

# INVENTRONICS

EAM-075SxxxSB

Rev. A

75W AOC IP66/IP67 Driver with 440Vac Protection

## 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



CE CB § EAC

## Description

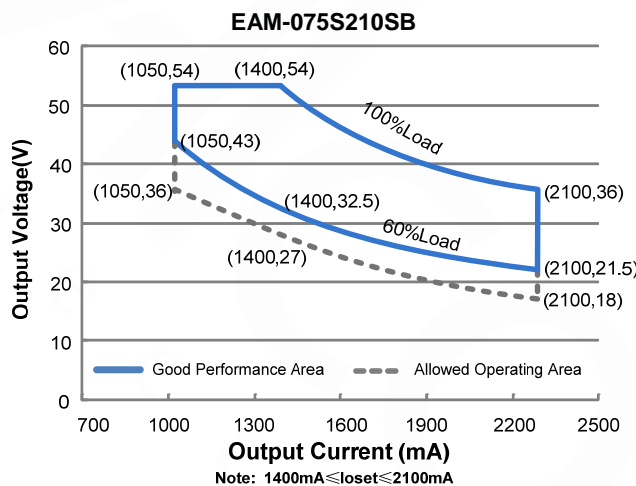
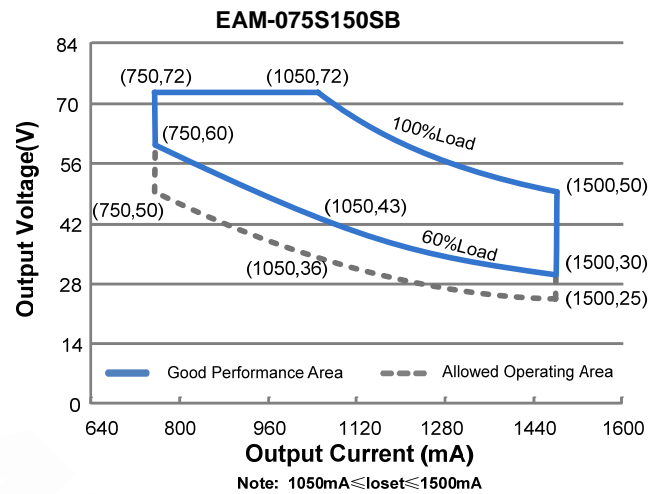
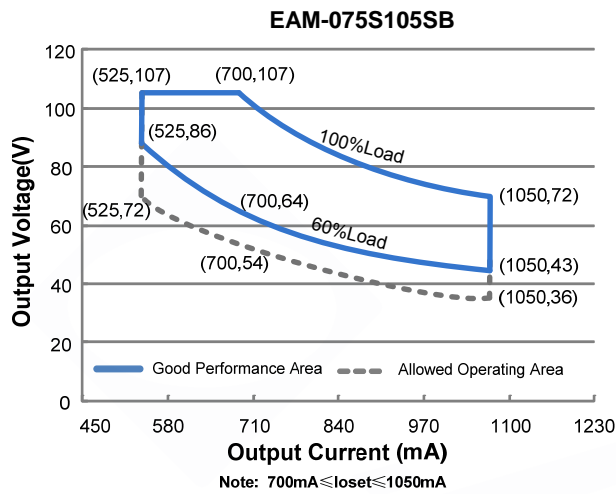
The *EAM-075SxxxSB* series is a 75W, constant-current, AOC LED driver that operates from 90-305Vac input with excellent power factor. It is created for many lighting applications including high bay, tunnel and roadway, etc. The high efficiency of these drivers and compact metal case enables them to run 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 (4)(5)
							120Vac	220Vac	
525-1050mA	700-1050mA	700 mA	90~305 Vac/ 127~300 Vdc	36~107 Vdc	75W	90.0%	0.99	0.96	EAM-075S105SB
750-1500mA	1050-1500mA	1050 mA	90~305 Vac/ 127~300 Vdc	25~72 Vdc	75W	90.0%	0.99	0.96	EAM-075S150SB
1050-2100mA	1400-2100mA	2100 mA	90~305 Vac/ 127~300 Vdc	18~54 Vdc	75W	89.0%	0.99	0.96	EAM-075S210SB

- Notes:** (1) Output current range with constant power at 75W  
 (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-075S105SG).

