



FEATURES:

- AC-DC Constant Current or Constant Voltage LED Driver
- Input range 90-305VAC/47-440Hz
- High Efficiency up to 91%
- Operating temperature -40 to 85°C
- Dimmable via analog / 0-10V dimming ②
- Over Temperature Protection
- Over Current Protection
- Waterproof Case rated IP68
- Power Factor Correction
- Short Circuit Protection

Models
Single output



Model	Mode of Operation	Max Output Power (W) ①	Output Voltage Range (V)	Output Current (A)	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Efficiency (%)
AMER90-50180AZ	Constant Current	90	36-50	1.8	90-305/47-440	120-430	91
	Constant Voltage ②		50	0-1.8			89
AMER90-36250AZ	Constant Current	90	24-36	2.5	90-305/47-440	120-430	90
	Constant Voltage ②		36	0-2.5			88
AMER90-24375AZ	Constant Current	90	12-24	3.75	90-305/47-440	120-430	89
	Constant Voltage ②		24	0-3.75			88

Add Suffix "-F" No dimming option

① Exceeding the maximum output power will permanently damage the converter

② The dimming feature is not supported when units are used in Constant Voltage mode only, Aimtec suggests to order "-F" No dimming option in this case.

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Inrush current <2ms	115VAC	40		A
	230VAC	50		
Leakage current	115VAC	0.5		mA
	230VAC	0.75		
AC current	115VAC	1.4		A
	230VAC	0.46		
Power Factor	115VAC		0.98	
	230VAC		0.94	
External fuse			250V/2.5A	
Start up time		700		ms
Surge voltage	2sec		440	V

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Current accuracy		±3		%
Line regulation	LL-HL	±1		%
Load regulation	0-100% load	±0.3		%
Ripple & Noise ③	20MHz Bandwidth	75		mV p-p
Hold-up time		100		ms
Current adjustment range		100-0		%
Minimum Load Voltage	See the models table			

③ Tested with 0.1µF (C/C) or (M/C) and 47µF (E/C) parallel capacitors at the end.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3sec		3000	VAC
Isolation Resistance	500VDC	>1000		MΩ
Isolation Capacitance			1000	pF

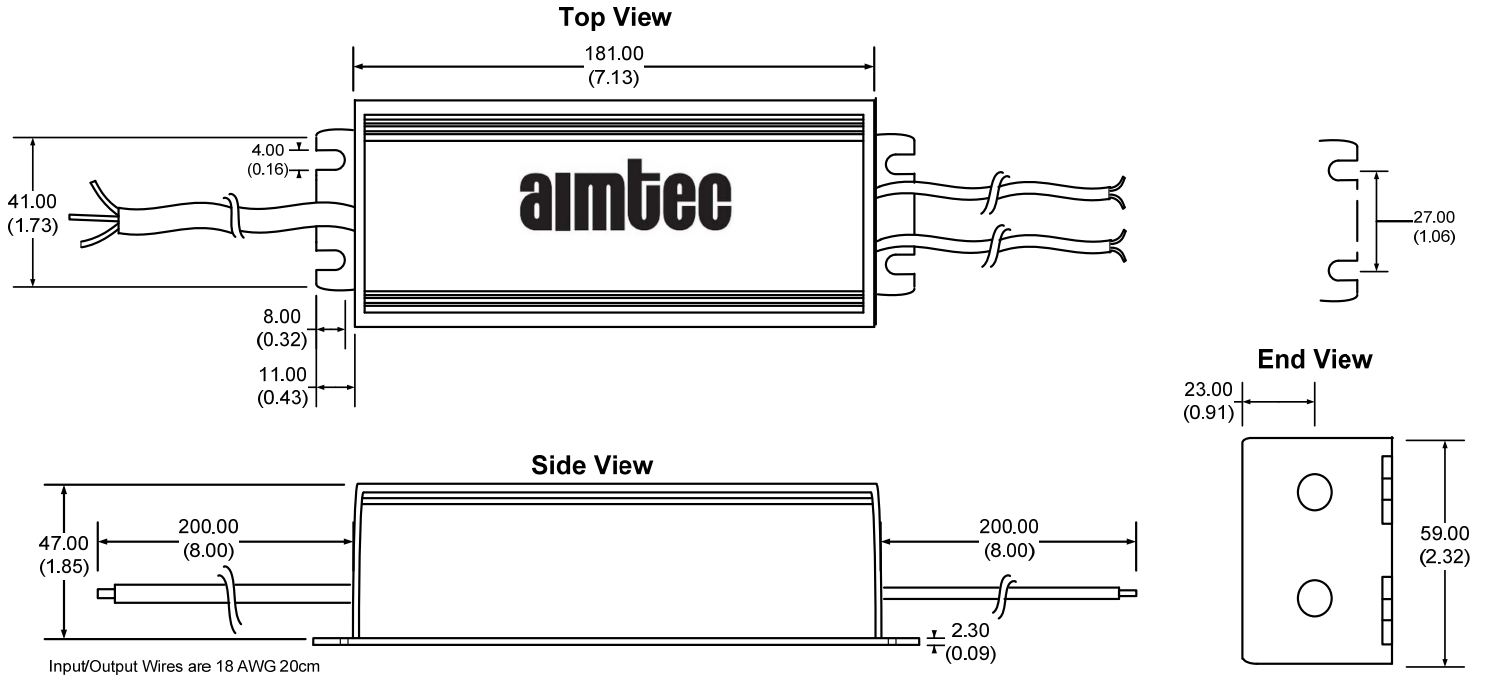
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		100		KHz
Over current protection		95-110% of Iout		
Over voltage protection		110% of Vout		
Short circuit protection		Continuous		
Short circuit restart		Auto recovery		
Over temperature protection		>105°C		
Operating temperature	With derating over 55°C	-40 to +85		°C
Maximum case temperature			100	°C
Storage temperature		-40 to +95		°C
Temperature coefficient		±0.02		% / °C
Cooling		Free air convection		
Humidity			95	% RH
Case material		Aluminum		
Potting		Epoxy (IP67 rated)		
Wires		UL1015 18AWG *20CM		
Weight		750		g
Dimensions (L X H X W)		7.13 x 2.32 x 1.85 inches		181.00 x 59.00 x 47.00 mm
MTBF		>400,000 hrs (MIL-HDBK-217F at +25°C)		

