

Series AMER90-AZ

up to 3.75A | AC-DC / DC-DC | LED Driver / Converter



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 / 0-10Vdc / PWM (C version see table)^②
- Over Temperature Protection
- Over Current Protection
- Waterproof Case rated IP68
- Power Factor Correction
- Short Circuit Protection



Models Single output

Model	Max Output Power (W) ^①	Output Voltage Range (V) ^③	Output Current (A) ^③	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Mode of Operation	Efficiency (%)
AMER90-50180AZ	90	36-50	0-1.8	90-305/47-440	120-430	Constant Current	91
						Constant Voltage ^②	89
AMER90-36250AZ	90	24-36	0-2.5	90-305/47-440	120-430	Constant Current	90
						Constant Voltage ^②	88
AMER90-24375AZ	90	12-24	0-3.75	90-305/47-440	120-430	Constant Current	89
						Constant Voltage ^②	88
“C” version supports fully integrated Analog Resistive, PWM, & 0-10Vdc Dimming feature							
AMER90C-50180AZ	90	36-50	0-1.8	90-305/47-440	120-430	Constant Current	91
						Constant Voltage ^②	89
AMER90C-36250AZ	90	24-36	0-2.5	90-305/47-440	120-430	Constant Current	90
						Constant Voltage ^②	88
AMER90C-24375AZ	90	12-24	0-3.75	90-305/47-440	120-430	Constant Current	89
						Constant Voltage ^②	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.

③ In constant current mode output current is maximum shown, in constant voltage mode output voltage is the maximum shown.

All models can be ordered with optional North American colour input wires (add “-NA” to part number when ordering)

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 ④	20MHz Bandwidth	75		mV p-p
Hold-up time		100		ms
Current adjustment range		100-0		%
Minimum Load Voltage	See the models table			