## 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	-	-	0.80 A	Measured at 100% load and 120 Vac input.
	-	-	0.42 A	Measured at 100% load and 220 Vac input.
Inrush Current(I <sup>2</sup> t)	-	-	0.60 A <sup>2</sup> s	At 220Vac input, 25°C cold start, duration=232 μs, 10%I <sub>pk</sub> -10%I <sub>pk</sub> . See Inrush Current Waveform for the details.
PF	0.9	-	-	At 100-240Vac, 50-60Hz, 60%-100% Load (45-75W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load (56-75W)

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%loset	-	5%loset	At 100% load condition
Output Current Setting(loset) Range				
EAM-075S105SB	525 mA	-	1050 mA	
EAM-075S150SB	750 mA	-	1500 mA	
EAM-075S210SB	1050 mA	-	2100 mA	
Output Current Setting Range with Constant Power				
EAM-075S105SB	700 mA	-	1050 mA	
EAM-075S150SB	1050 mA	-	1500 mA	
EAM-075S210SB	1400 mA	-	2100 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-075S105SB	-	-	120 V	
EAM-075S150SB	-	-	90 V	
EAM-075S210SB	-	-	70 V	
Line Regulation	-	-	±1%	Measured at 100% load
Load Regulation	-	-	±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 loiset	-	0.06%/°C	-	Case temperature = 0°C ~Tc max

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input:				
EAM-075S105SB				
Io= 700 mA	85.5%	87.5%	-	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Io=1050 mA	85.5%	87.5%	-	
EAM-075S150SB				
Io=1050 mA	85.5%	87.5%	-	
Io=1500 mA	85.0%	87.0%	-	
EAM-075S210SB				
Io=1400 mA	84.5%	86.5%	-	
Io=2100 mA	84.0%	86.0%	-	
Efficiency at 220 Vac input:				
EAM-075S105SB				
Io= 700 mA	88.0%	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.)
Io=1050 mA	88.0%	90.0%	-	
EAM-075S150SB				
Io=1050 mA	88.0%	90.0%	-	
Io=1500 mA	87.5%	89.5%	-	
EAM-075S210SB				
Io=1400 mA	87.0%	89.0%	-	
Io=2100 mA	86.5%	88.5%	-	

## General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 277 Vac input: EAM-075S105SB I <sub>o</sub> = 700 mA I <sub>o</sub> =1050 mA EAM-075S150SB I <sub>o</sub> =1050 mA I <sub>o</sub> =1500 mA EAM-075S210SB I <sub>o</sub> =1400 mA I <sub>o</sub> =2100 mA	88.5% 88.5% 88.0% 88.0% 87.0% 87.0%	90.5% 90.5% 90.0% 90.0% 89.0% 89.0%	- - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
MTBF	-	621,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	105,000 Hours	-	Measured at 220Vac input, 80%Load and 70°C case temperature; See lifetime vs. T <sub>c</sub> curve for the details
Operating Case Temperature for Safety T <sub>c_s</sub>	-20°C	-	+90°C	
Operating Case Temperature for Warranty T <sub>c_w</sub>	-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)	4.92 × 2.36 × 1.44 125 × 60 × 36.5			With mounting ear 5.59 × 2.36 × 1.44 142 × 60 × 36.5
Net Weight	-	560 g	-	