Safety Specifications

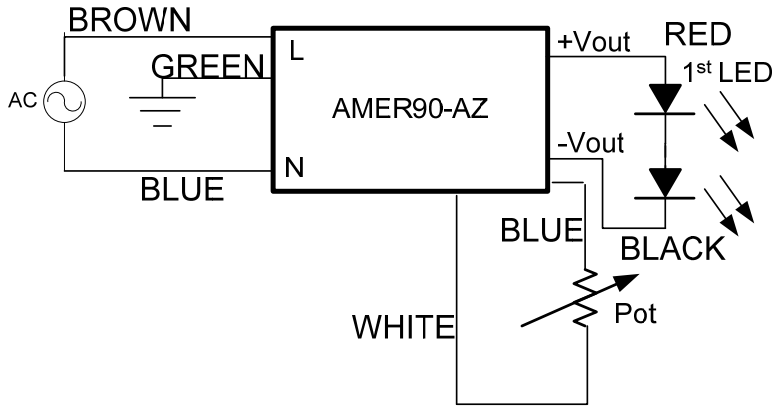
Parameters		
Agency approvals	cULus, CE	
Standards	UL8750, UL60950-1, EN55022, class B, EN60529(IP68), EN61347-1, EN61347-2-13	
	Information Technology Equipment	EN55022 Class B
	Harmonic Current Emissions	IEC/EN 61000-3-2, Class A (EN60555-2)
	Voltage fluctuations and flicker	IEC/EN 61000-3-3, (EN60555-3)
	Electrostatic Discharge Immunity	IEC 61000-4-2
	RF, Electromagnetic Field Immunity	IEC 61000-4-3
	Electrical Fast Transient / Burst Immunity	IEC 61000-4-4
	Surge Immunity	IEC 61000-4-5
	RF, Conducted Disturbance Immunity	IEC 61000-4-6
	Power frequency Magnetic Field Immunity	IEC 61000-4-8
Voltage dips, Short Interruptions Immunity	IEC 61000-4-11	

