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-100SxxxSB* series is a 100W, 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.

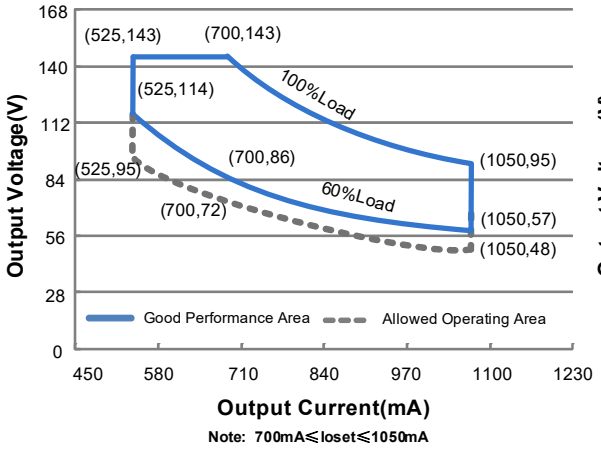
Models

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)	Typical Power Factor		Model Number
							120Vac	220Vac	
525-1050mA	700-1050mA	700mA	90~305 Vac/ 127~300 Vdc	48~143 Vdc	100 W	92.0%	0.99	0.96	EAM-100S105SB
750-1500mA	1050-1500mA	1050mA	90~305 Vac/ 127~300 Vdc	34~95 Vdc	100 W	91.5%	0.99	0.96	EAM-100S150SB(4)
1400-2800mA	1750-2800mA	2100mA	90~305 Vac/ 127~300 Vdc	17~54 Vdc	96 W	90.5%	0.99	0.96	EAM-100S280SB(4)

Notes: (1) Output current range with constant power at 100W
(2) Certified input voltage range: 100-240Vac.
(3) Measured at 100% load and 220Vac input (see below "General Specifications" for details).
(4) SELV output.

