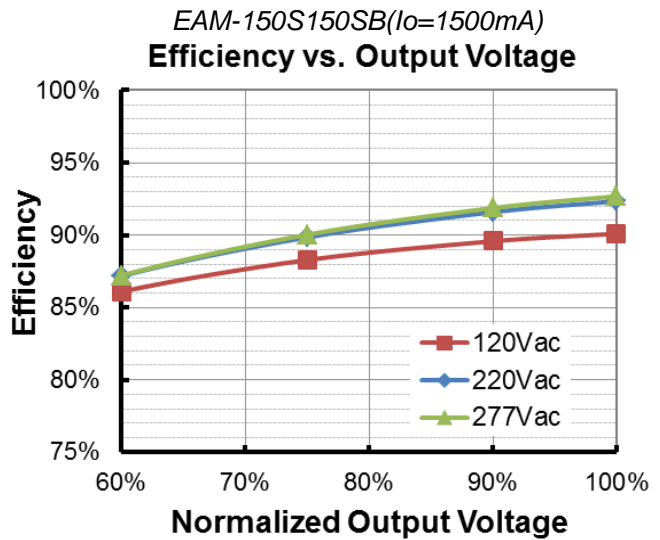
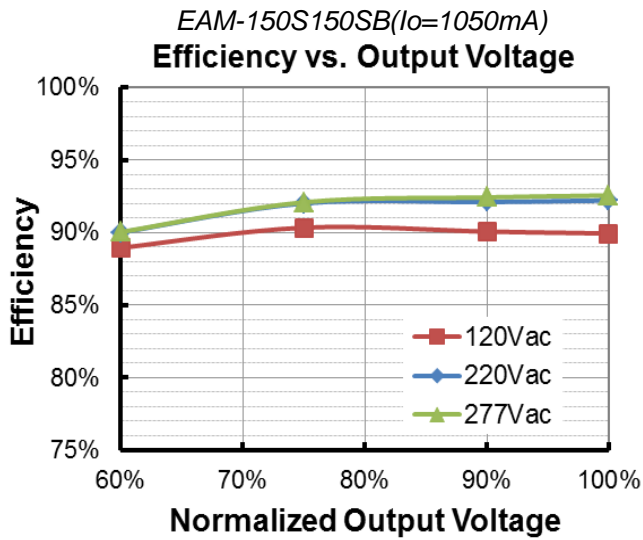