## Safety & EMC Compliance

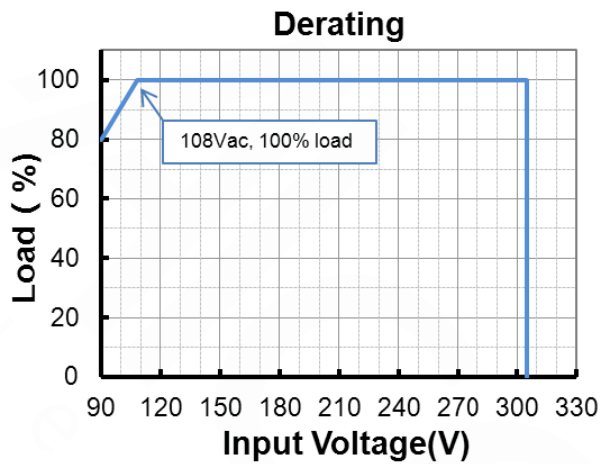
Safety Category	Standard
CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
BIS	IS 15885(PART2/SEC13)
EAC	ГОСТ Р МЭК 61347-1, ГОСТ IEC 61347-2-13
EMI Standards	Notes
EN 55015 <sup>(1)</sup>	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3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

## Safety & EMC Compliance

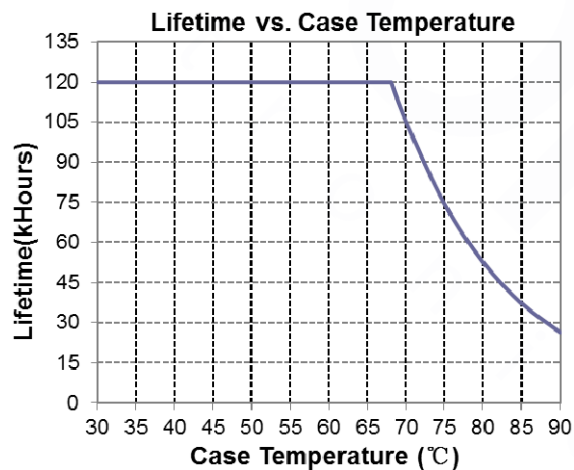
EMS Standards	Notes
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

