

Models
Single output



FEATURES:

- AC-DC Constant current LED Driver
- Input range 90-305VAC/47-440Hz
- High Efficiency up to 91%
- 115VAC Operating temperature -50 to 85°C
- 230VAC Operating temperature -55 to 85°C
- Dimmable via analog / 0-10V dimming ^②
- Over Temperature Protection
- Waterproof Case rated IP68
- Power Factor Correction
- Short Circuit Protection
- Over Current Protection



Model	Mode of Operation	Max Output Power (W) ^①	Output Voltage Range (V)	Output Current (A)	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Efficiency (%)
AMER90-50180CAZ	Constant Current	90	36-50	1.8	90-305/47-440	120-430	91
	Constant Voltage ^②		50	0-1.8			89
AMER90-36250CAZ	Constant Current	90	24-36	2.5	90-305/47-440	120-430	90
	Constant Voltage ^②		36	0-2.5			88
AMER90-24375CAZ	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		900		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	±3		%
Ripple & Noise ^③	20MHz Bandwidth	100		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/P-O/P voltage	3sec		3750	VAC
Tested I/P-FG voltage	3sec		1880	VAC
Tested O/P-FG voltage	3sec		500	VAC
Isolation Resistance	500VDC	>1000		MΩ
Isolation Capacitance			1000	pF

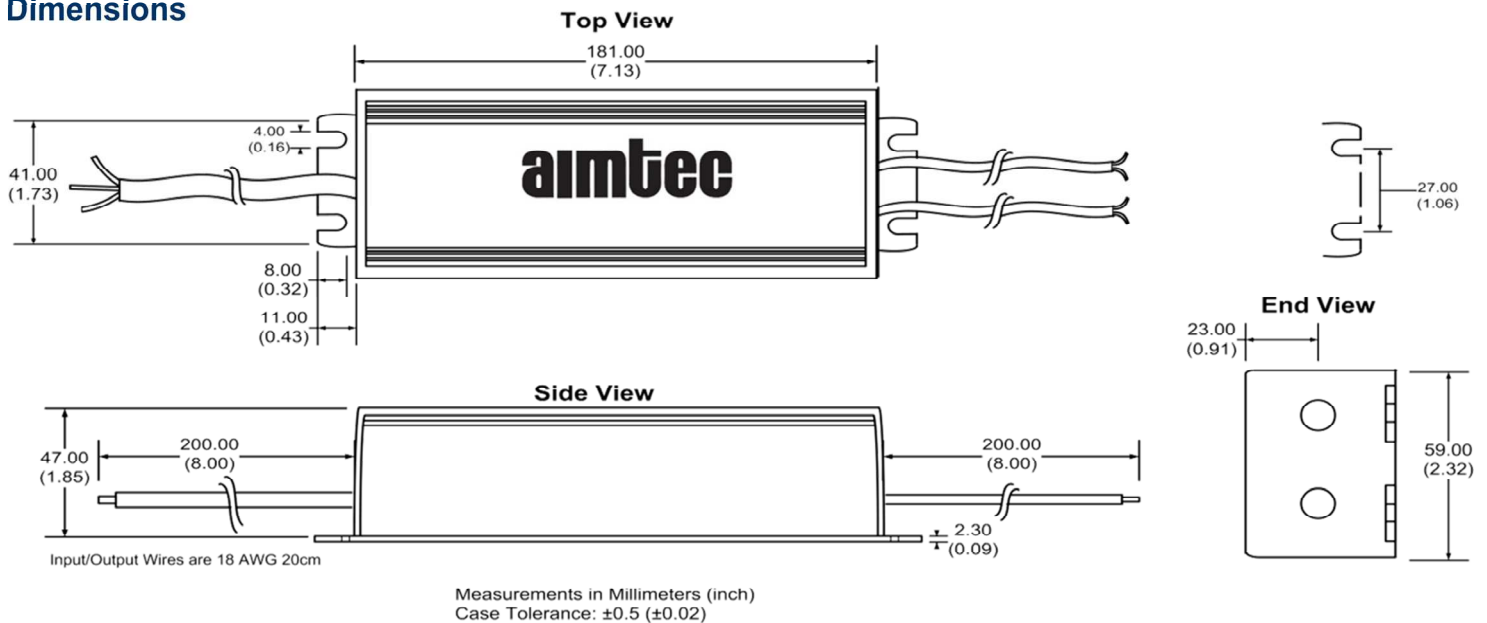
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		100		KHz
Over current protection		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(115VAC)	-50 to +85		°C
	With derating over 55°C(230VAC)	-55 to +85		°C
Maximum case temperature			100	°C
Storage temperature		-55 to +95		°C
Temperature coefficient		±0.02		% / °C
Cooling		Free air convection		
Humidity			95	% RH
Case material		Aluminum		
Potting		Epoxy (IP68 rated)		
Wires		UL1015 18AWG Input & 14AWG Output *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)		