④ 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

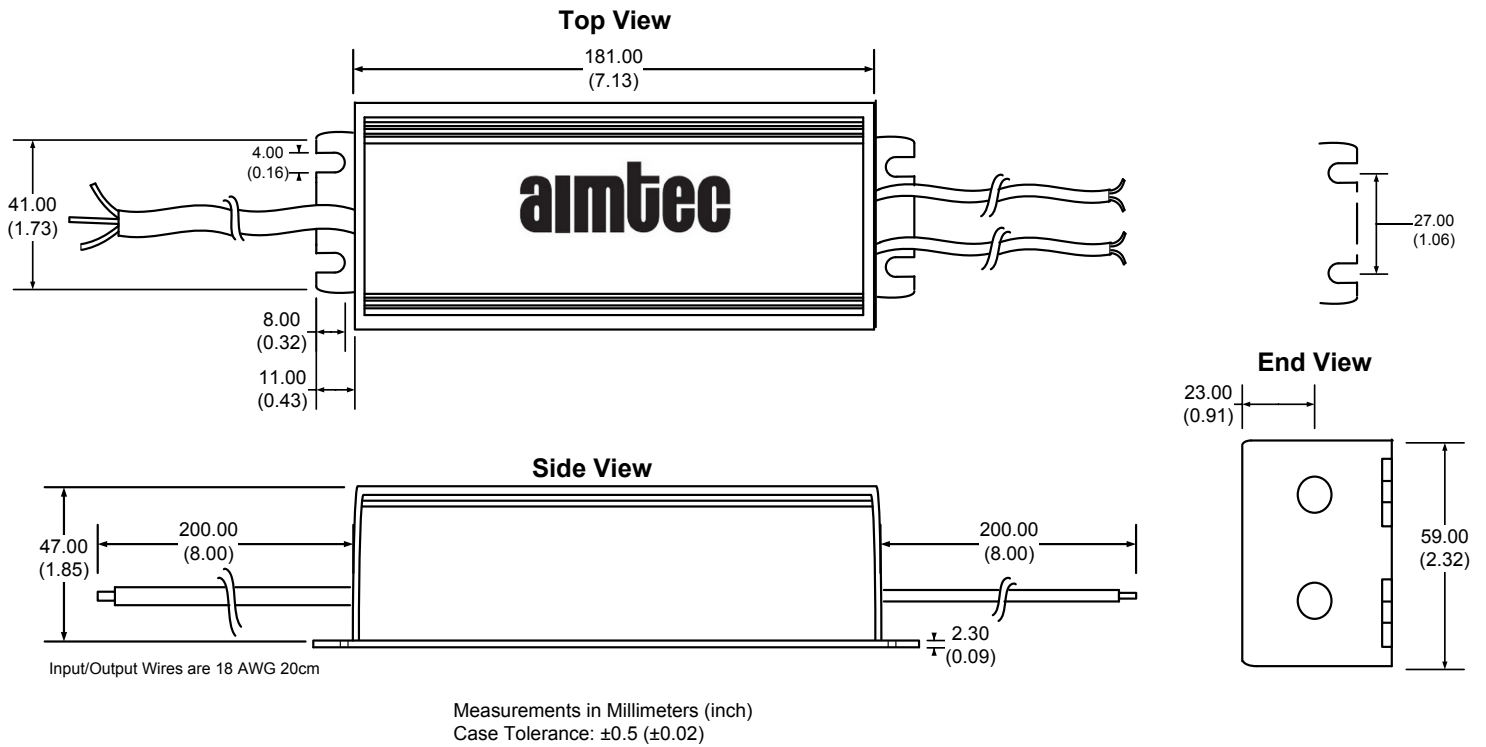
General Specifications

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	See derating table	-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		960		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)		

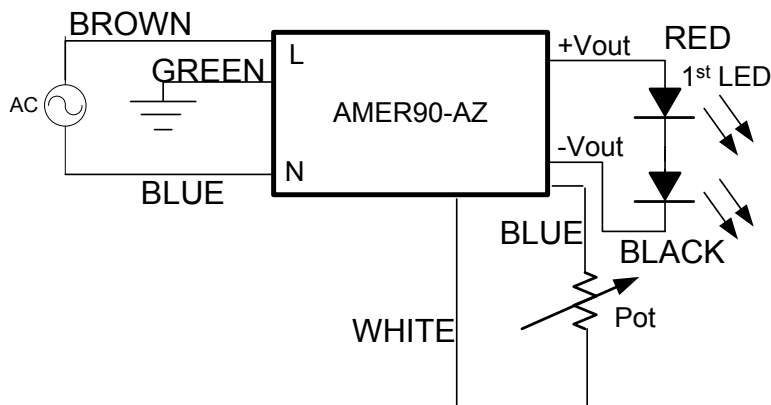
Safety Specifications

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 C
	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