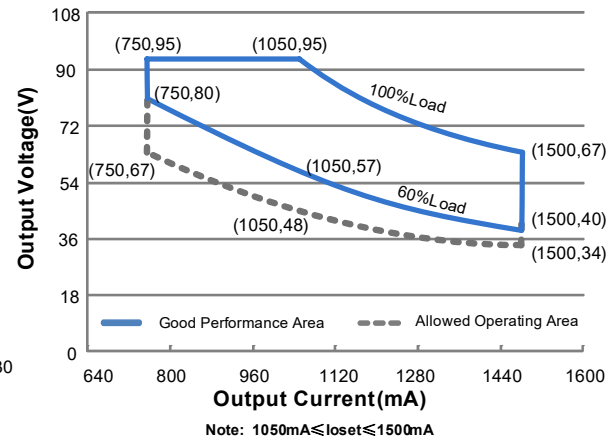
I-V Operation Area

EAM-100S105SB

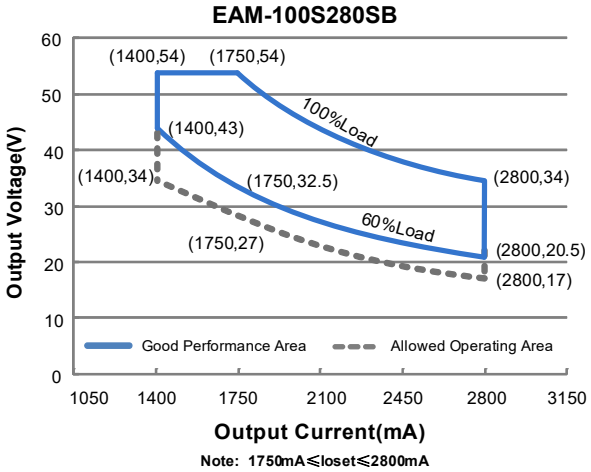


Note: 700mA≤Ioset≤1050mA

EAM-100S150SB



Note: 1050mA≤Ioset≤1500mA



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	-	-	0.70 mA	IEC 60598-1; 240Vac/ 60Hz
Input AC Current	-	-	1.06 A	Measured at 100% load and 120 Vac input.
	-	-	0.56 A	Measured at 100% load and 220 Vac input.
Inrush Current(I^2t)	-	-	0.89 A^2s	At 220Vac input, 25°C cold start, duration=136 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 100-240Vac, 50-60Hz, 60%-100%load (60-100W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100%load (75-100W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	At 100% load condition
Output Current Setting(Ioset) Range				
EAM-100S105SB	525 mA	-	1050 mA	
EAM-100S150SB	750 mA	-	1500 mA	
EAM-100S280SB	1400 mA	-	2800 mA	
Output Current Setting Range with Constant Power				
EAM-100S105SB	700 mA	-	1050 mA	
EAM-100S150SB	1050 mA	-	1500 mA	
EAM-100S280SB	1750 mA	-	2800 mA	

Output Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
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 EAM-100S105SB EAM-100S150SB EAM-100S280SB	 - - -	 - - -	 170 V 120 V 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 Ioset	-	0.03%/°C	-	Case temperature = 0°C~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: EAM-100S105SB Io= 700 mA Io=1050 mA EAM-100S150SB Io=1050 mA Io=1500 mA EAM-100S280SB Io=1750 mA Io=2800 mA	 86.0% 87.0% 86.0% 86.5% 86.0% 86.0%	 88.0% 89.0% 88.0% 88.5% 88.0% 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-100S105SB Io= 700 mA Io=1050 mA EAM-100S150SB Io=1050 mA Io=1500 mA EAM-100S280SB Io=1750 mA Io=2800 mA	 89.0% 90.0% 89.0% 89.5% 88.5% 88.0%	 91.0% 92.0% 91.0% 91.5% 90.5% 90.0%	 - - - - - -	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 277 Vac input: EAM-100S105SB Io= 700 mA Io=1050 mA EAM-100S150SB Io=1050 mA Io=1500 mA EAM-100S280SB Io=1750 mA Io=2800 mA	 89.5% 90.0% 89.0% 89.5% 88.5% 88.5%	 91.5% 92.0% 91.0% 91.5% 90.5% 90.5%	 - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)

General Specifications (Continued)

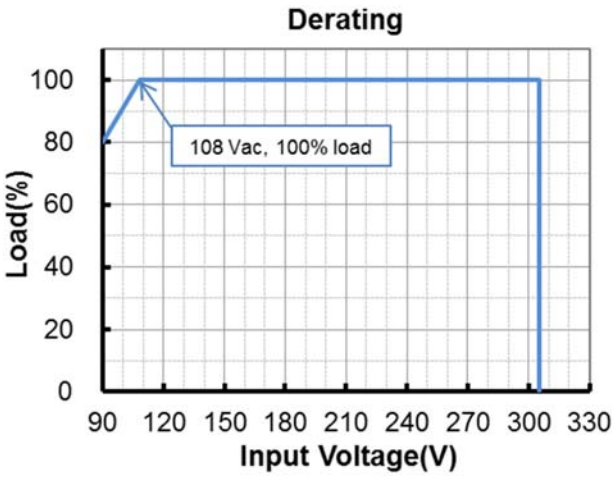
Parameter	Min.	Typ.	Max.	Notes
MTBF	-	426,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	114,000 Hours	-	Measured at 220Vac input, 80%Load and 70°C case temperature; See lifetime vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-20°C	-	+90°C	
Operating Case Temperature for Warranty Tc_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)	5.16 × 2.36 × 1.44 131 × 60 × 36.5			With mounting ear 5.83 × 2.36 × 1.44 148 × 60 × 36.5
Net Weight	-	590 g	-	