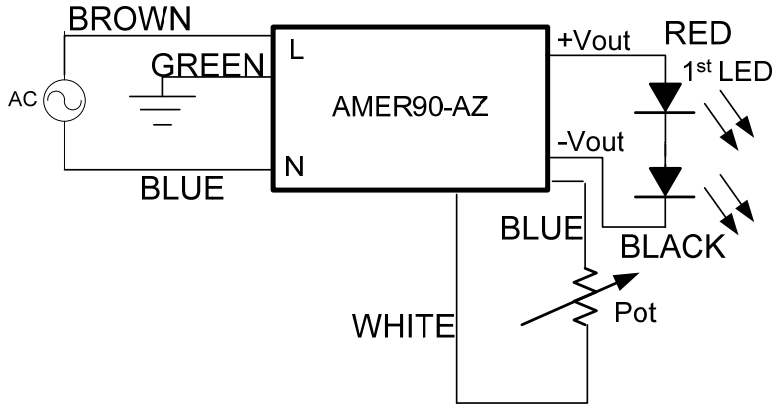
Safety Specifications

Parameters	
Agency approvals	CE
Standards	EN55022, class B, EN60529(IP68), EN61347-1, EN61347-2-13 Note: also designed to meet cULus, UL8750, UL60950-1

Dimensions

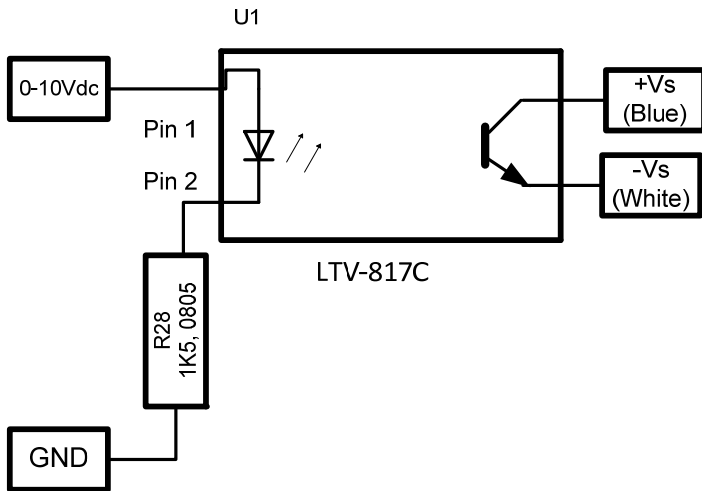


Analog (resistive) Dimming Application Circuit