Dimensions



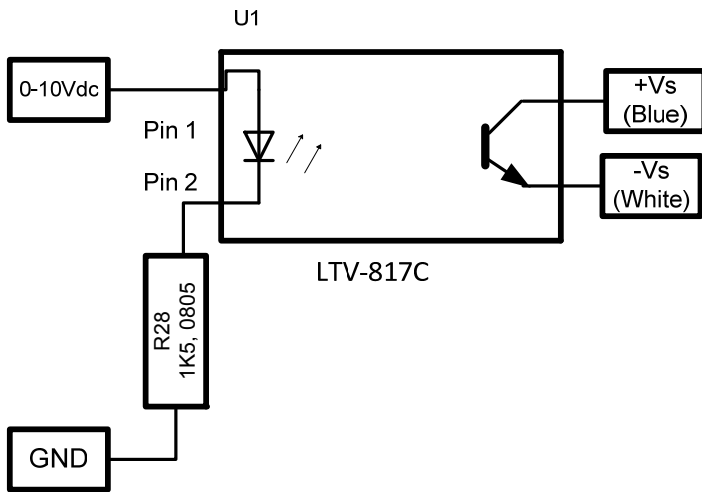
Measurements in Millimeters (inch)
Case Tolerance: ± 0.5 (± 0.02)

Analog (resistive) Dimming Application Circuit

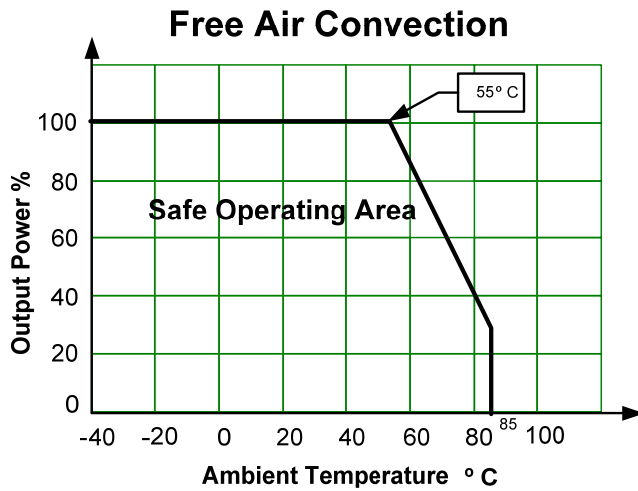


Model Number	Maximum Pot Value (kΩ)
AMER90-50180AZ	15.00
AMER90-36250AZ	24.00
AMER90-24375AZ	16.95

