

Series AMER90-CAZ

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

FEATURES:

- Constant current LED Driver or Converter
- 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



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 (%)
AMER90-50180CAZ	90	36-50	0-1.8	90-305/47-440	120-430	Constant Current	91
						Constant Voltage ^②	89
AMER90-36250CAZ	90	24-36	0-2.5	90-305/47-440	120-430	Constant Current	90
						Constant Voltage ^②	88
AMER90-24375CAZ	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.

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 ^④	20MHz Bandwidth	100		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/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

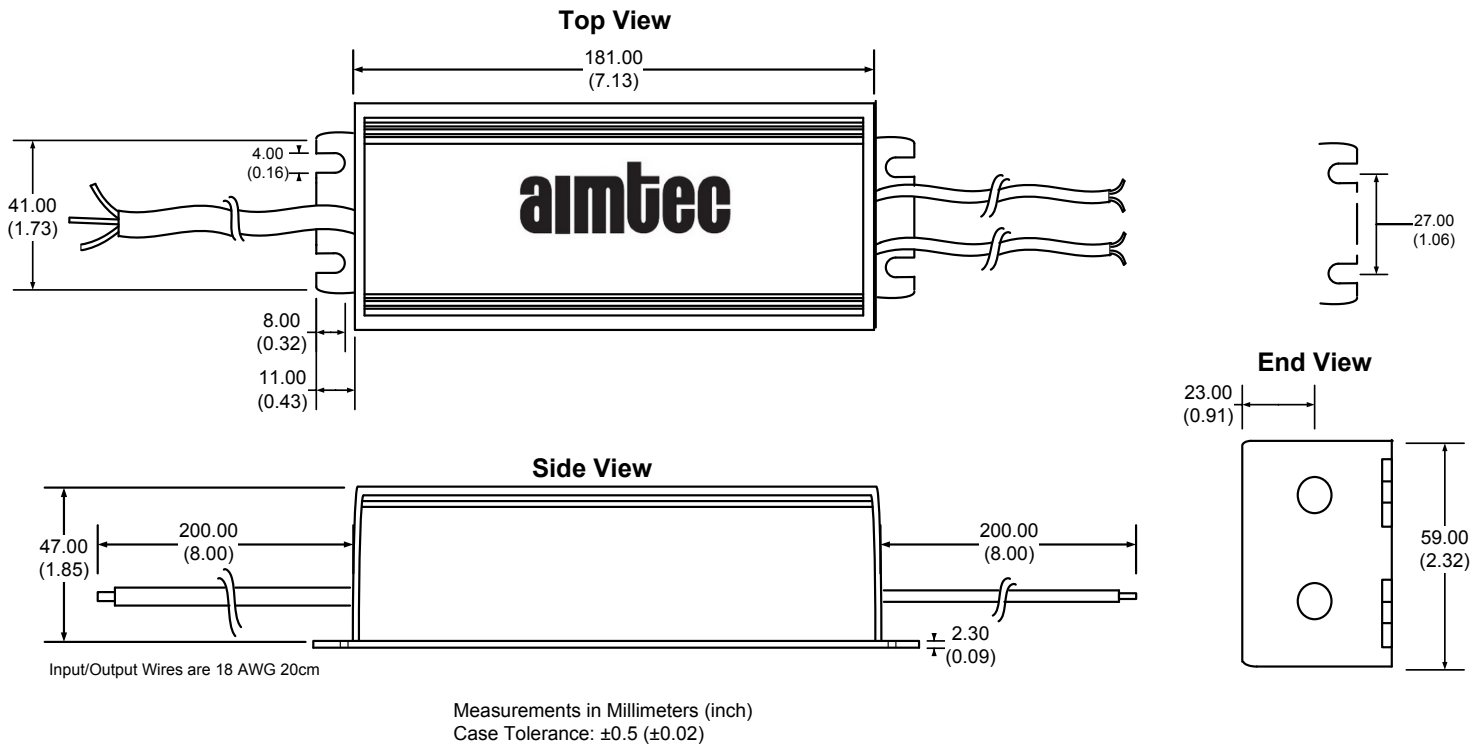
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		100		KHz
Over current protection		110% of I _{out}		
Over voltage protection		110% of V _{out}		
Short circuit protection		Continuous		
Short circuit restart		Auto recovery		
Over temperature protection		>105°C		
Operating temperature	(115VAC)	-50 to +85		°C
(See Derating Table)	(230VAC)	-55 to +85		°C
Cold Start-up Time	-55°C		35	Sec
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		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)		