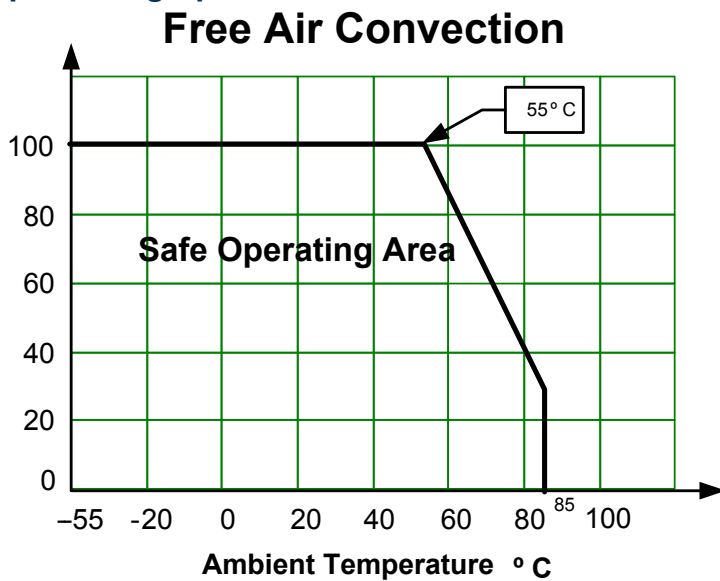


Model Number	Maximum Pot Value (kΩ)
AMER90-50180CAZ	11.70
AMER90-36250CAZ	16.95
AMER90-24375CAZ	28.09

0-10V Dimming Application Circuit

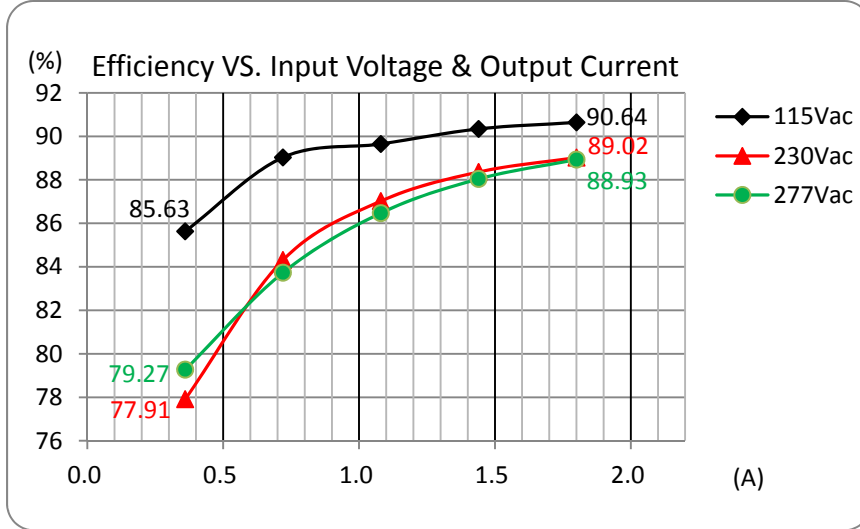


Temperature graph

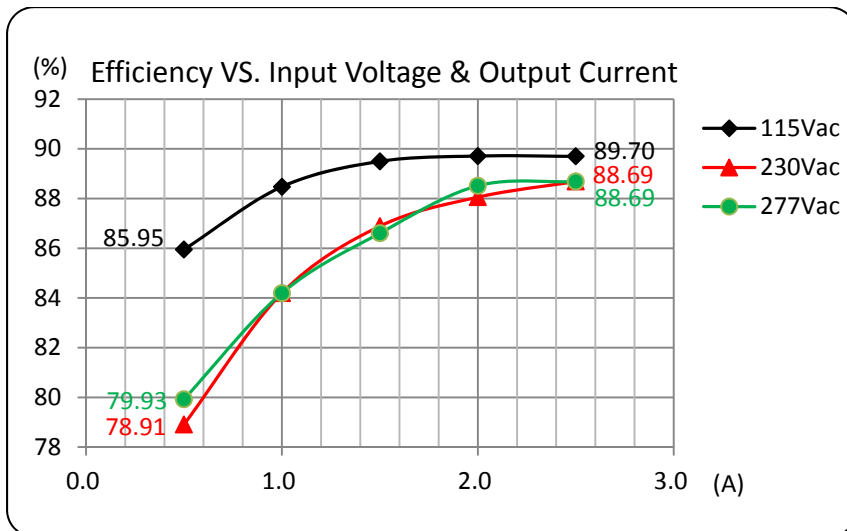


Efficiency vs. Input Voltage and Output Current (CC mode)