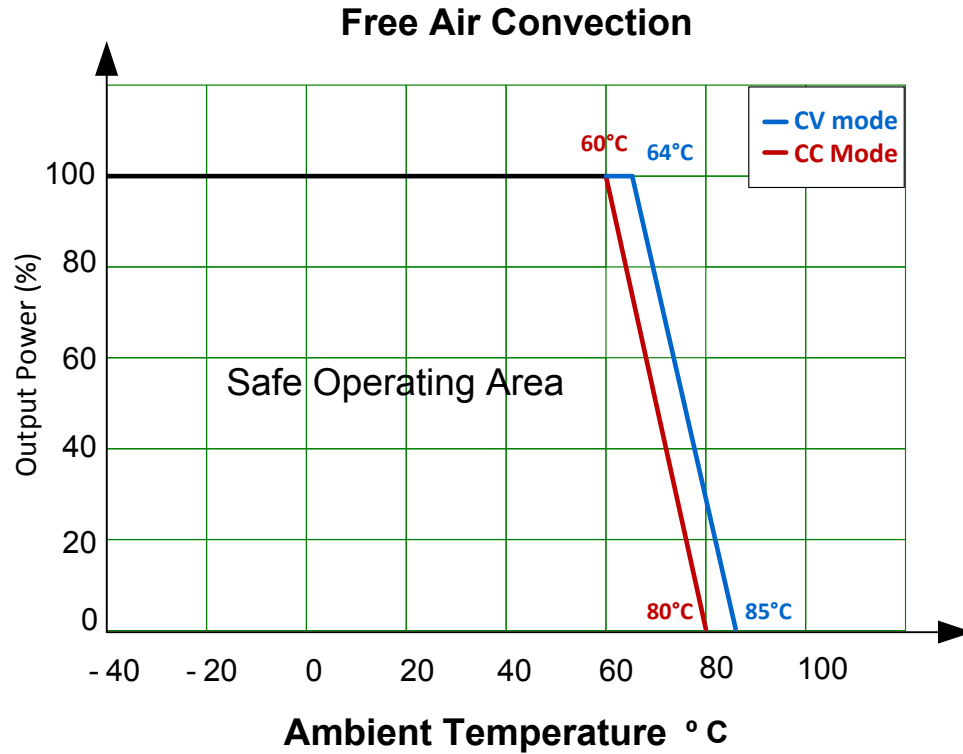


Analog (resistive) Dimming Application Circuit



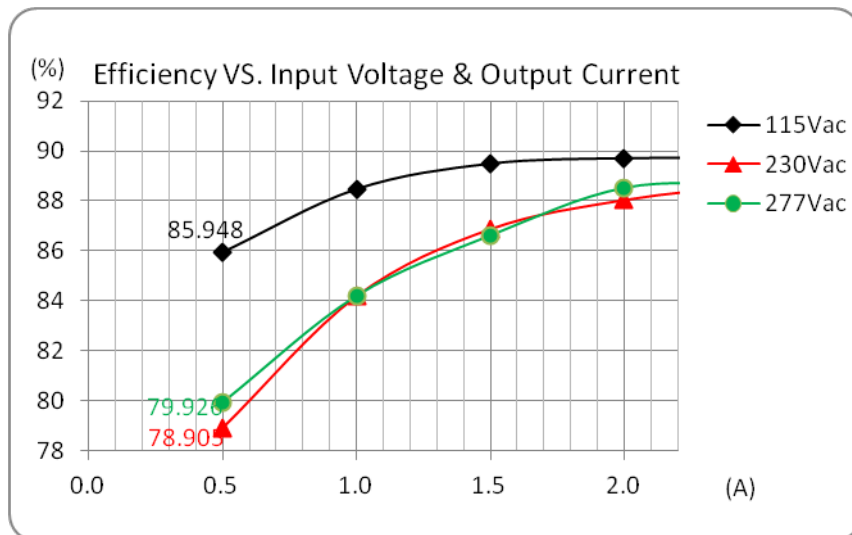
Model Number	Maximum Pot Value (k Ω)
AMER90-50180AZ	15.00
AMER90-36250AZ	24.00
AMER90-24375AZ	16.95

Temperature Graph

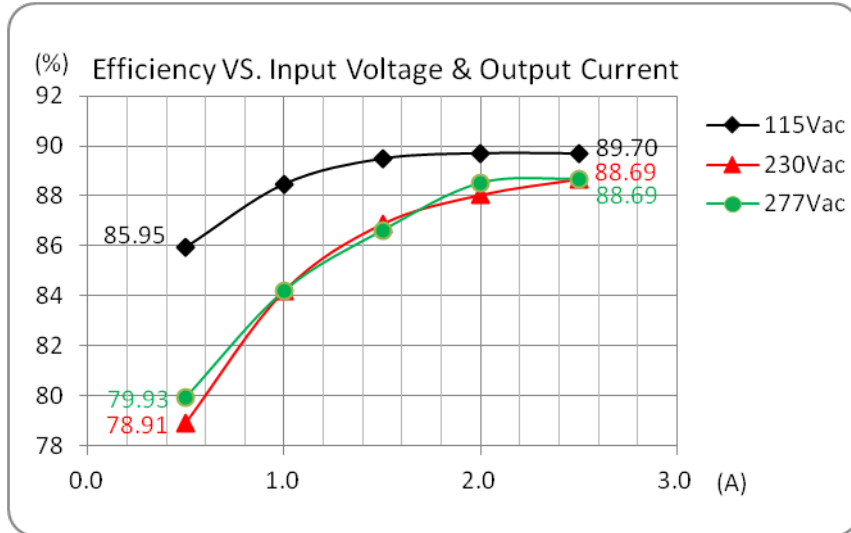


Efficiency vs. Input Voltage and Output Current (CC Load)

