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 88%
- Operating temperature -40 to 85°C
- Dimmable via resistive
- 5 Years Limited Warranty
- Over Temperature Protection
- Over Current Protection
- Waterproof Case rated IP68
- Power Factor Correction
- Short Circuit Protection

RoHS CE

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 (%)		
							115 VAC	230 VAC	277 VAC
AMER90-50180AZ	90	36-50	1.8	90-305/47-440	130-430	Constant Current	87	86	86
						Constant Voltage②	88	87	87
AMER90-36250AZ	90	24-36	2.5	90-305/47-440	130-430	Constant Current	87	87	87
						Constant Voltage②	88	87	87
AMER90-24375AZ	90	12-24	3.75	90-305/47-440	130-430	Constant Current	86	86	86
						Constant Voltage②	87	86	86
Add suffix "-F"	No dimming option								

①Exceeding the maximum output power will permanently damage the converter.

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

③In 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 (black (L), white (N), green (GND)). Add "–NA" to part number when ordering.

NOTE: Aimtec limited warranty of 5 years is valid based on product operation at datasheet specifications at ambient temperature of 25°C, humidity<75%, nominal input voltage (115/230/277VAC) and at rated output load unless otherwise specified. See http://www.aimtec.com/terms-saleAMER90-AZ's AC/DC LED drivers have electrical safeguards designed within to protect it from conventional electrical abnormalities with the levels listed in the safety table. Applications for use within rural agricultural, heavy industrial, and other areas or regions which are prone to 'dirty' electrical conditions which would subject any of the above models to excessive voltages surges or spikes, may damage or cause early life failure of product. In this case consideration should be made by the end user to ensure that adequate line or mains surge suppression is installed in front of Aimtec device to ensure the longevity of the products. Failure to identify excessive line surges violations prior to installation may damage sensitive equipment permanently.

Input Specifications

Parameters	Conditions	Typical	Maximum	Units
Current (full load)	115 VAC		1500	mA
	230 VAC		600	mA
	277 VAC		500	mA
Inrush current <2ms(cold start)	115 VAC		40	A
	230 VAC		50	A
	277 VAC		60	A
Leakage current	I/O		0.25	mA
	I/FG, O/FG		3.5	mA
Power factor	115 VAC	0.98		
	230 VAC	0.94		
	277 VAC	0.90		
External fuse	Recommended slow blow type	2.5		A
Start-up time		1000		ms

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Current accuracy		±3		%
Line regulation	(LL-HL)	±2		%
Load regulation	0-100% load	±3		%
Ripple & Noise*		150		mV p-p
Hold-up time		100		ms
Current adjustment range⑤		100-10		%

④Ripple and Noise are measured at 20MHz bandwidth by using a 0.1μF (M/C) or (C/C) and 47μF (E/C) parallel capacitor.
⑤Note: from 0% to 10% dimming adjustment signal instability may be present.

Isolation Specifications

Parameters		Conditions	Typical	Rated	Units
Tested voltage	I/O	3sec		3750	VAC
	I/FG			2000	VAC
	O/FG			500	VAC
Isolation resistance		500VDC	>1000		MΩ

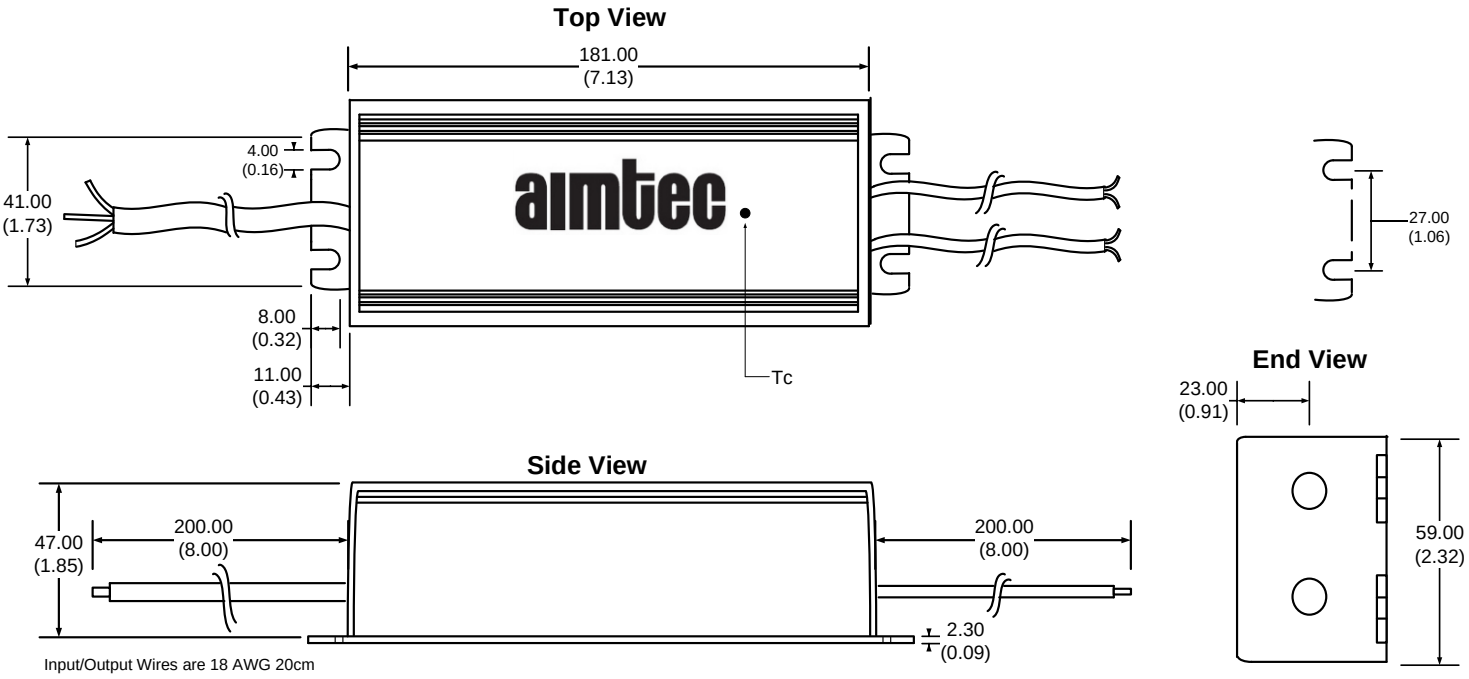
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency			125	KHz
Over current protection	AMER90-50180AZ		1.87	A
	AMER90-36250AZ		2.57	
	AMER90-24375AZ		3.8	
Over voltage protection	Refer to Constant Current vs. Constant Voltage Mode curve			
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	Non condensing		95	% RH
Case material	Aluminum			
Potting	Epoxy (IP67 rated)			
Wires	UL1015 18AWG Input & 14AWG Output *20CM			
Weight	900			g
Dimensions (L X W X H)	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	CE	
Standards	Designed to meet UL8750, IEC/EN 60950-1 standards, 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 Level 3
	RF, Electromagnetic Field Immunity	IEC 61000-4-3 Level 2
	Electrical Fast Transient / Burst Immunity	IEC 61000-4-4 Level 2
	Surge Immunity	IEC 61000-4-5 Level 3
	RF, Conducted Disturbance Immunity	IEC 61000-4-6 Level 2
	Power frequency Magnetic Field Immunity	IEC 61000-4-8 Level 1
	Voltage dips, Short Interruptions Immunity	IEC 61000-4-11