AMER90-50180CAZ

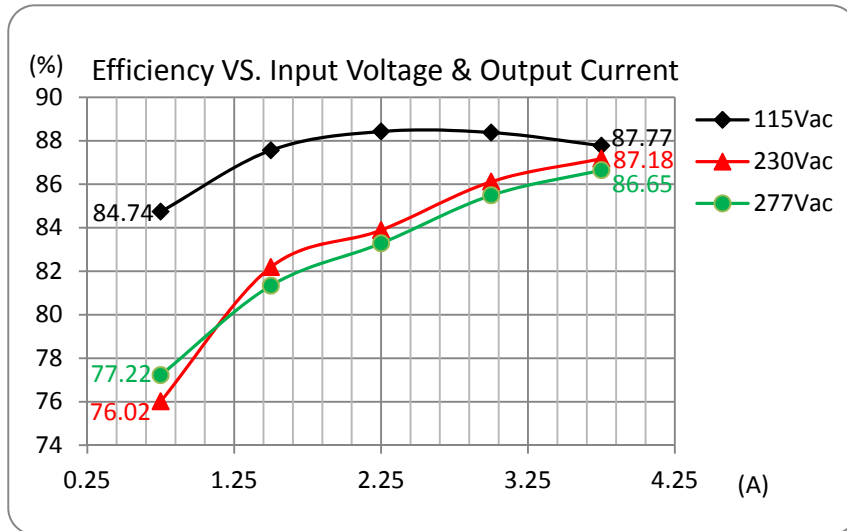


AMER90-36250CAZ



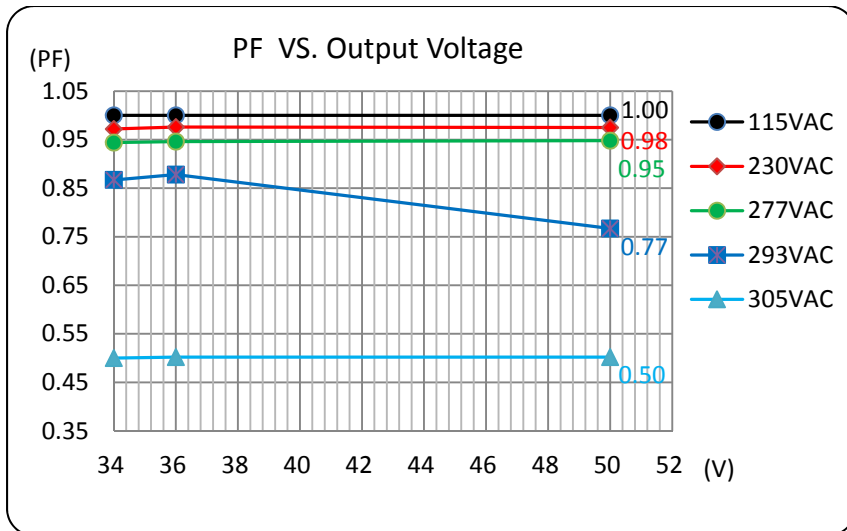
Efficiency vs. Input Voltage and Output Current (CC mode)
(continued)

AMER90-24375CAZ



PFC Value vs. Output Load Current (CC mode)