AMEPR90-50180AZ

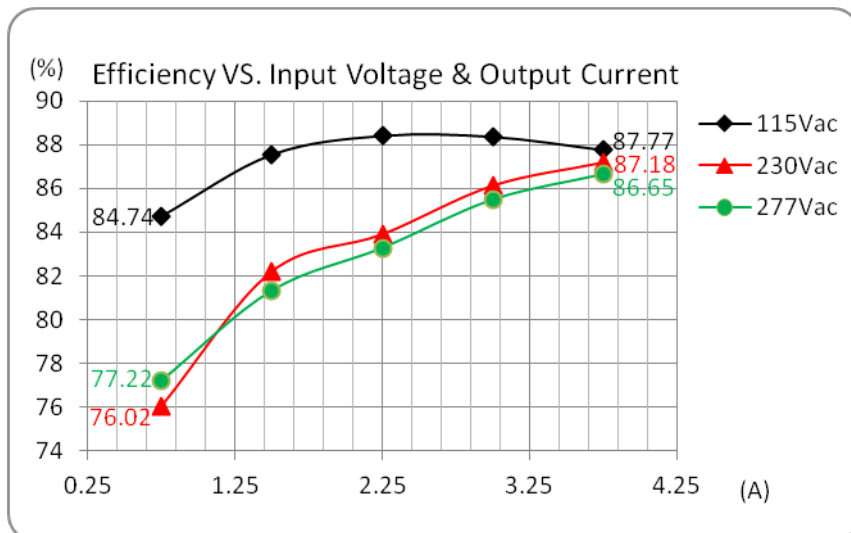


AMER90-36250AZ



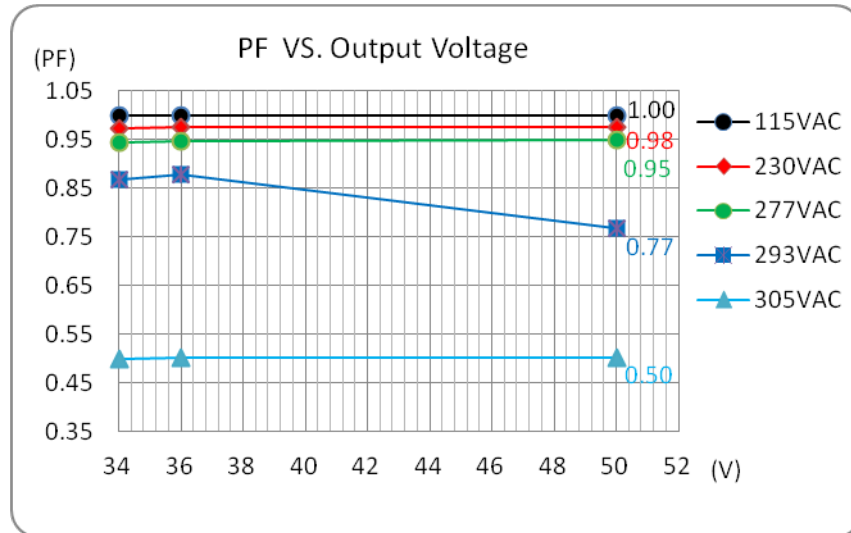
Efficiency vs. Input Voltage and Output Current (CC Load)
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AMER90-24375AZ



PFC Value vs. Output Load Current (CC Load)