**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.

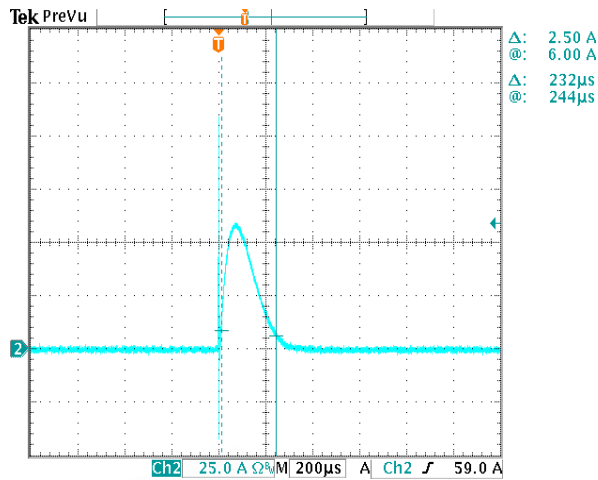
## Derating



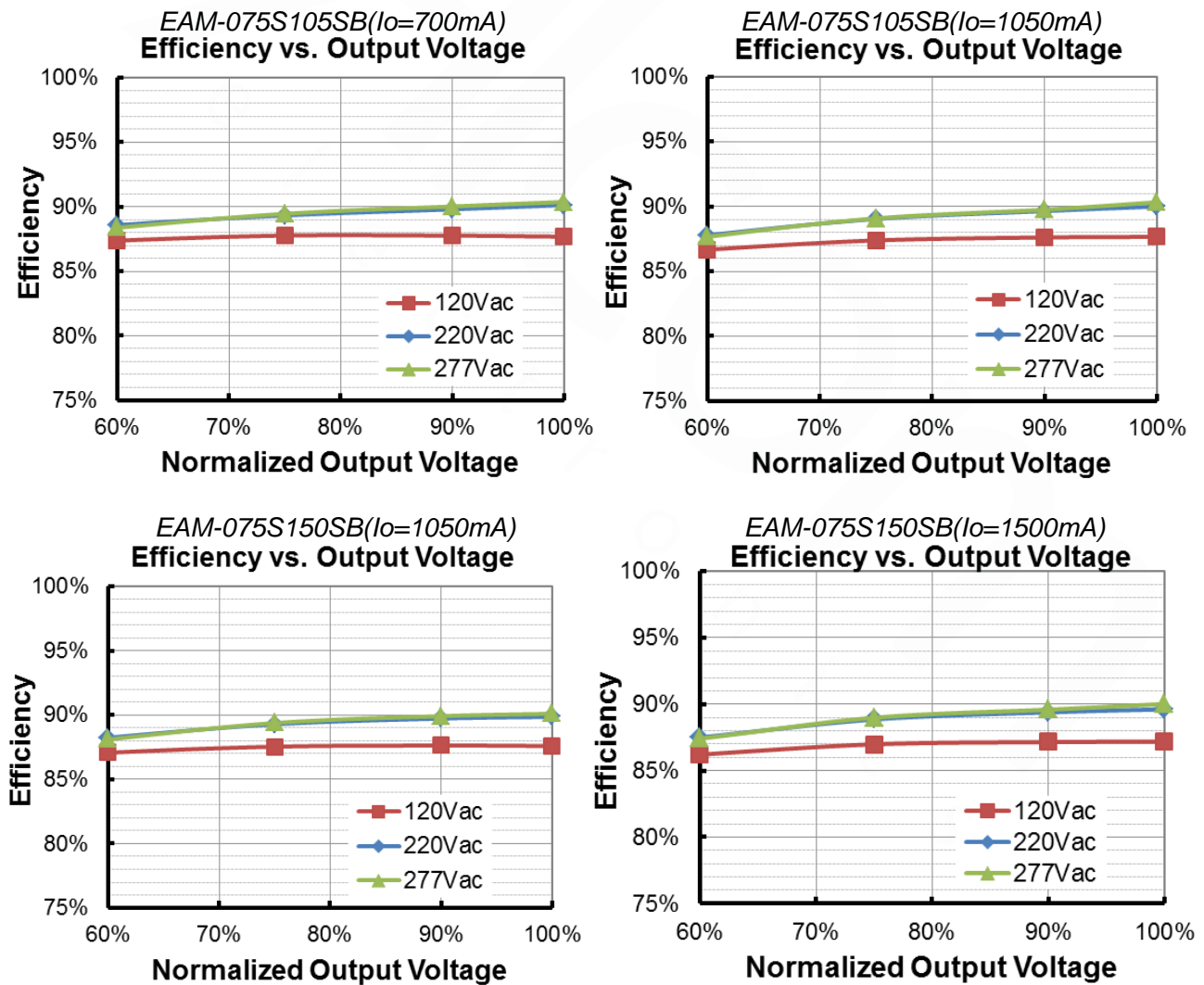