Dimensions

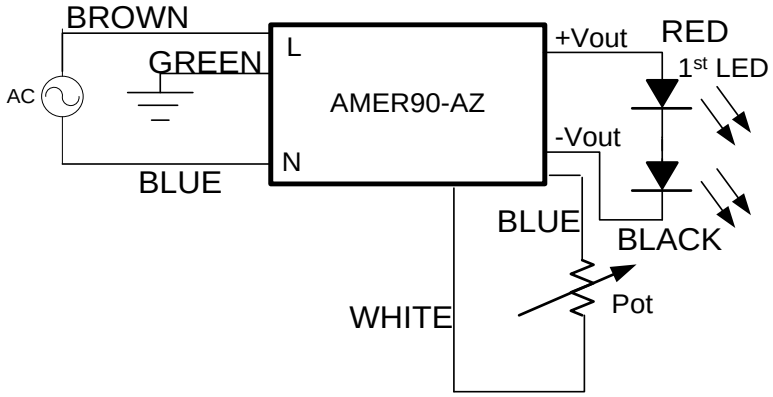


Measurements in Millimeters (inch)
Case Tolerance: ±0.5 (±0.02)

Wire connection:

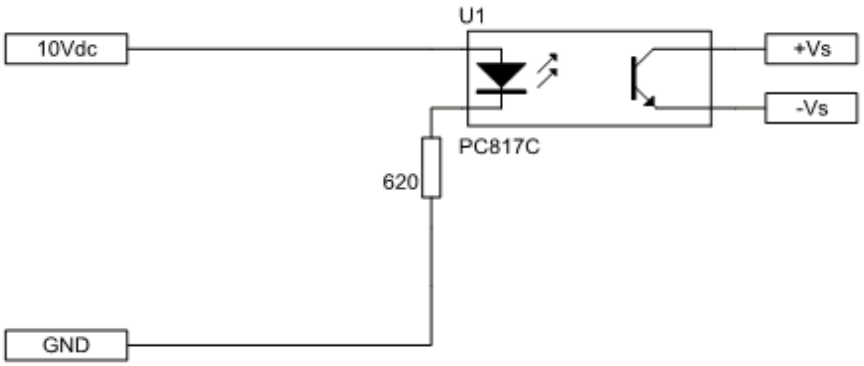
Wire	Connection
Brown	AC L
Blue	AC N
Green	Ground
Red	+V output
Black	-V Output
Blue (Dimming)	+ Vs dimming
White (Dimming)	-Vs dimming

Analog (resistive) Dimming Application Circuit

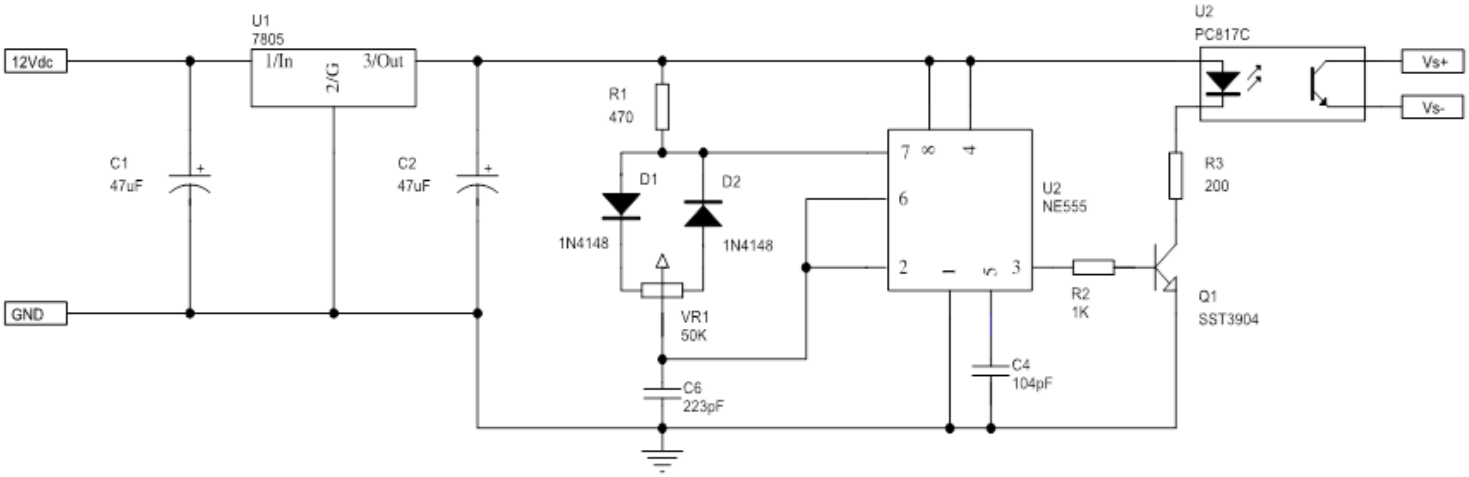


Model Number	Maximum Pot Value (kΩ)
AMER90-50180AZ	11.70
AMER90-36250AZ	16.95
AMER90-24375AZ	28.09

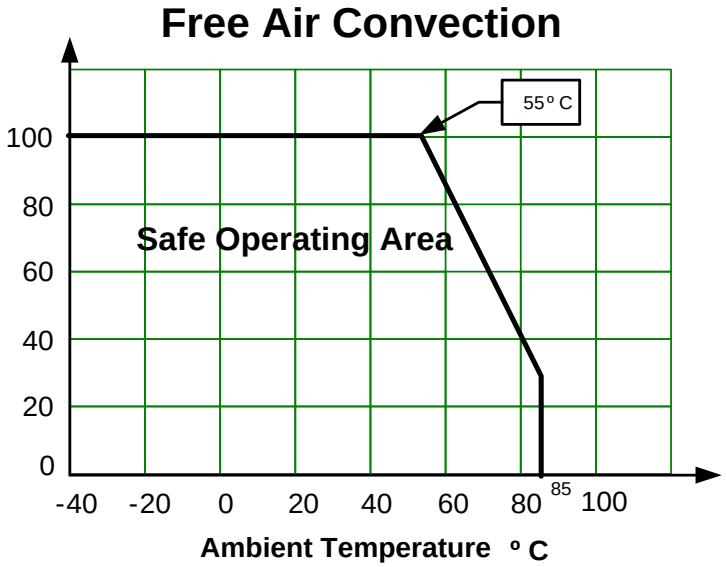
Analog (0-10V) Dimming Application Circuit