0-10V Dimming Application Circuit

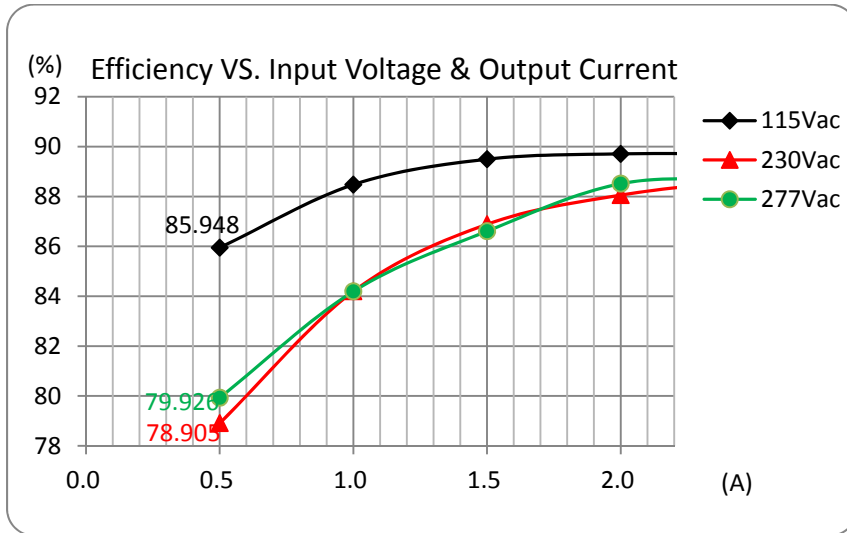


Temperature Graph

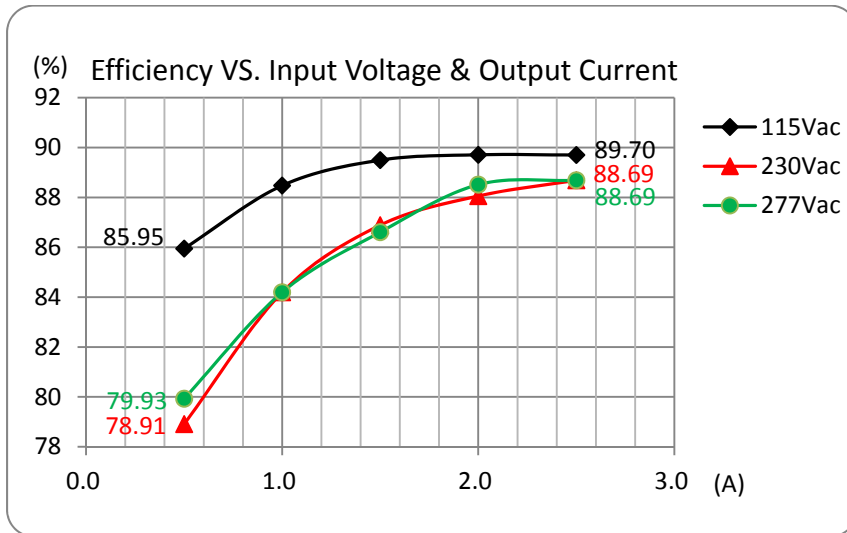


Efficiency vs. Input Voltage and Output Current (CC Load)

AMEPR90-50180AZ

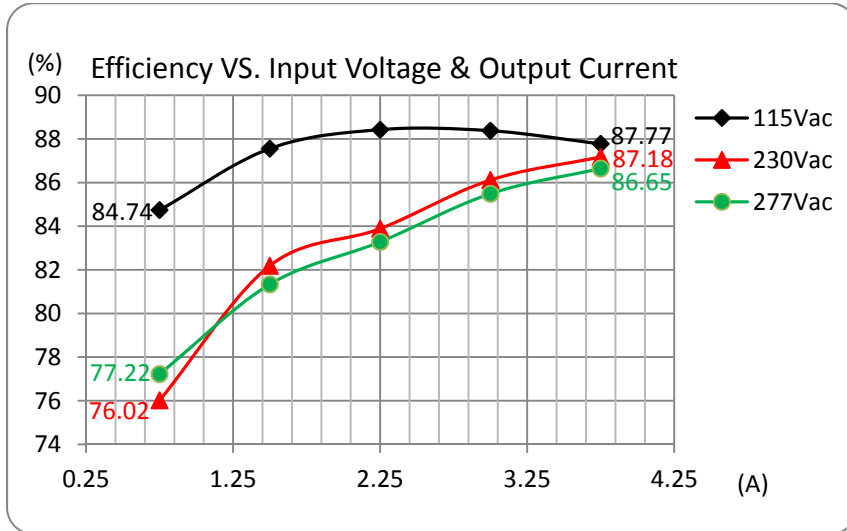


AMER90-36250AZ



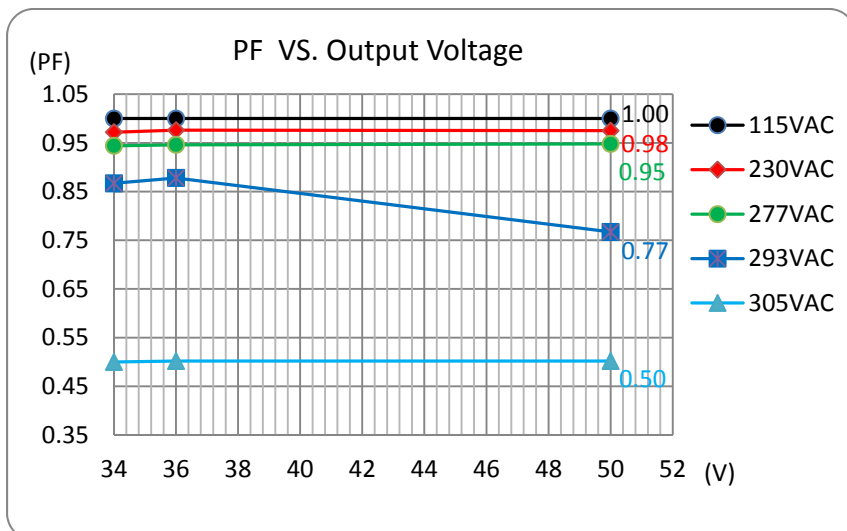
Efficiency vs. Input Voltage and Output Current (CC Load)
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AMER90-24375AZ