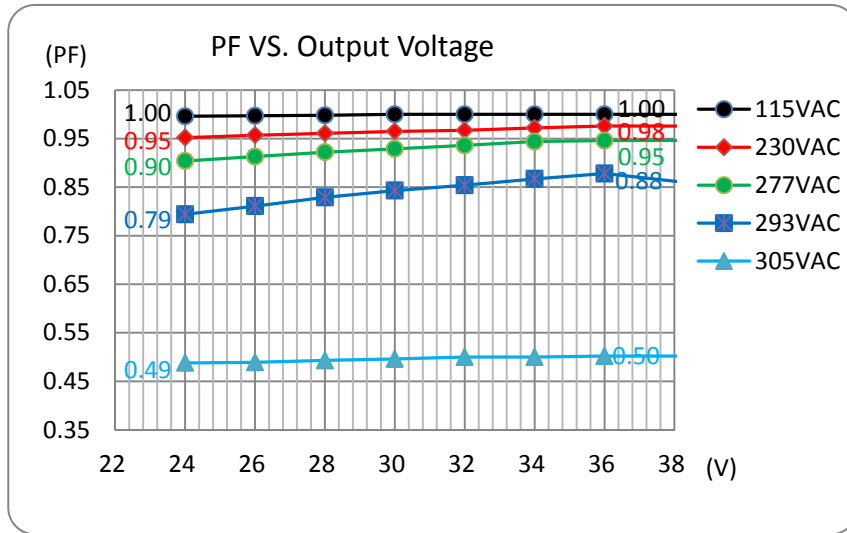
AMEPR90-50180CAZ



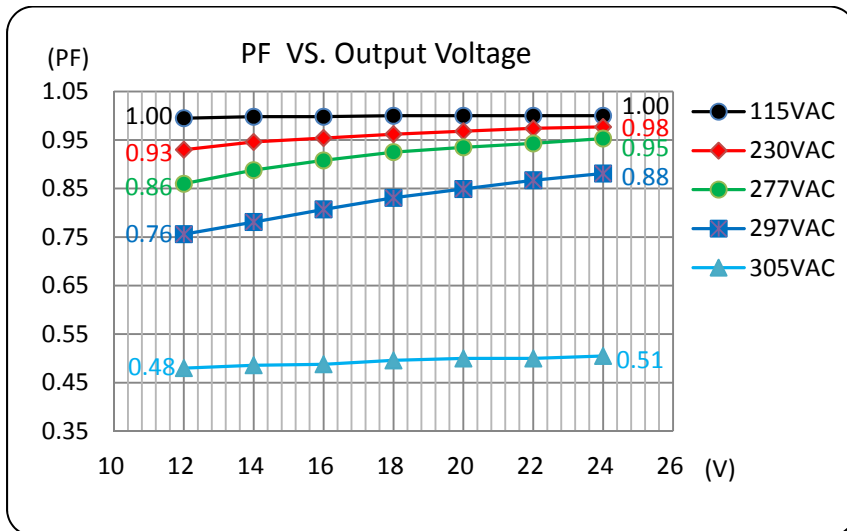
PFC Value vs. Output Load Current (CC mode)

(continued)