Safety &EMC Compliance

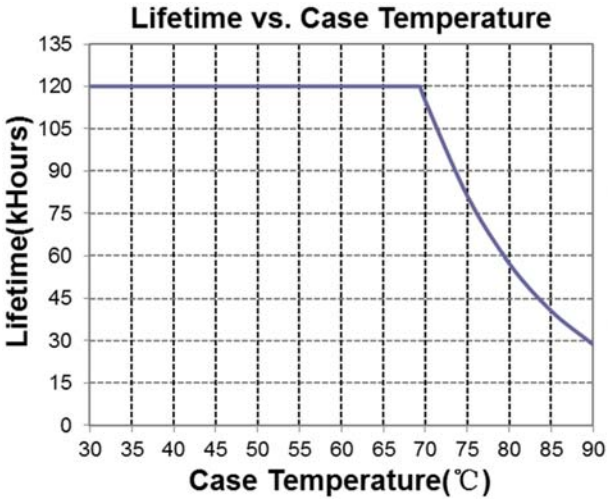
Safety Category	Standard
CE	EN 61347-1, EN 61347-2-13
BIS	IS 15885(PART2/SEC13)
EMI Standards	**Notes**
EN 55015(1)	Conducted emission Test &Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	**Notes**
EN 61000-4-2	Electrostatic Discharge (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.

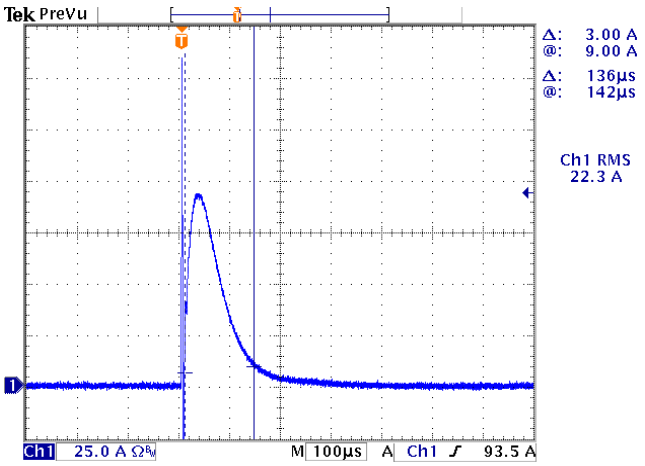
Derating



Lifetime vs. Case Temperature



Inrush Current Waveform



Specifications are subject to changes without notice. *All specifications are typical at 25℃ unless otherwise stated.*

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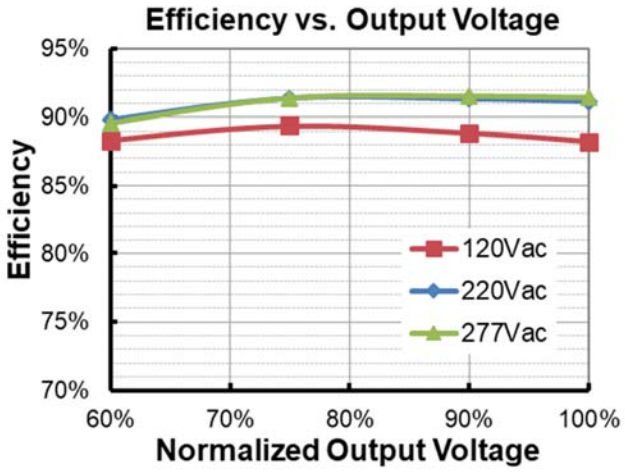
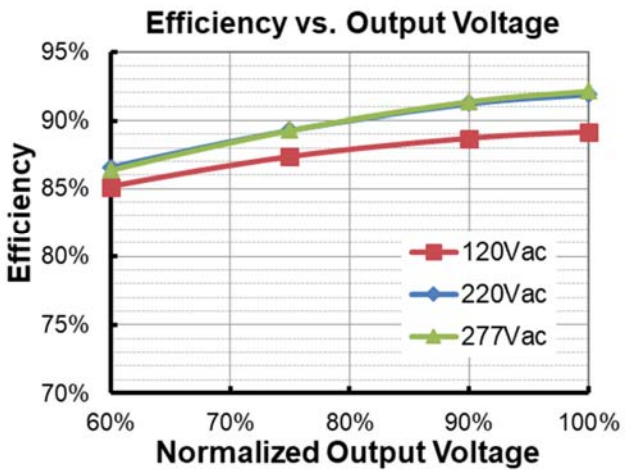
Efficiency vs. Load