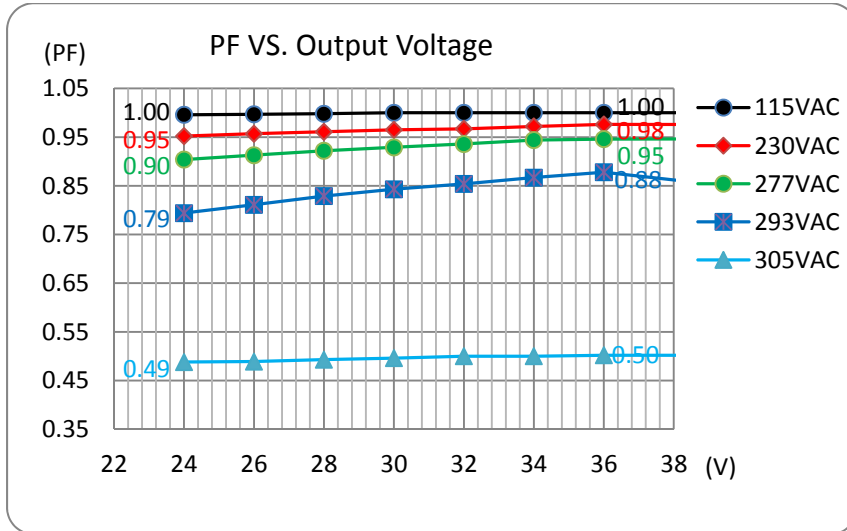
PFC Value vs. Output Load Current (CC Load)

AMEPR90-50180AZ

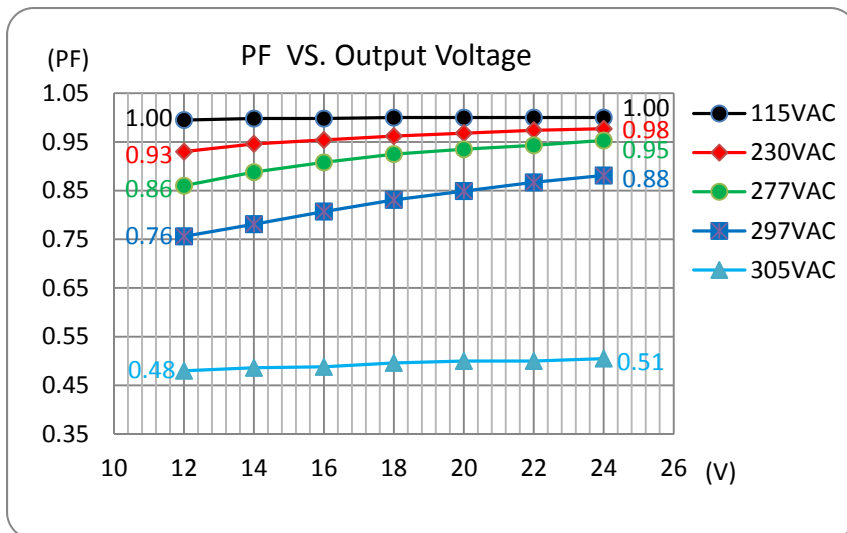


PFC Value vs. Output Load Current (CC Load)
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AMER90-36250AZ