AMER90-36250CAZ

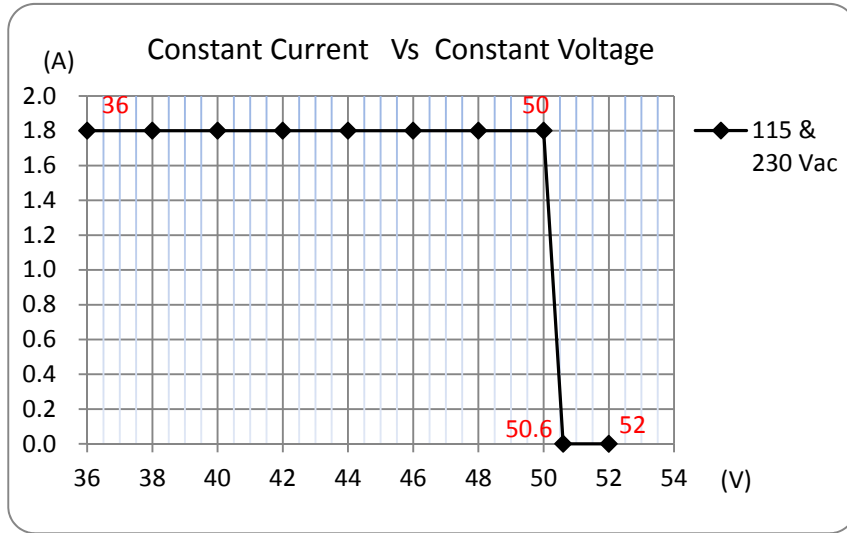


AMER90-24375CAZ

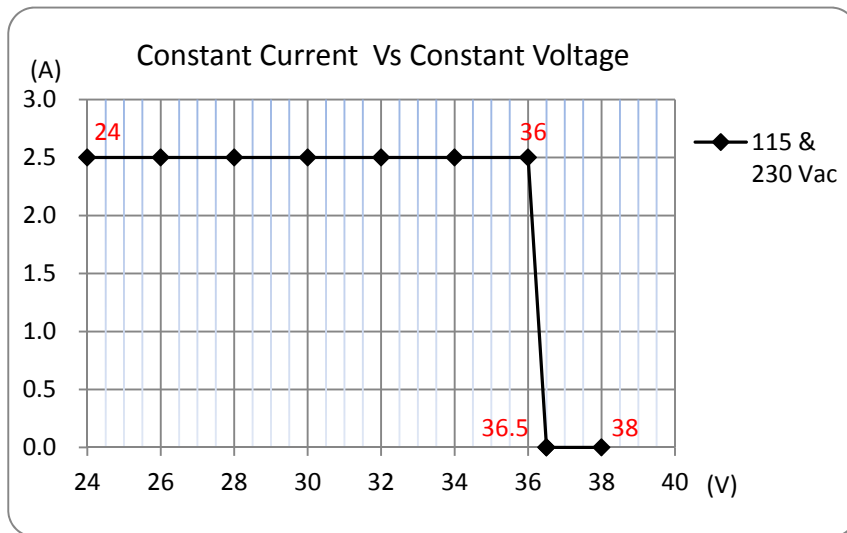


Constant Current Mode vs. Constant Voltage Mode

AMER90-50180CAZ



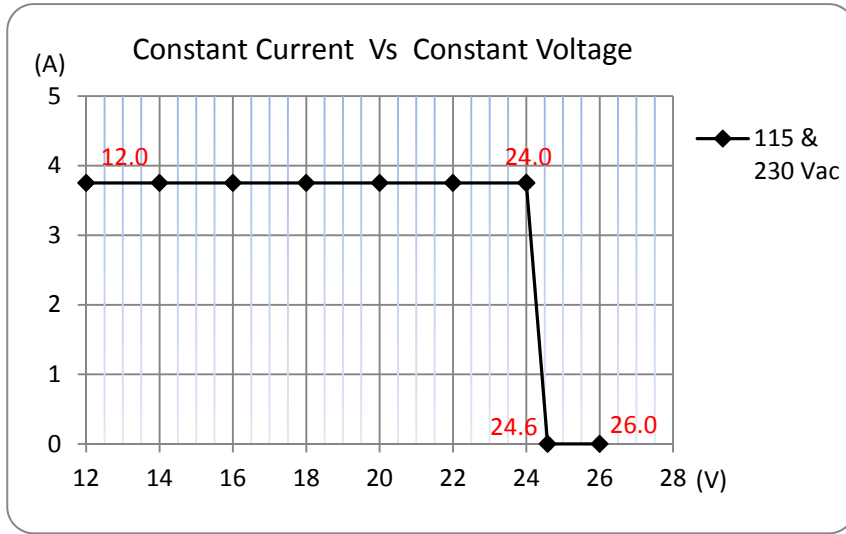
AMER90-36250CAZ



Constant Current Mode vs. Constant Voltage Mode