PWM (1KHz) Dimming Application Circuit

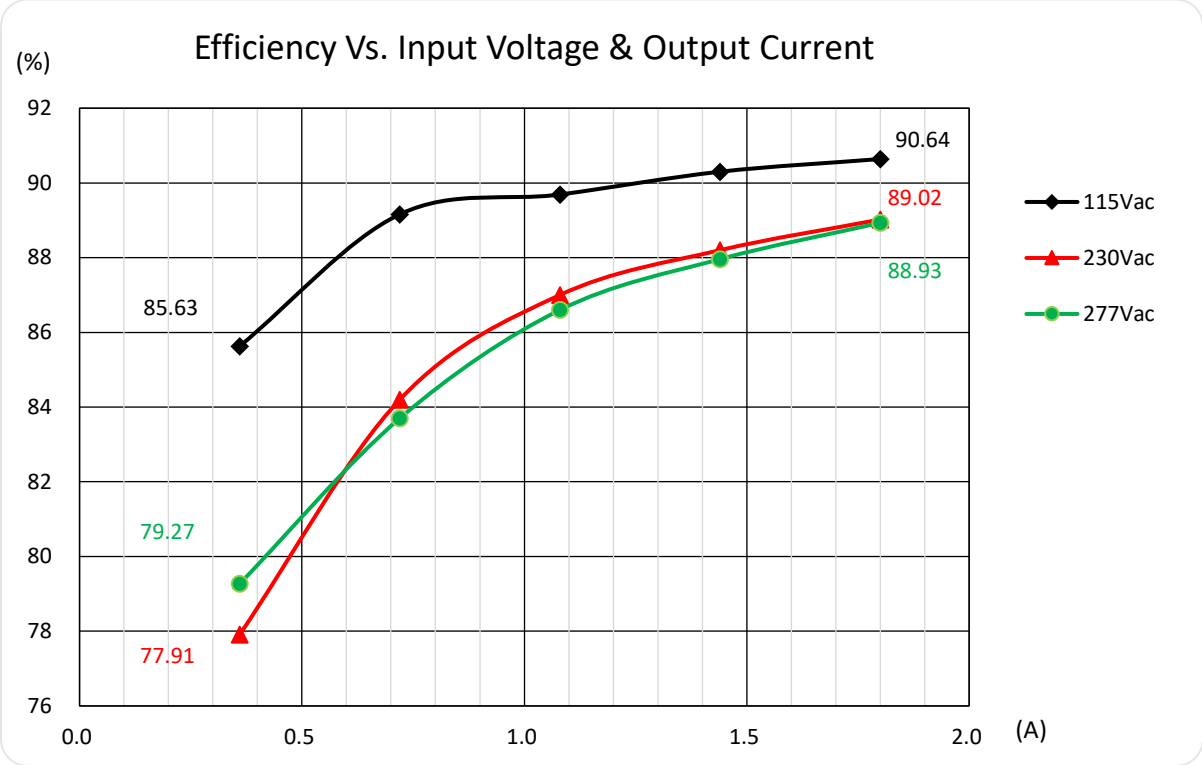


Temperature Graph

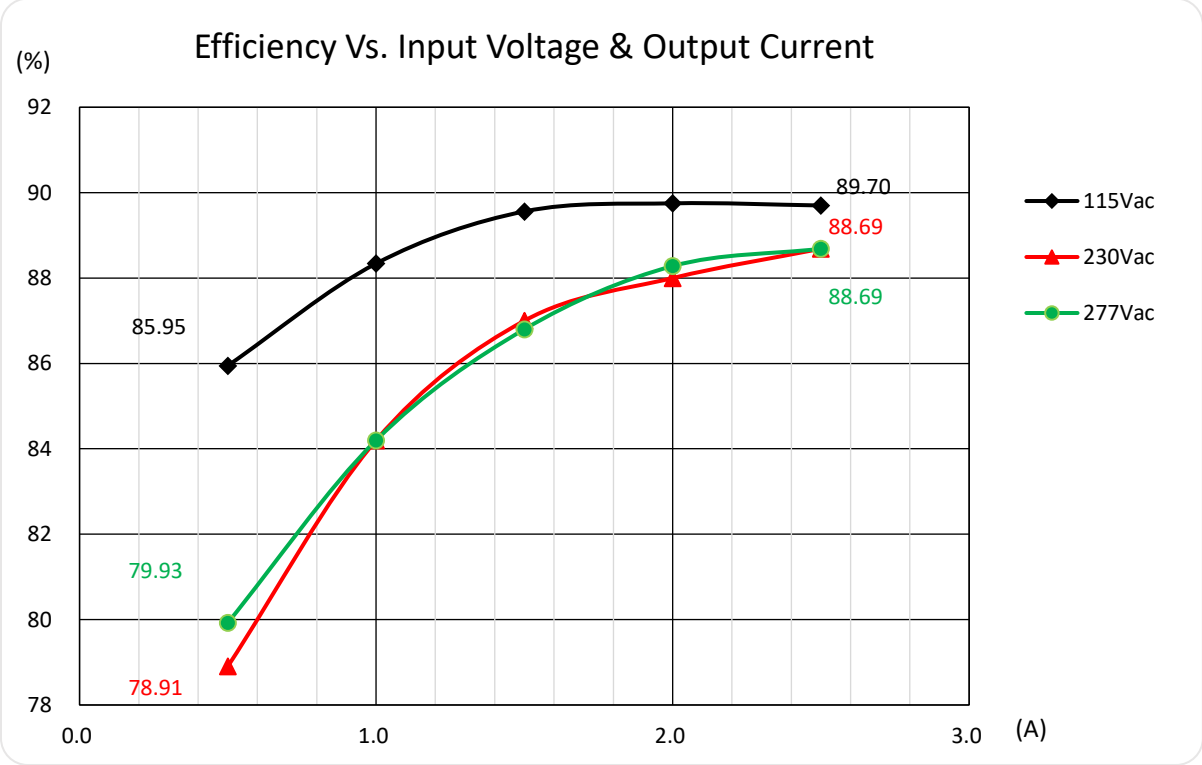


Efficiency vs. Input Voltage and Output Current (CC Load)