Inrush Current Waveform

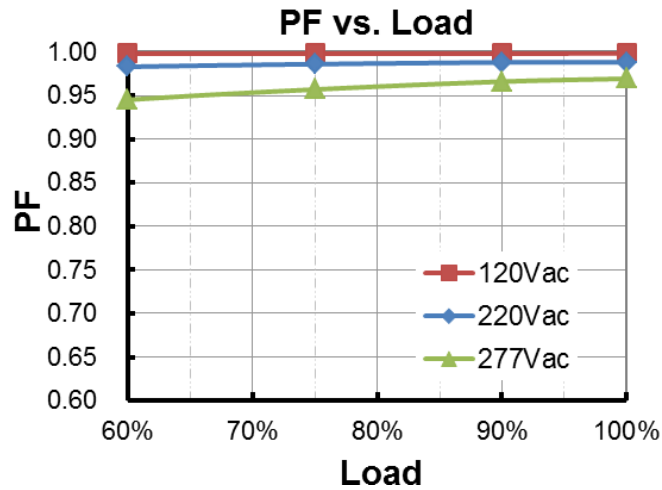


Efficiency vs. Load

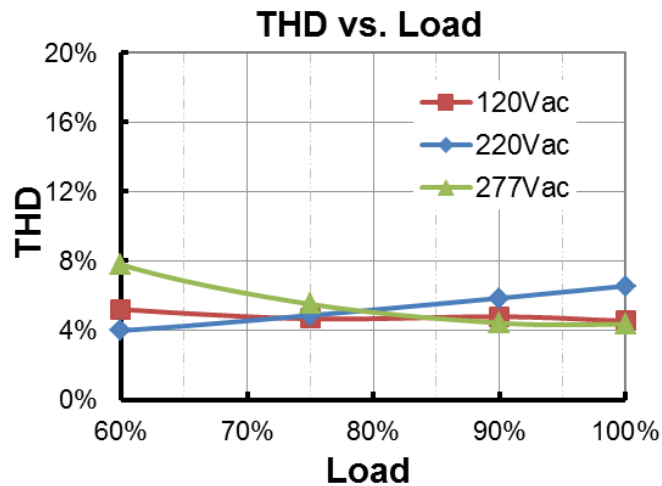




Power Factor



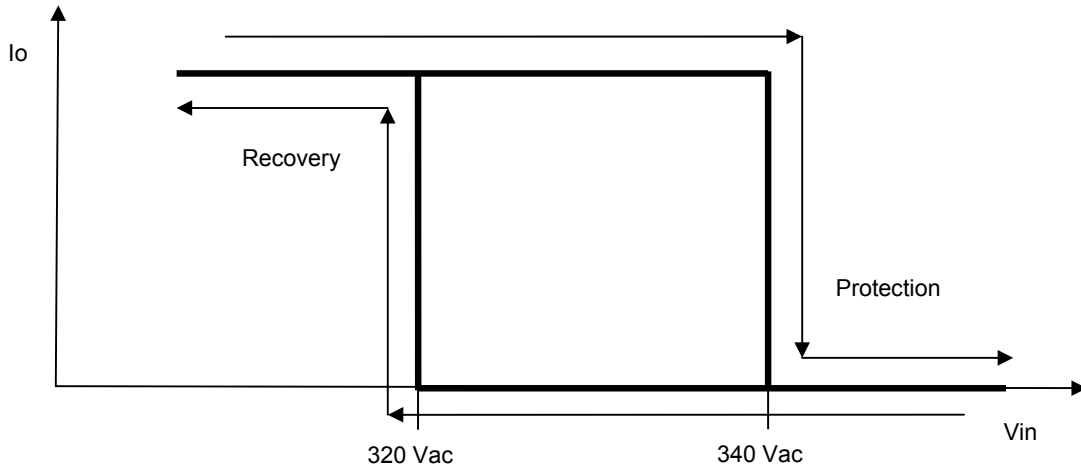
Total Harmonic Distortion



Protection Functions

Parameter		Min.	Typ.	Max.	Notes
Over Voltage Protection		Limits output voltage at no load and in case the normal voltage limit fails.			
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 Temperature Protection		Decreases output current, returning to normal after over temperature is removed.			
Input Over Voltage Protection	Input Over Voltage Protection	320 Vac	340 Vac	360 Vac	Turn off the output when the input voltage exceeds protection voltage.
	Input Over Voltage Recovery	300 Vac	320 Vac	340 Vac	Auto Recovery. The driver will restart when the input voltage falls below recovery voltage.
	Max. of Input Over Voltage	-	-	440 Vac	The driver can survive for 48 hours with input voltage stress of 440Vac.

● **Input Over Voltage Protection Diagram**



Output Current vs. Potentiometer Setting

● **EAM-150S105SB**

Output Current Setting (I _o set)	Output Voltage Range		Notes
	Min.	Max.	
Typ.			/
1050mA	72V	143V	Output Current Setting with Constant Power.
...	
700mA	107V	214V	Output Current Setting with Power Derating.
...	
525mA	143V	214V	

● **EAM-150S150SB**

Output Current Setting (I _o set)	Output Voltage Range		Notes
	Min.	Max.	
Typ.			/
1500mA	50V	100V	Output Current Setting with Constant Power.
...	
1050mA	72V	143V	Output Current Setting with Power Derating.
...	
750mA	100V	143V	

● EAM-150S210SB

Output Current Setting (I _o set)	Output Voltage Range		Notes
	Min.	Max.	
Typ.			/
2100mA	36V	71V	Output Current Setting with Constant Power.
...	
1400mA	54V	107V	
...	Output Current Setting with Power Derating.
1050mA	72V	107V	

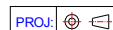
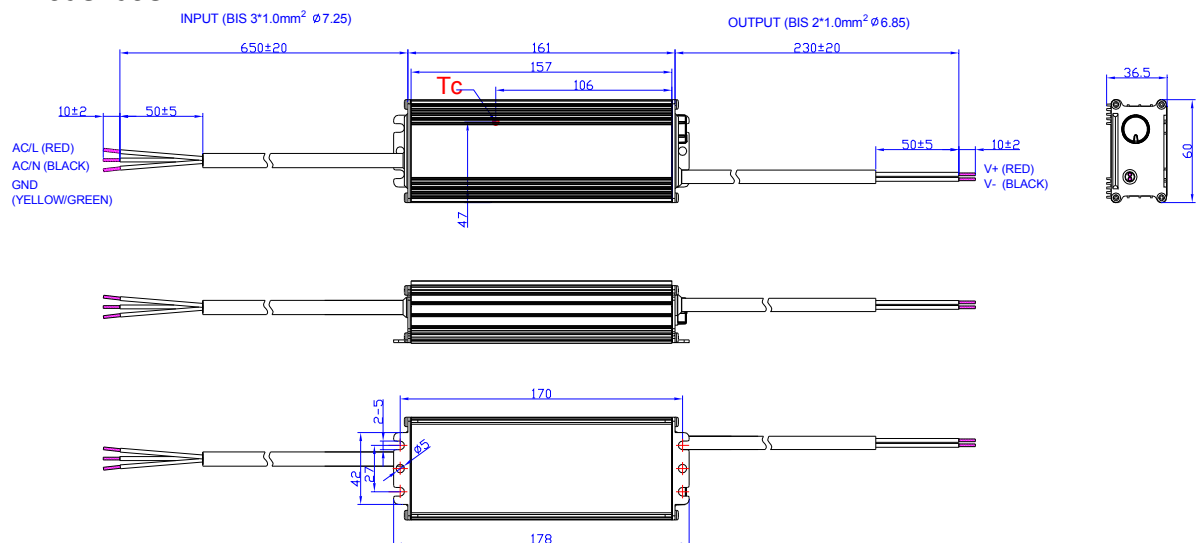
● EAM-150S420SB