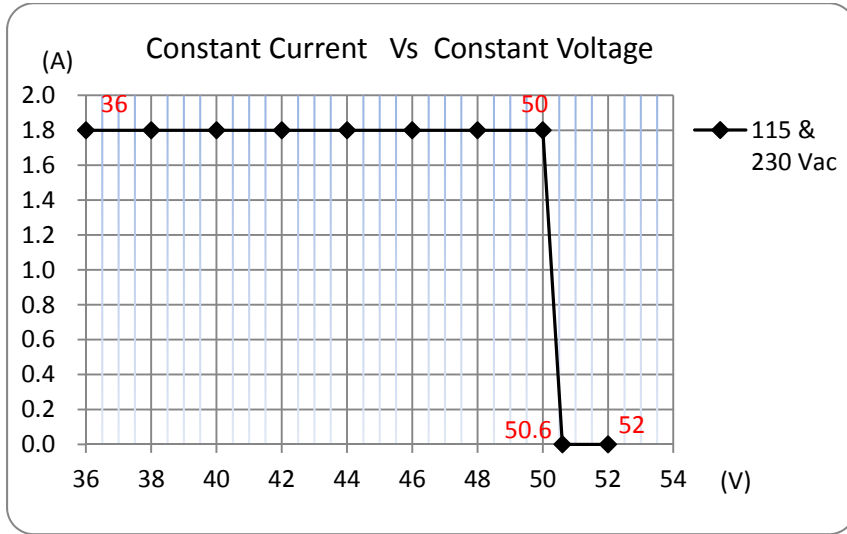


AMER90-24375AZ

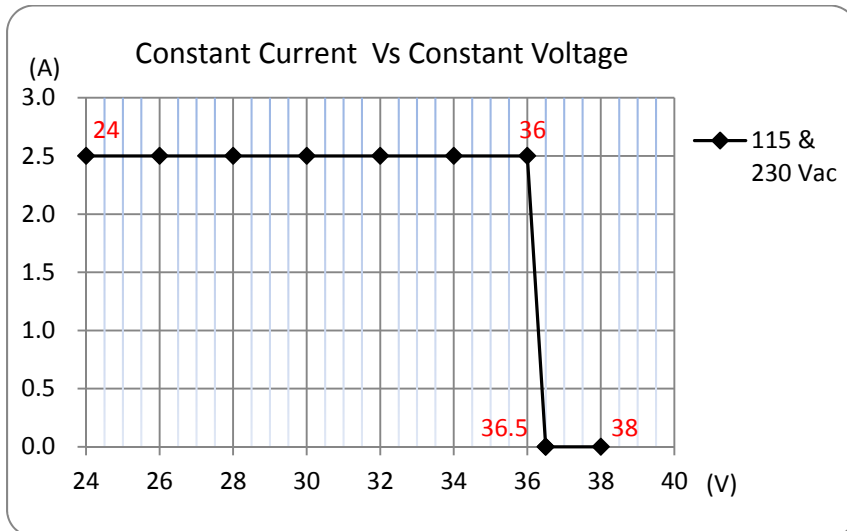


Constant Current Mode vs. Constant Voltage Mode

AMEPR90-50180AZ

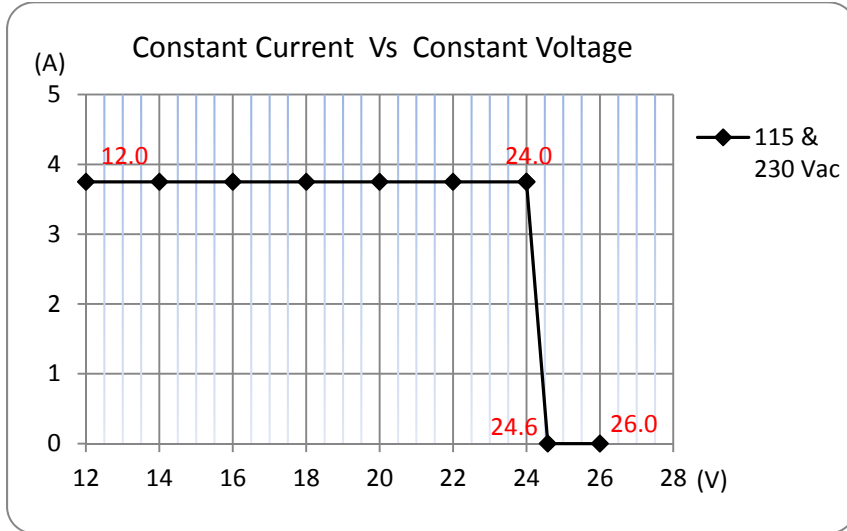


AMER90-36250AZ



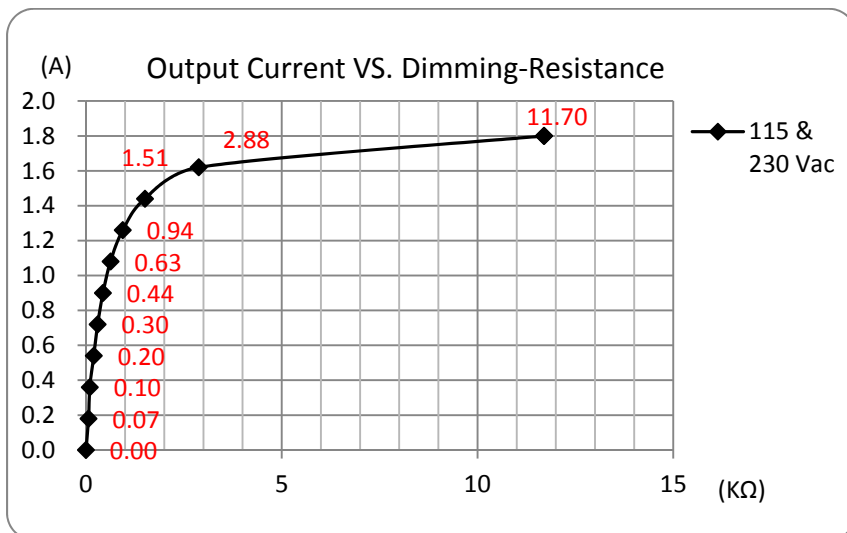
Constant Current Mode vs. Constant Voltage Mode