AMER90-50180AZ

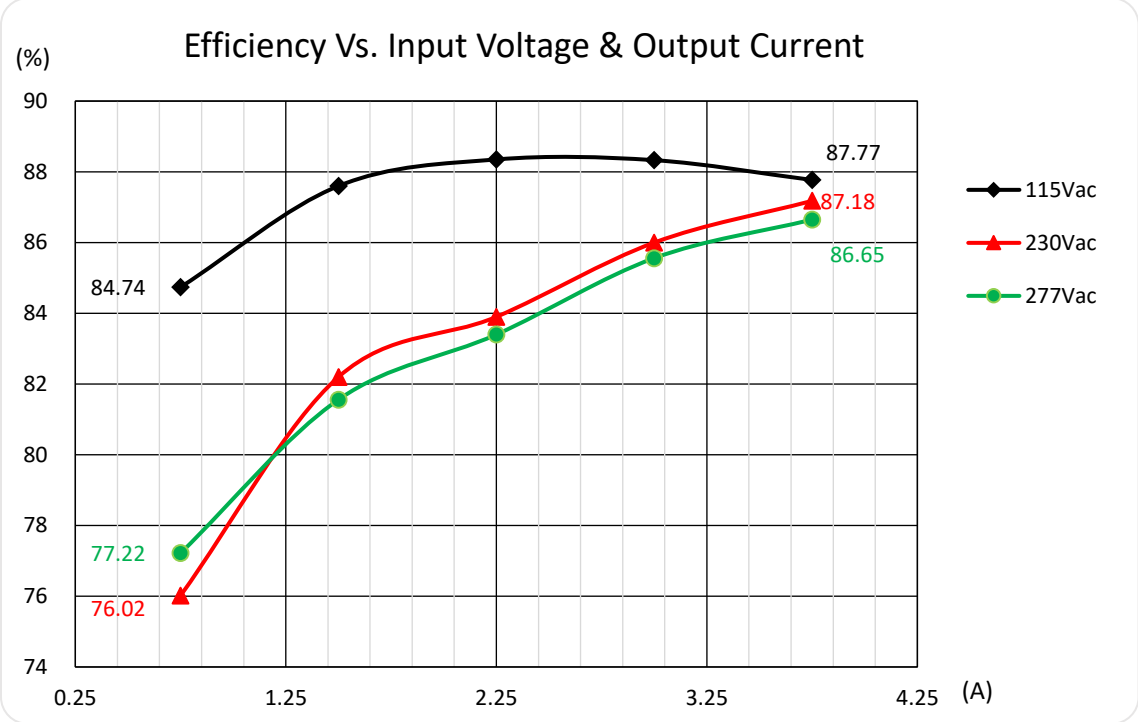


AMER90-36250AZ



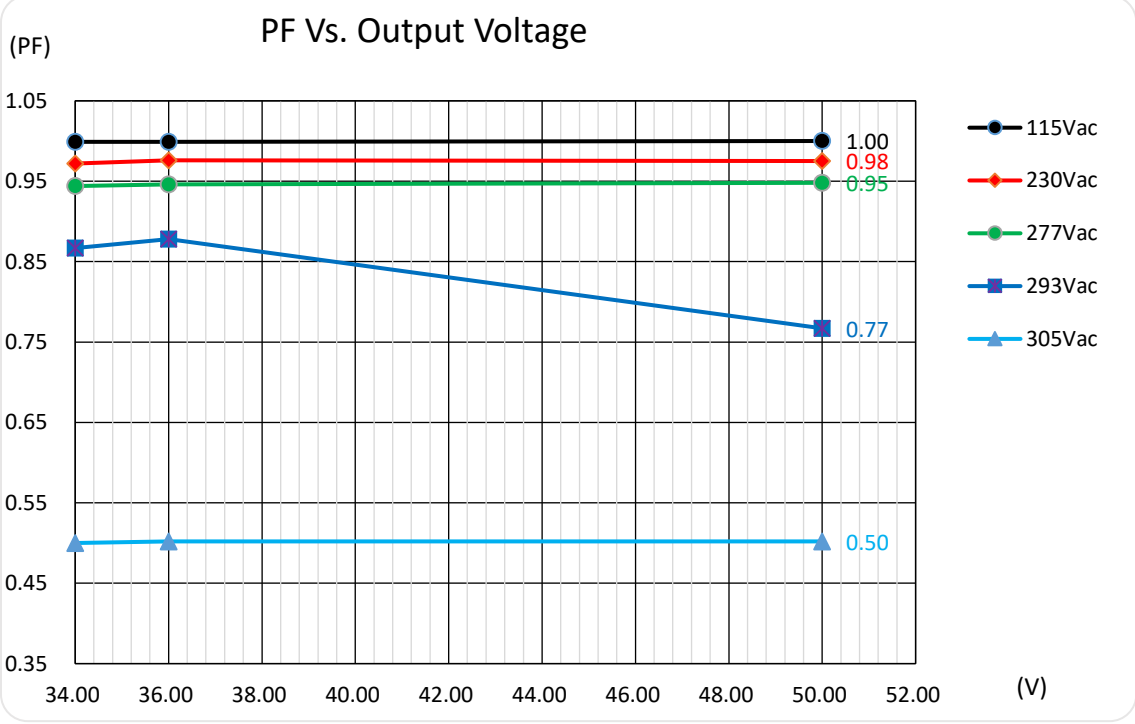
Efficiency vs. Input Voltage and Output Current (CC Load)
(continued)