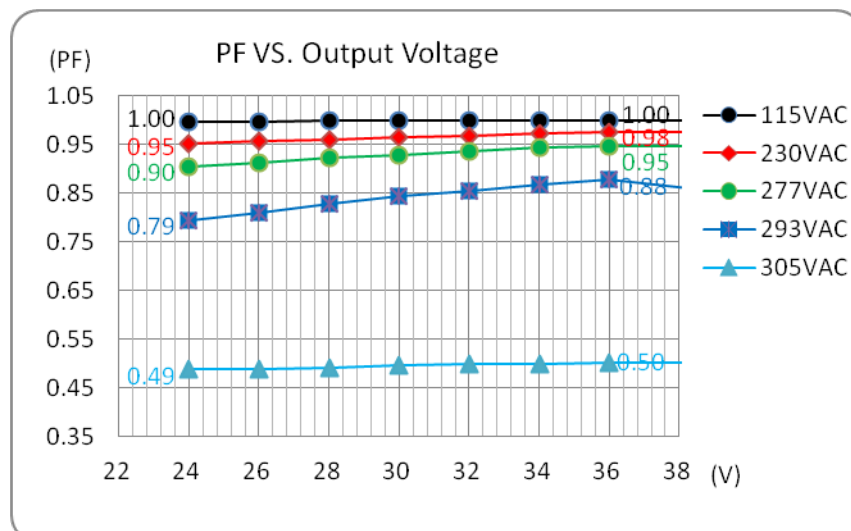
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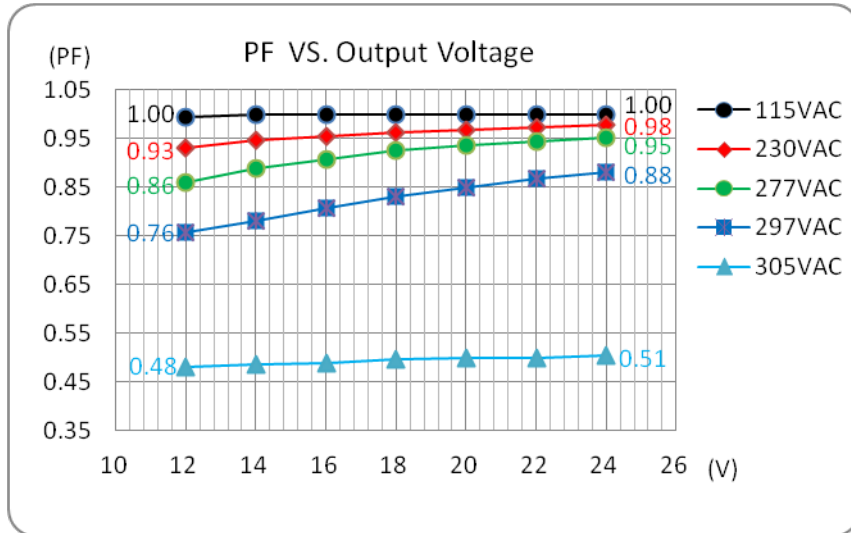
PFC Value vs. Output Load Current (CC Load)