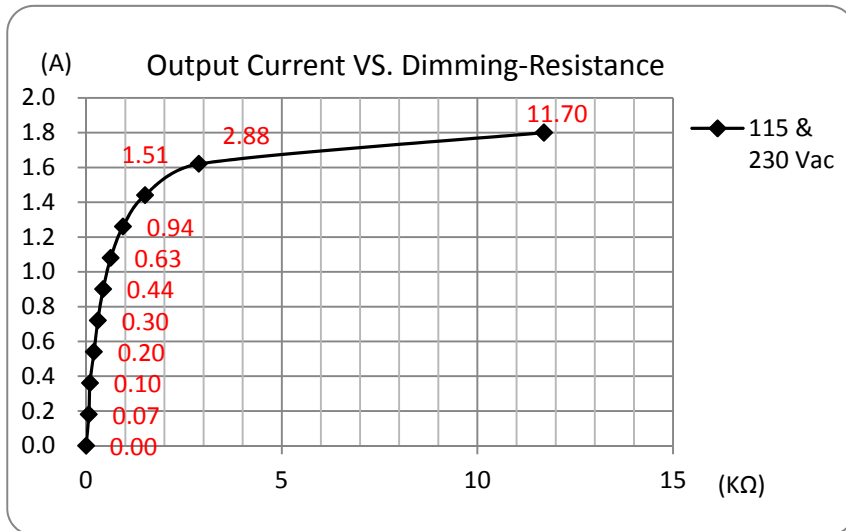
(continued)

AMER90-24375CAZ



Output Current vs. Radj

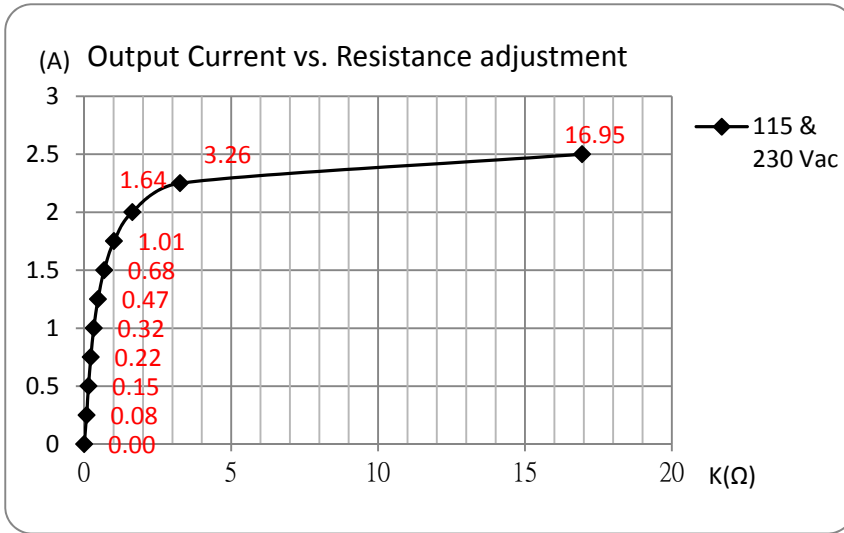
AMER90-50180CAZ



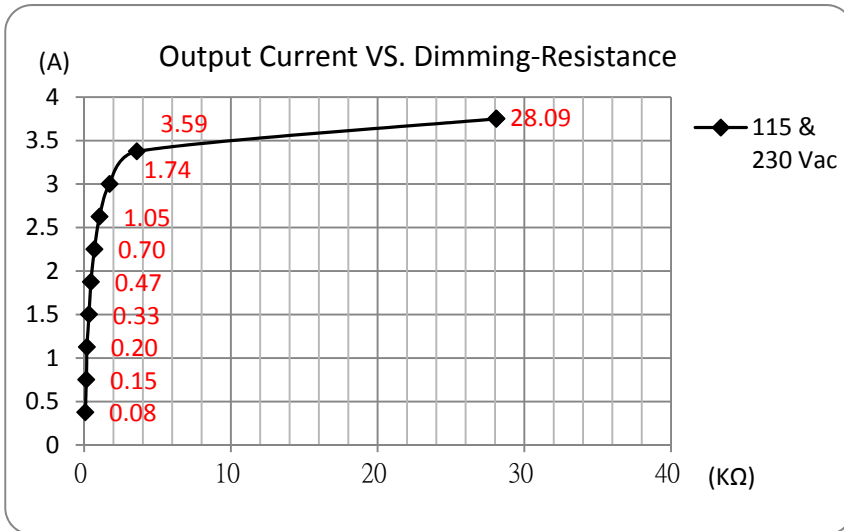
Output Current vs. Radj

(continued)

AMER90-36250CAZ



AMER90-24375CAZ



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.