AMER90-24375AZ



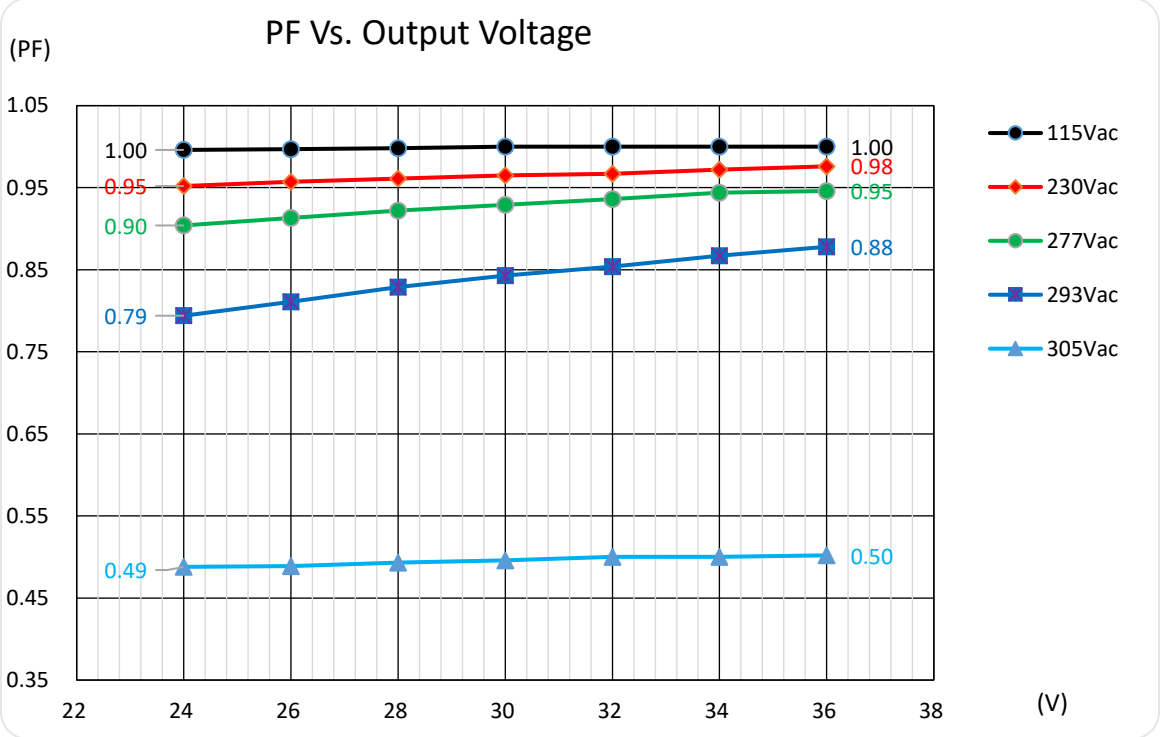
PFC Value vs. Output Load Current (CC Load)

AMER90-50180AZ

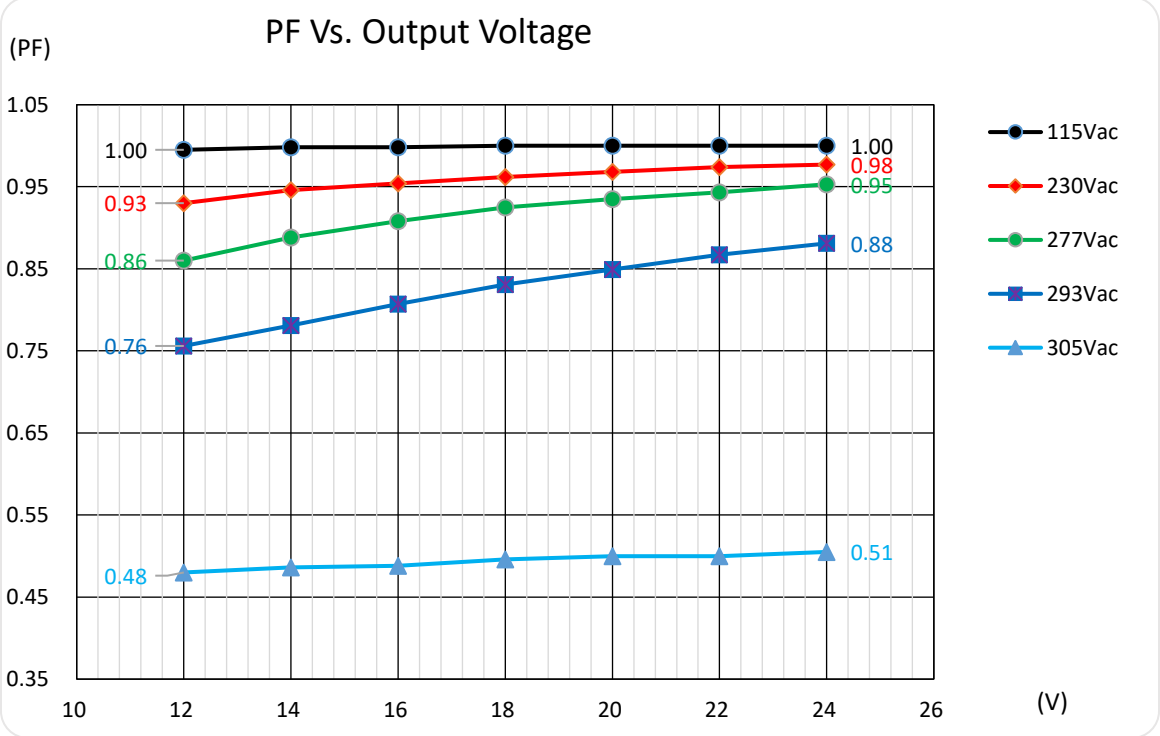


PFC Value vs. Output Load Current (CC Load)
(continued)