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AMER90-36250AZ

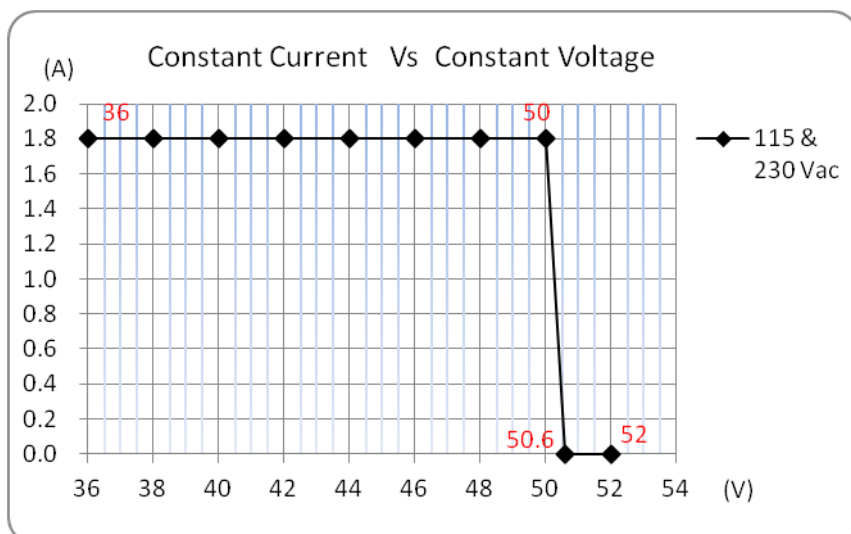


AMER90-24375AZ

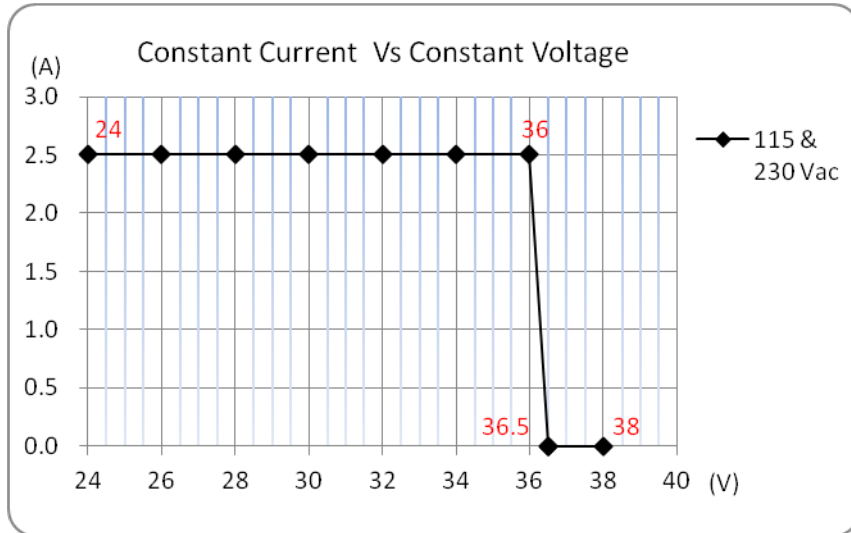


Constant Current Mode vs. Constant Voltage Mode

AMEPR90-50180AZ

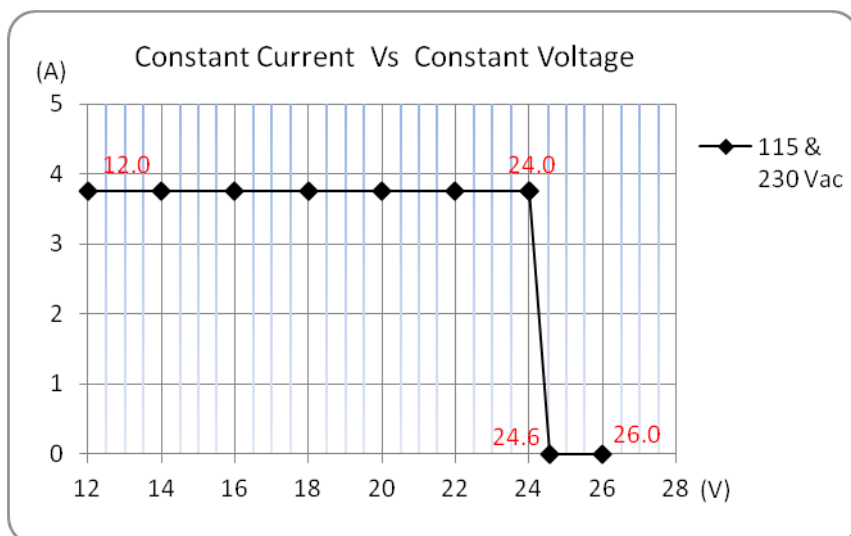


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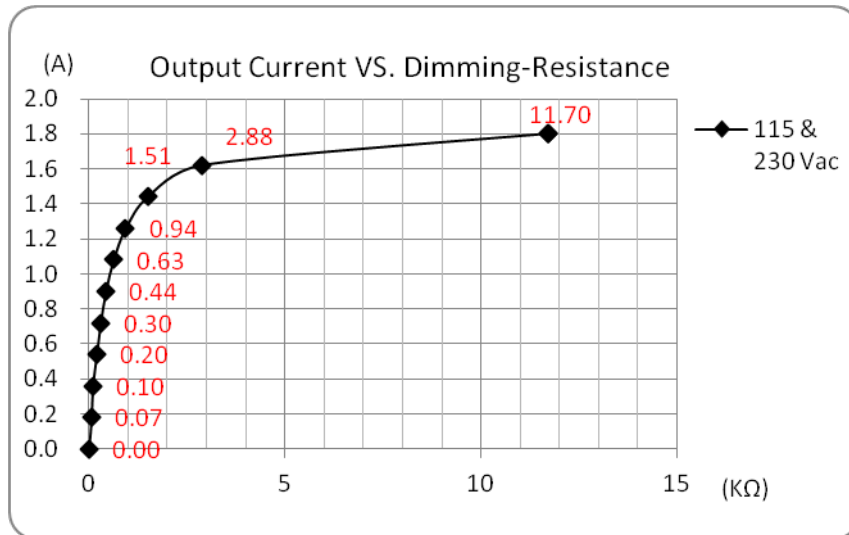