## Lifetime vs. Case Temperature

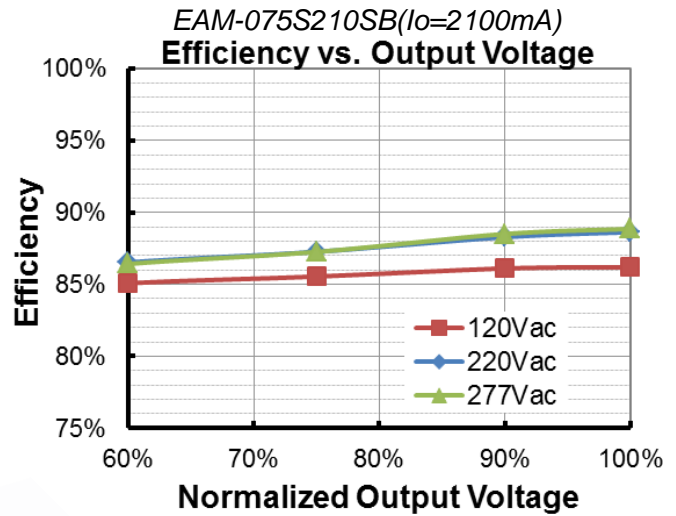
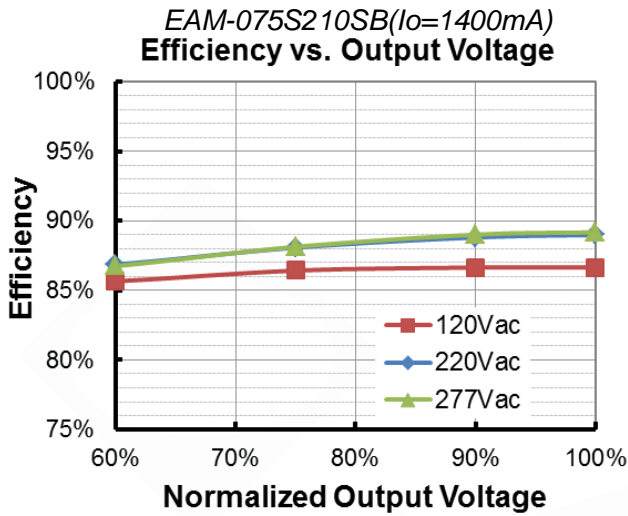