AMER90-36250AZ

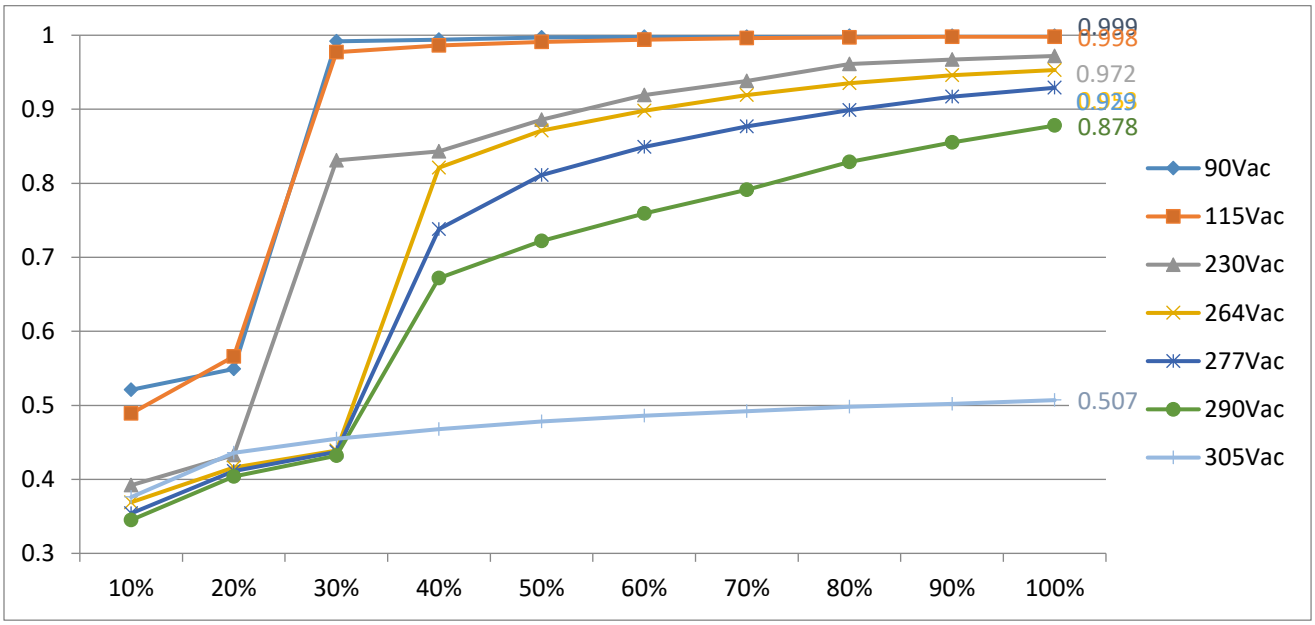


AMER90-24375AZ



PFC Value vs. Output Power

AMER90-36250AZ



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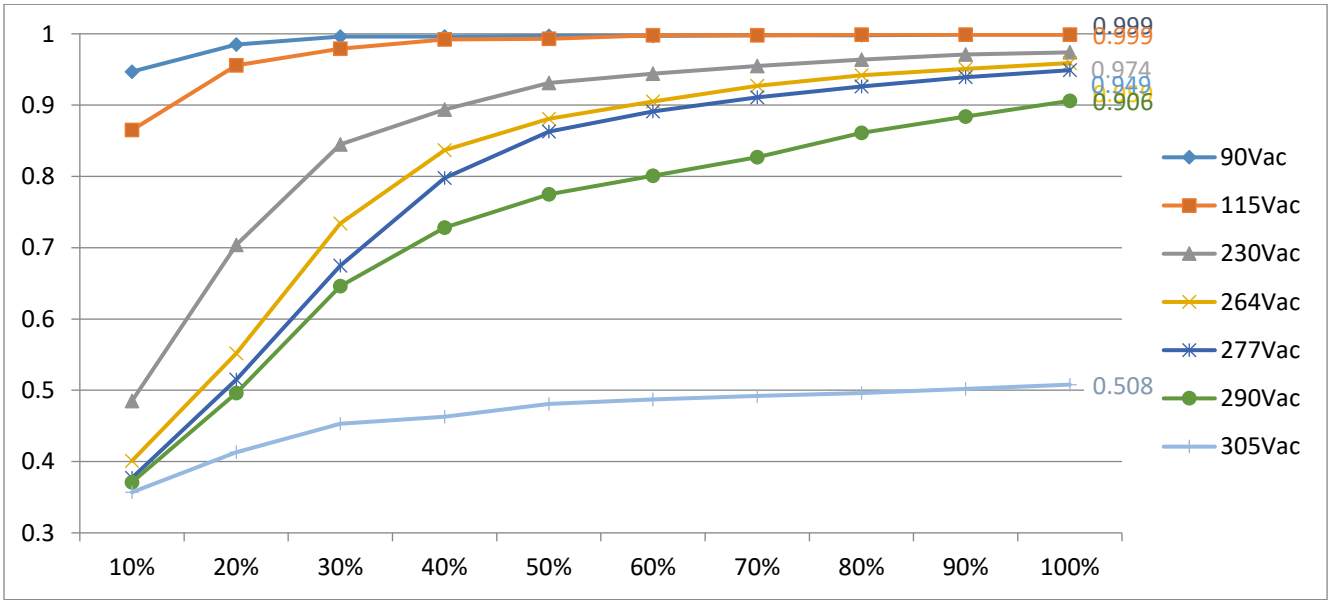
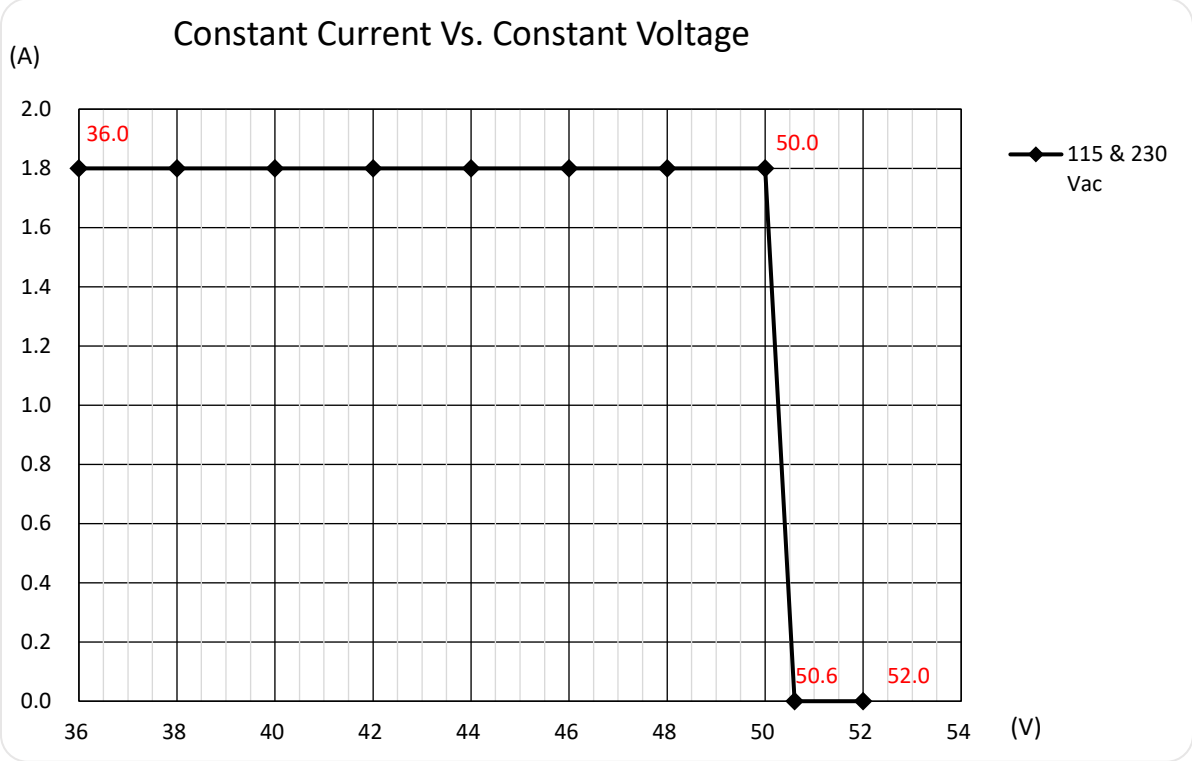
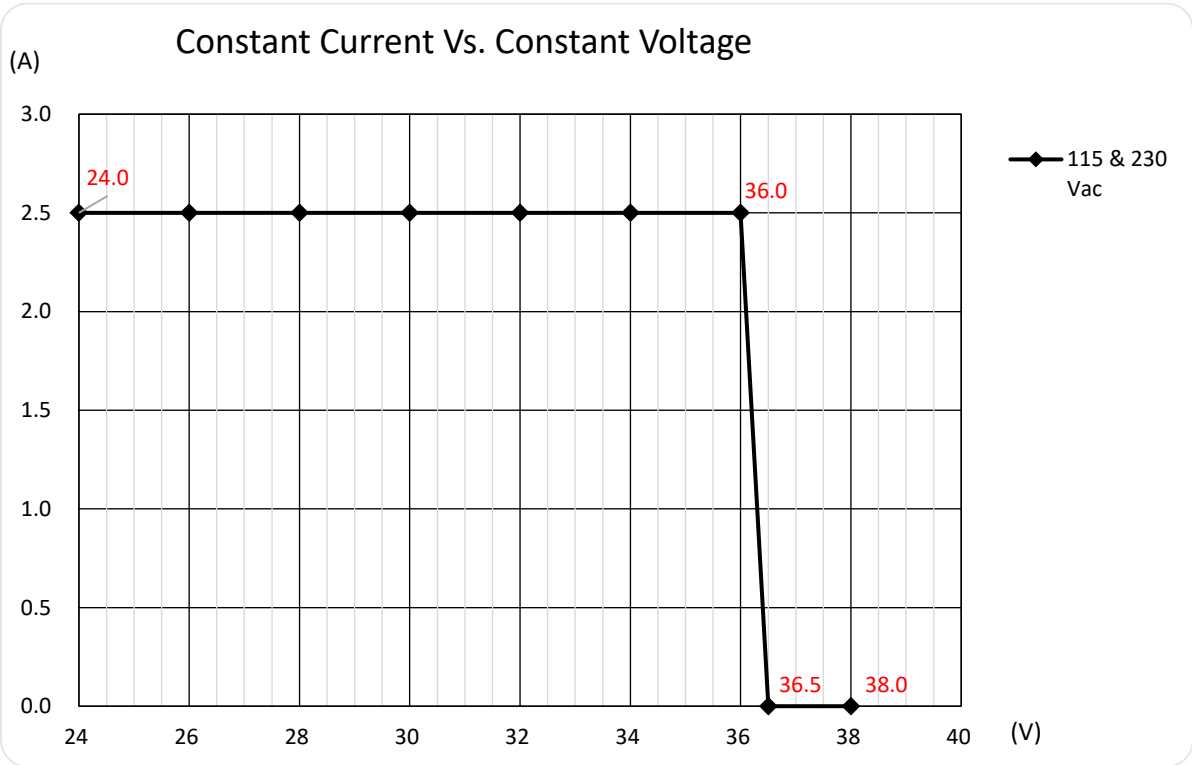