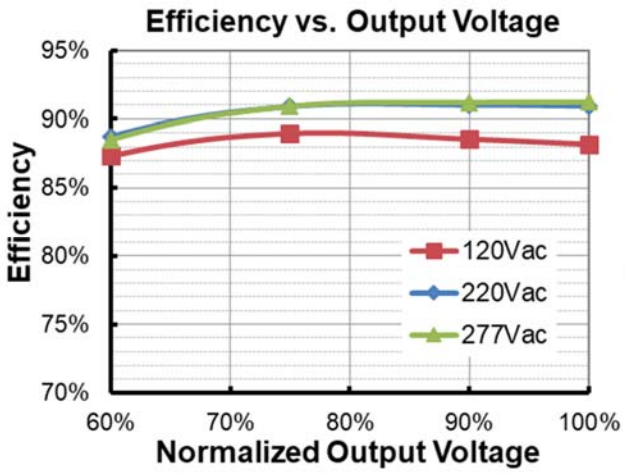
EAM-100S105SB(Io=700mA)



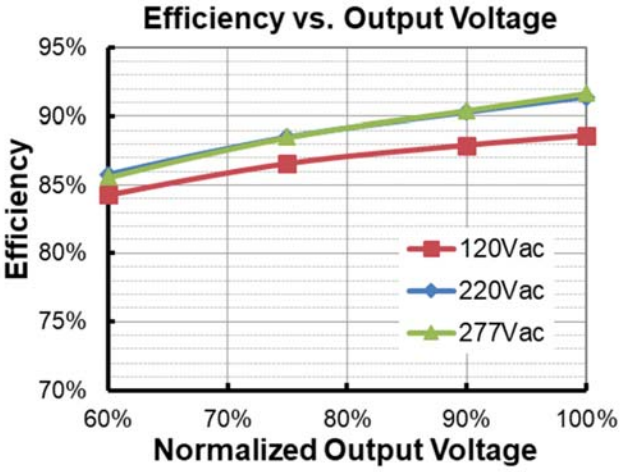
EAM-100S105SB(Io=1050mA)



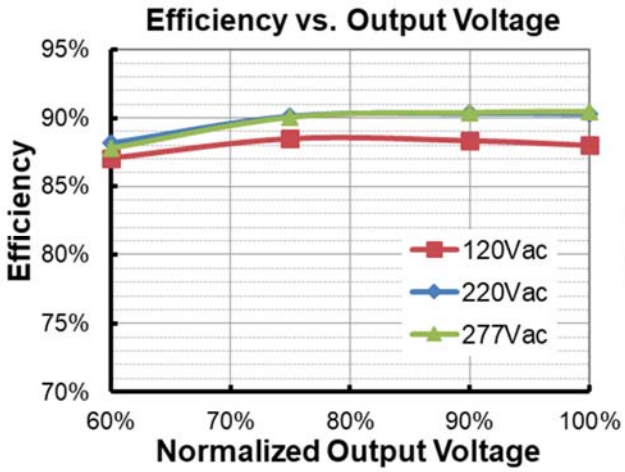
EAM-100S150SB(Io=1050mA)



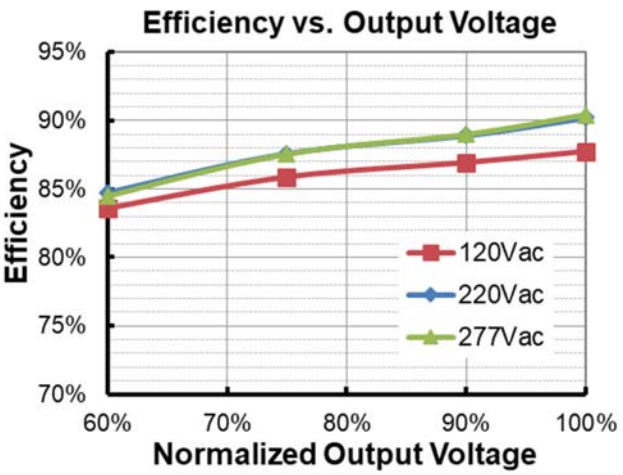
EAM-100S150SB(Io=1500mA)