## Inrush Current Waveform

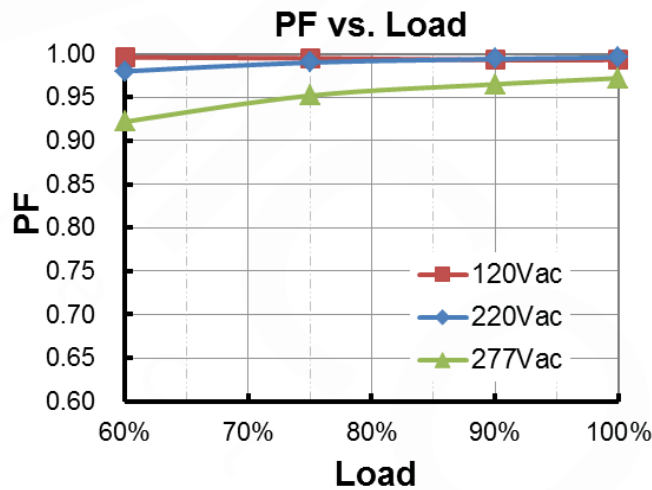


## Efficiency vs. Load

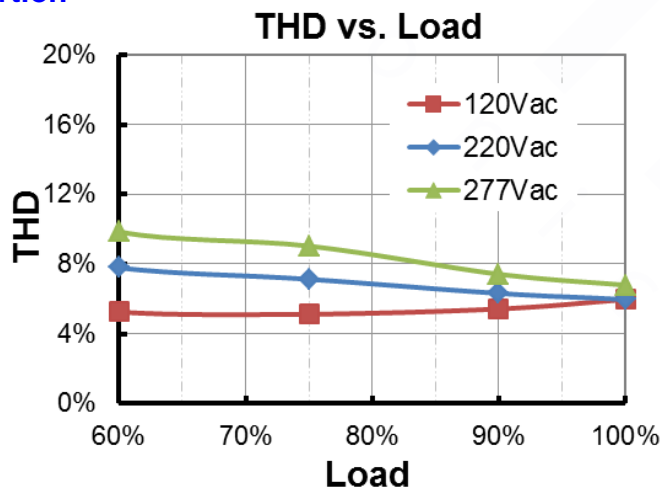




## Power Factor



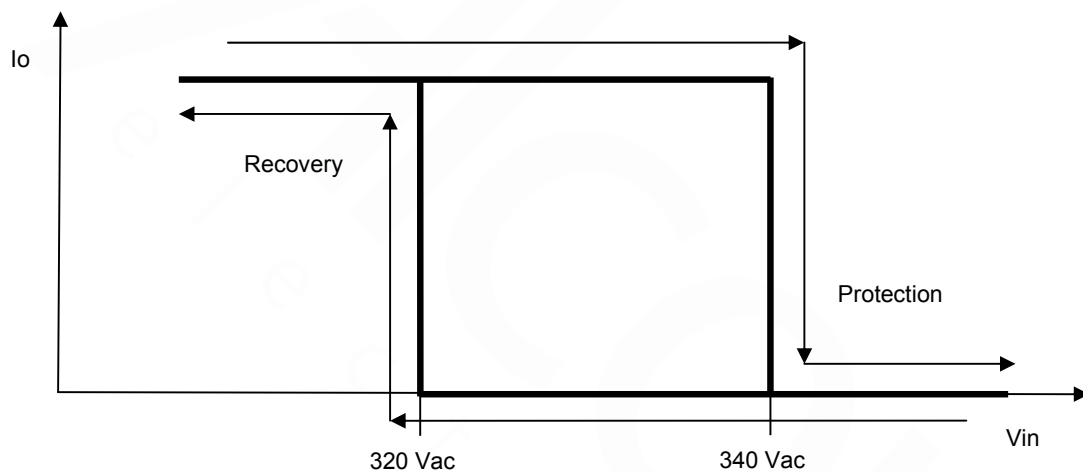
## Total Harmonic Distortion



## 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-075S105SB

Output Current Setting (I <sub>o</sub> set)	Output Voltage Range		Notes
Typ.	Min.	Max.	/
1050mA	36V	72V	Output Current Setting with Constant Power.
...	...	...	
700mA	54V	107V	
...	...	...	Output Current Setting with Power Derating.
525mA	72V	107V	



● EAM-075S150SB

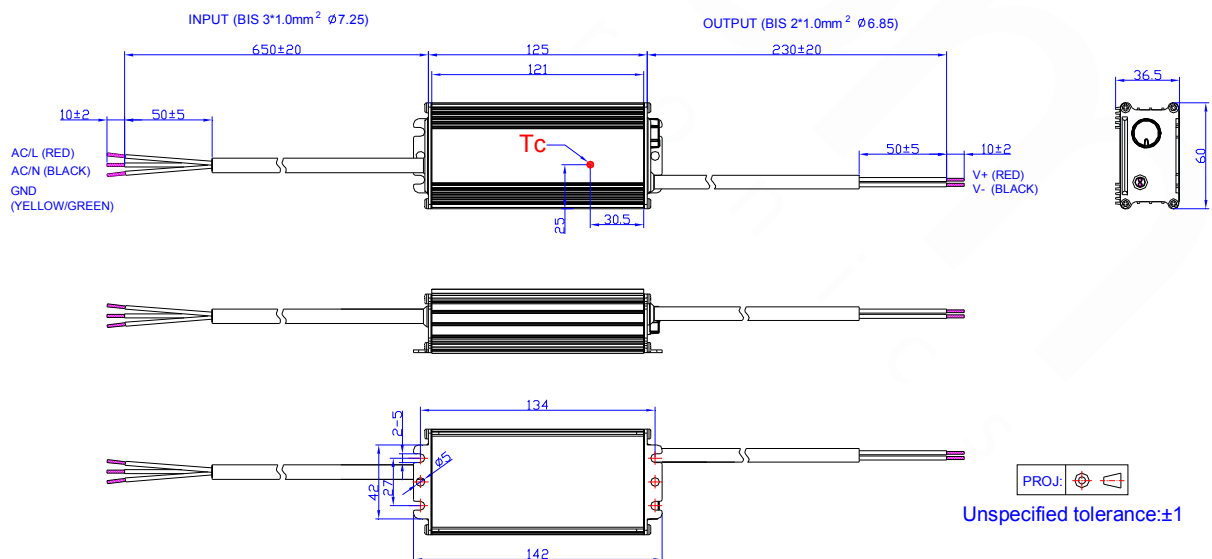
Output Current Setting (loset)	Output Voltage Range		Notes
	Typ.	Min.	
1500mA	25V	50V	Output Current Setting with Constant Power.
...	...	...	
1050mA	36V	72V	
...	...	...	Output Current Setting with Power Derating.
750mA	50V	72V	

● EAM-075S210SB

Output Current Setting (loset)	Output Voltage Range		Notes
	Typ.	Min.	
2100mA	18V	36V	Output Current Setting with Constant Power.
...	...	...	
1400mA	27V	54V	
...	...	...	Output Current Setting with Power Derating.
1050mA	36V	54V	

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

Mechanical Outline



## 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
2020-03-26	A	Datasheets Release	/	/