Constant Current Mode vs. Constant Voltage Mode

AMER90-50180AZ



AMER90-36250AZ



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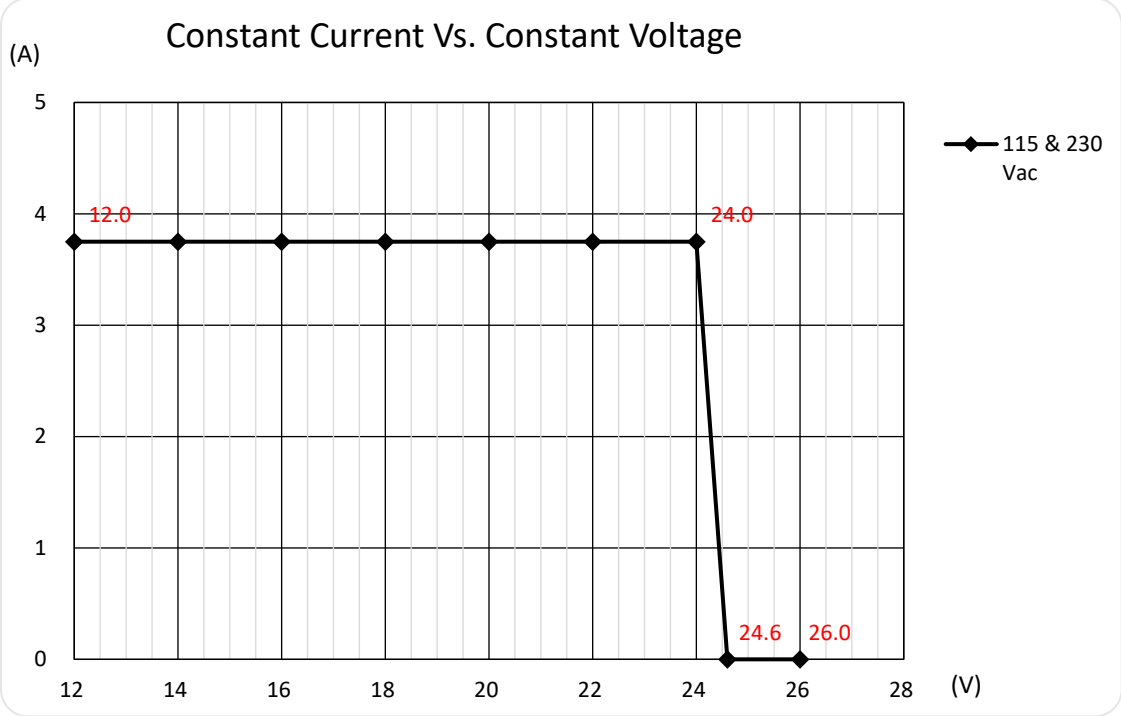
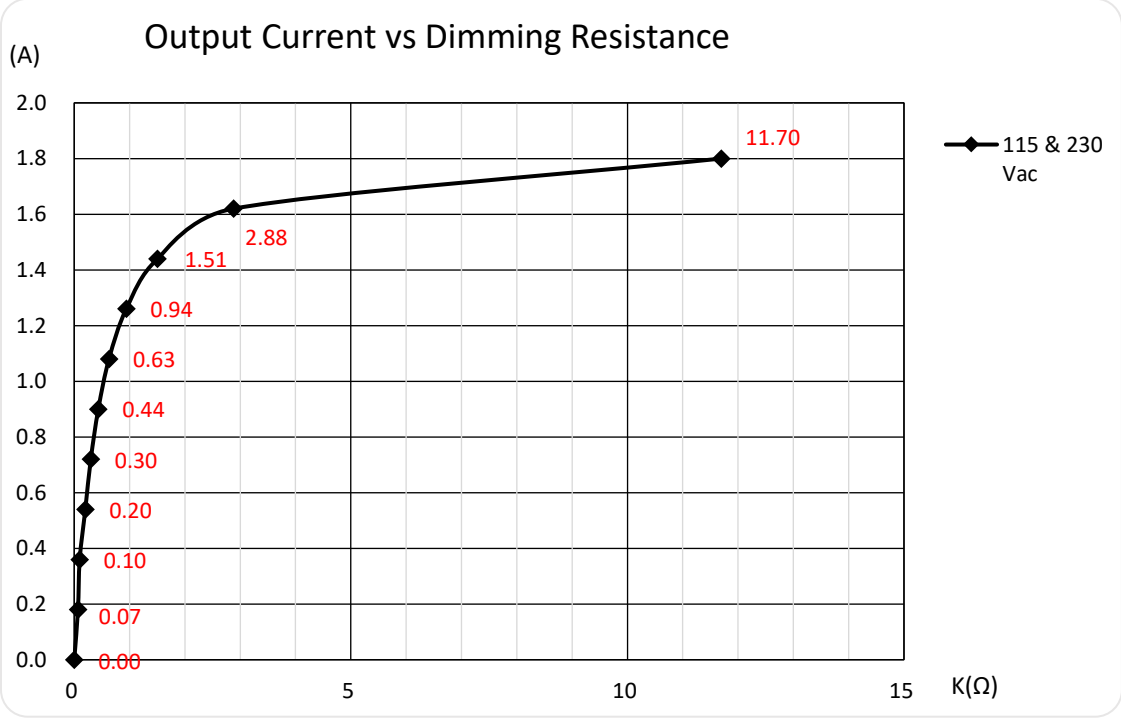
AMER90-24375AZ