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AMER90-24375AZ



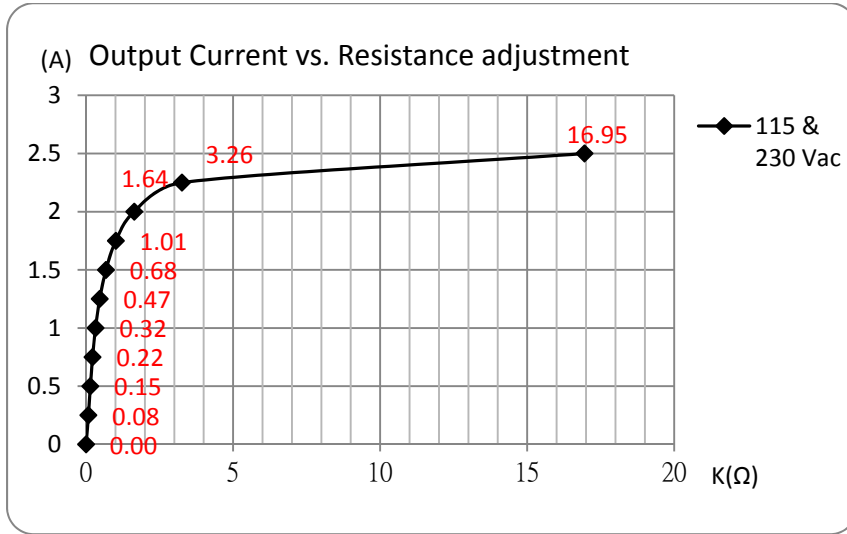
Output Current vs. Radj

AMEPR90-50180AZ

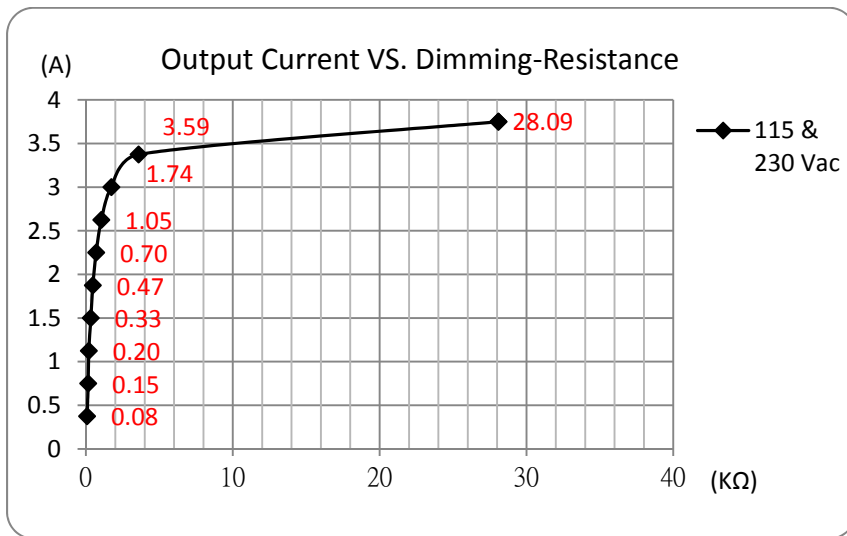


Output Current vs. Radj
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AMER90-36250AZ



AMER90-24375AZ



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