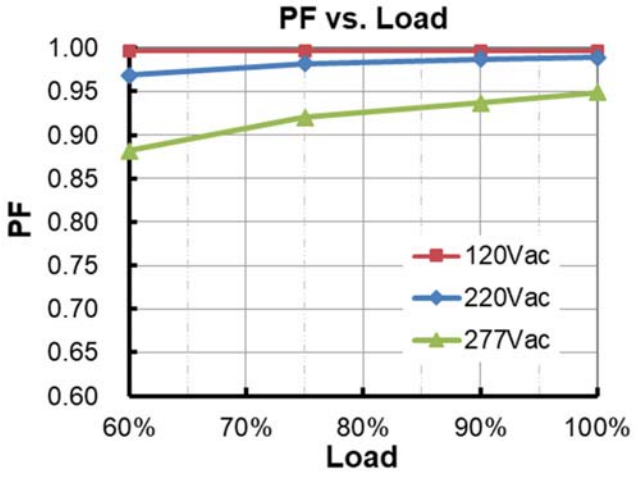
EAM-100S280SB(Io=1750mA)



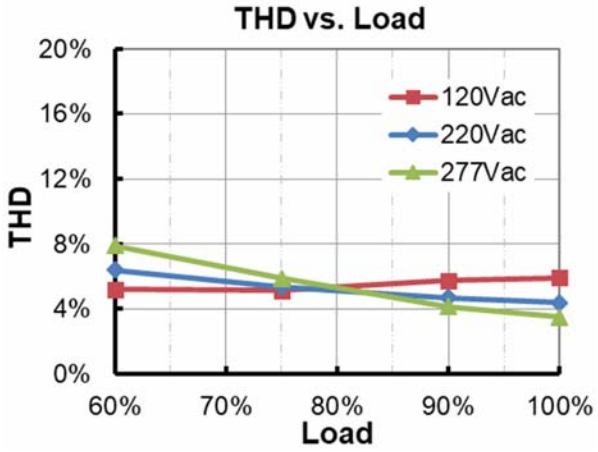
EAM-100S280SB(Io=2800mA)



Power Factor



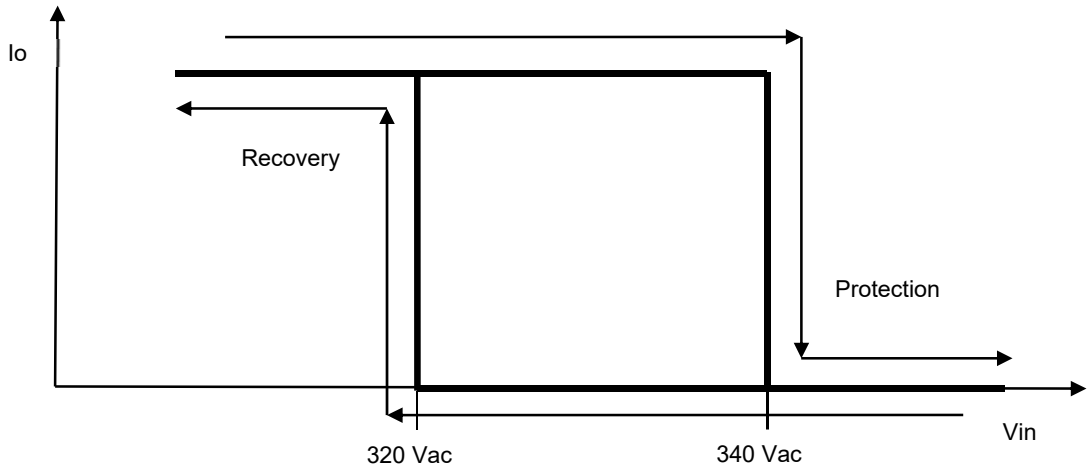
Total Harmonic Distortion



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-100S105SB**

Output Current Setting (Ioset)	Output Voltage Range		Notes
Typ.	**Min.**	**Max.**	**/**
1050mA	48V	95V	Output Current Setting with Constant Power.
…	…	…	
700mA	72V	143V	
…	…	…	Output Current Setting with Power Derating.
525mA	95V	143V	