Constant Current Mode vs. Constant Voltage Mode (continued)

AMER90-24375AZ



Output Current vs. Radj

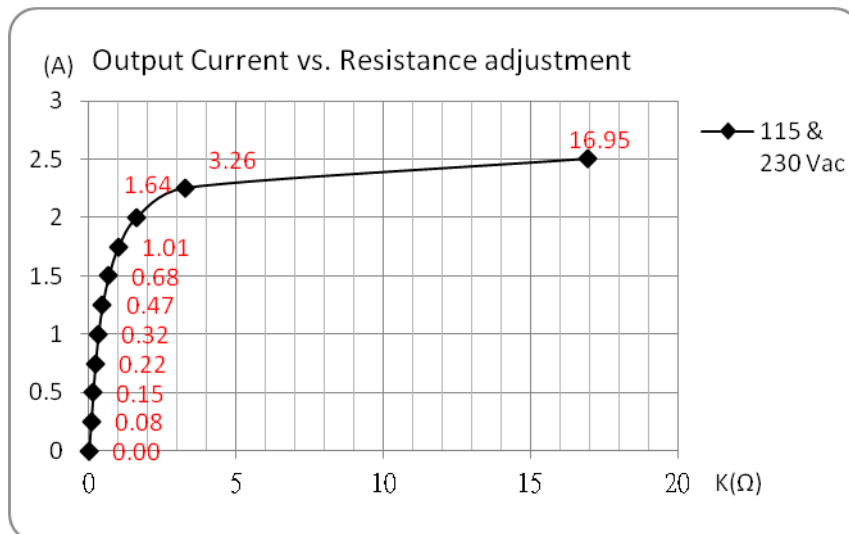
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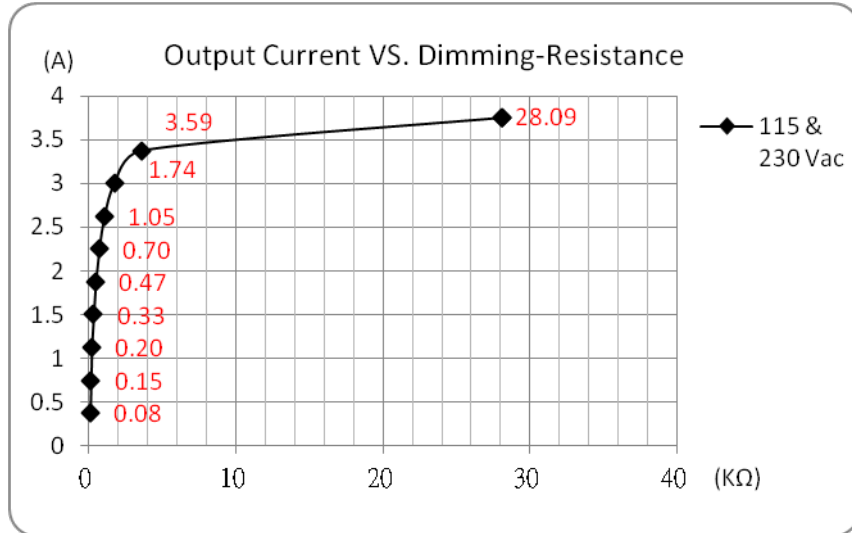
Output Current vs. Radj

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AMER90-36250AZ



AMER90-24375AZ



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