Output Current Setting (I _o set)	Output Voltage Range		Notes
	Min.	Max.	
Typ.			/
4200mA	18V	36V	Output Current Setting with Constant Power.
...	
2800mA	27V	54V	
...	Output Current Setting with Power Derating.
2100mA	36V	54V	

Notes: Endcap covering potentiometer must be tight to insure IP67 rating.

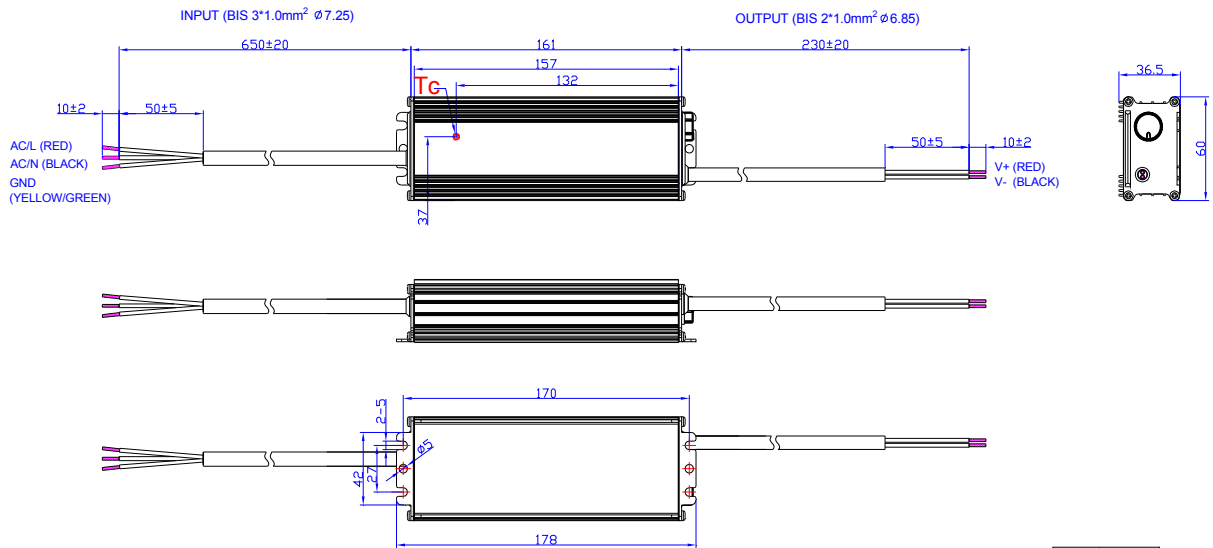
Mechanical Outline

EAM-150S105SB



Unspecified tolerance:±1

Others



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
2019-10-24	A	Datasheets Release	/	/
2019-12-05	B	EAC Logo	/	Added
		Safety & EMC Compliance	EAC	Added
2020-04-01	C	Product Photograph	/	Updated
		Features	IP67	IP66/IP67
		Models	EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		Models	Notes(5)	Added
		I-V Operation Area	EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		Output Specifications	Output Current Setting(Io set) Range EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		Output Specifications	Output Current Setting Range with Constant Power EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		Output Specifications	No Load Output Voltage EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		General Specifications	EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		General Specifications	MTBF Others	Added
		General Specifications	Operating Case Temperature for Warranty Tc w- Notes	Updated
		General Specifications	Storage Temperature- Notes	Updated
		General Specifications	Dimensions	Updated
		General Specifications -Net Weight	680g	710g
		Efficiency vs. Load	EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		Output Current vs. Potentiometer Setting	EAM-150S150SB EAM-150S210SB EAM-150S420SB	Added
		Mechanical Outline	EAM-150S105SB	Updated
Mechanical Outline	Others	Added		
Format	Page footer	Updated		