- **EAM-100S150SB**

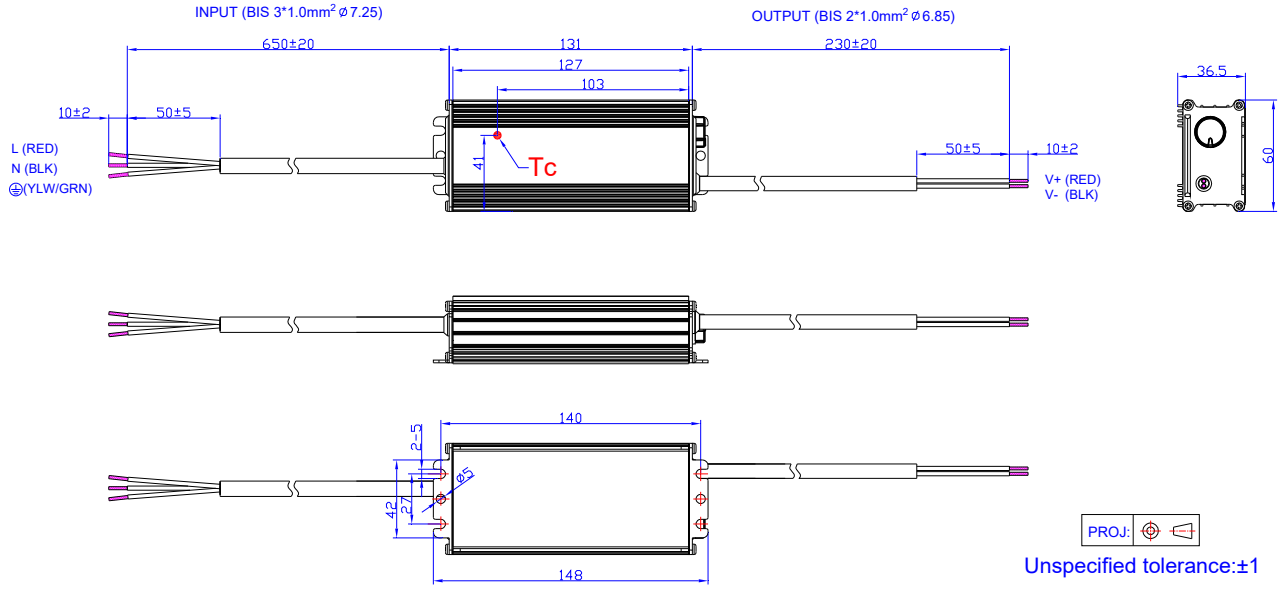
Output Current Setting (Ioset)	Output Voltage Range		Notes
Typ.	**Min.**	**Max.**	**/**
1500mA	34V	67V	Output Current Setting with Constant Power.
…	…	…	
1050mA	48V	95V	
…	…	…	Output Current Setting with Power Derating.
750mA	67V	95V	

- **EAM-100S280SB**

Output Current Setting (loset)	Output Voltage Range		Notes
Typ.	**Min.**	**Max.**	**/**
2800mA	17V	34V	Output Current Setting with Constant Power.
…	…	…	
1750mA	27V	54V	
…	…	…	Output Current Setting with Power Derating.
1400mA	34V	54V	

Note: Endcap covering potentiometer 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
2020-06-17	A	Datasheet Release	/	/
2021-03-25	B	EAC logo	/	Deleted
		Models	Note(5)	Deleted
		Safety &EMC Compliance	EAC	Deleted
2023-03-16	C	CB logo	/	Deleted
		Safety &EMC Compliance	/	Updated
		Mechanical Outline	/	Updated