Output Current vs. Radj

AMER90-50180AZ



Output Current vs. Radj
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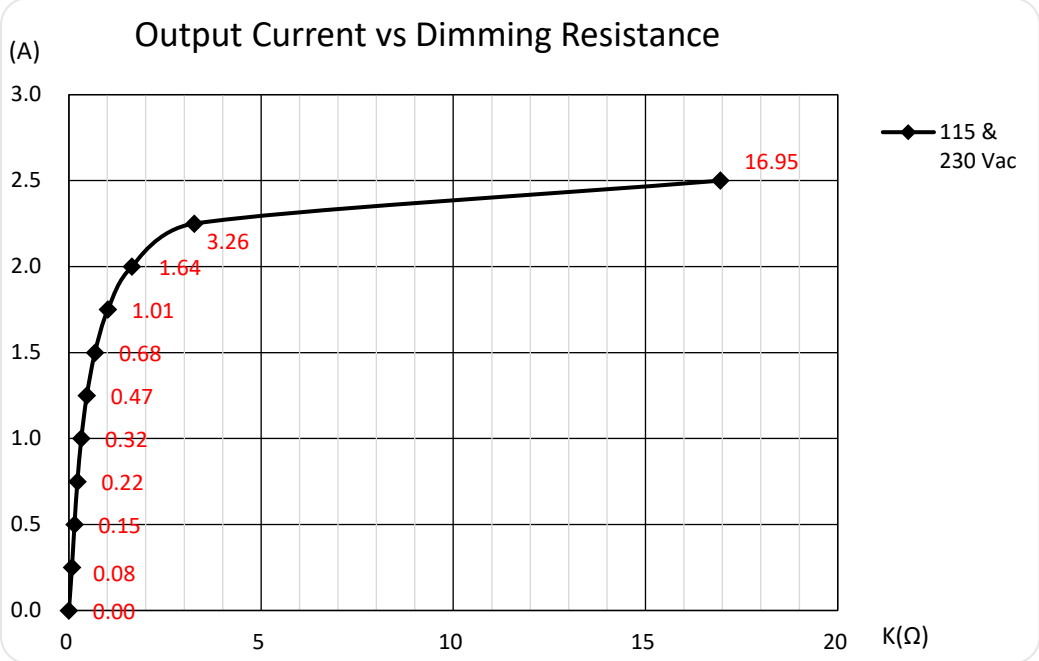
AMER90-36250AZ



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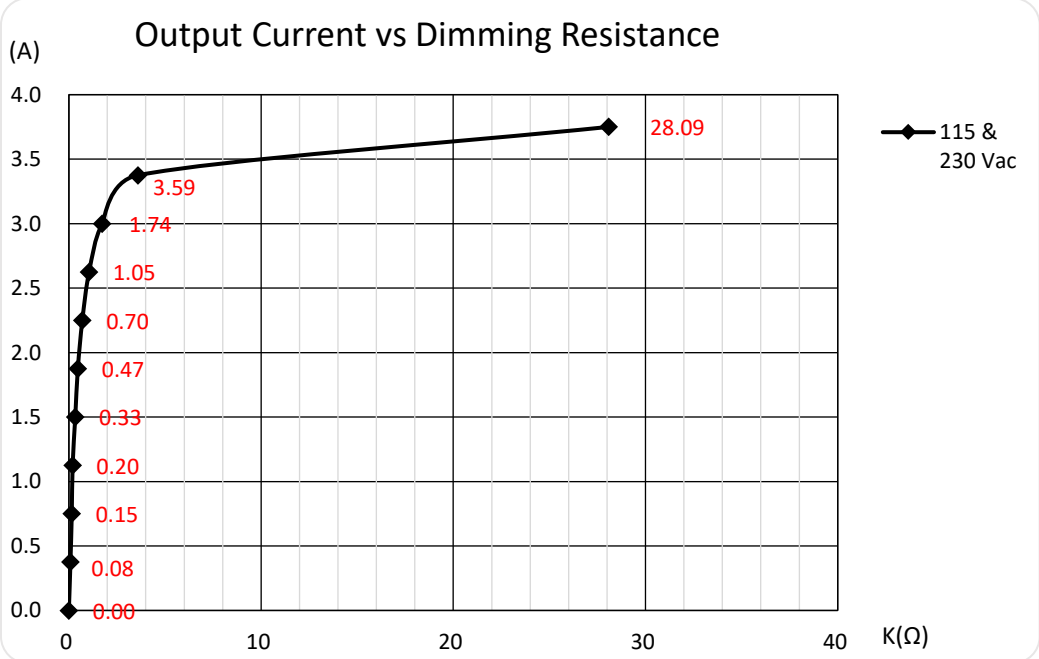

NOTE: 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to www.aimtec.com for the most current product specifications. **2.** Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. **3.** Mechanical drawings and specifications are for reference only. **4.** All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. **5.** Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. **6.** This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. **7.** Warranty is in accordance with Aimtec's standard Terms of Sale available at www.aimtec.com.