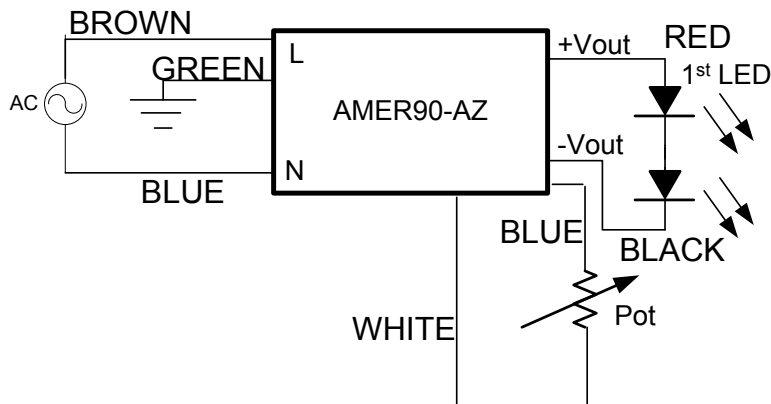
Safety Specifications

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

Dimensions

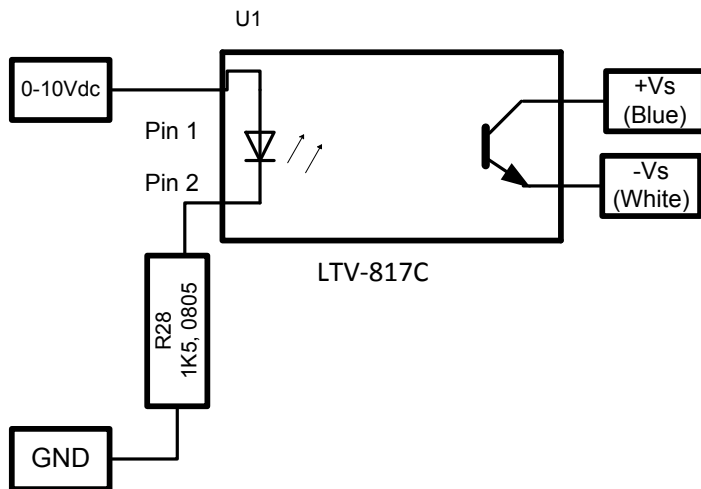


Analog (resistive) Dimming Application Circuit

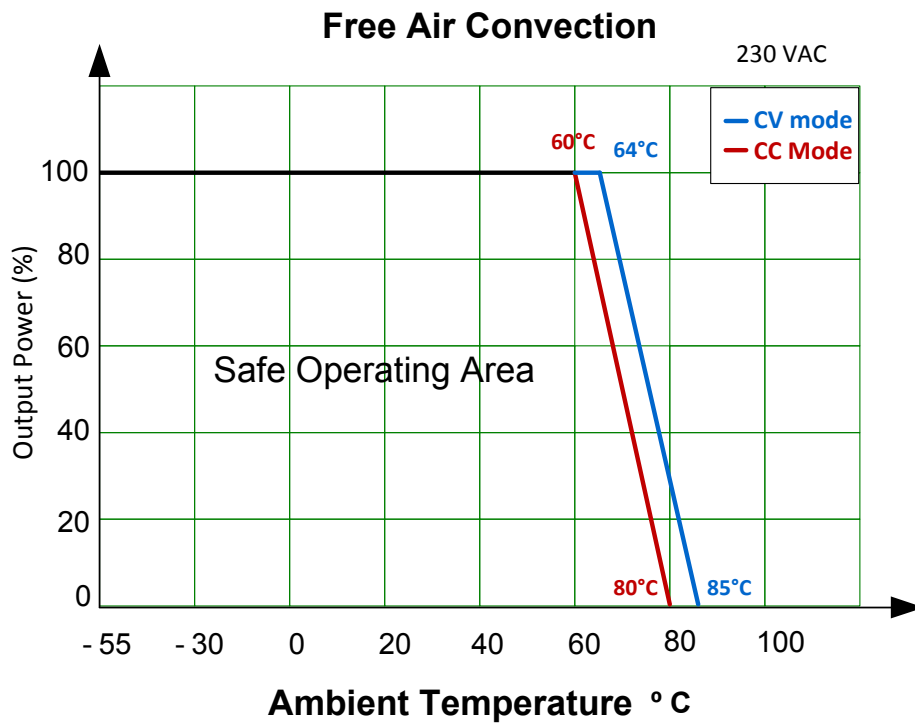


Model Number	Maximum Pot Value (k Ω)
AMER90-50180CAZ	11.70
AMER90-36250CAZ	16.95
AMER90-24375CAZ	28.09

0-10V Dimming Application Circuit

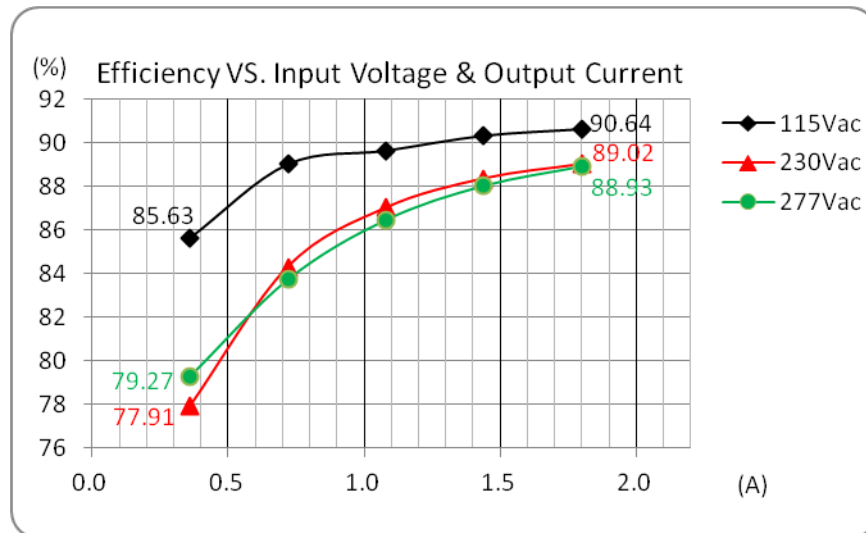


Temperature graph

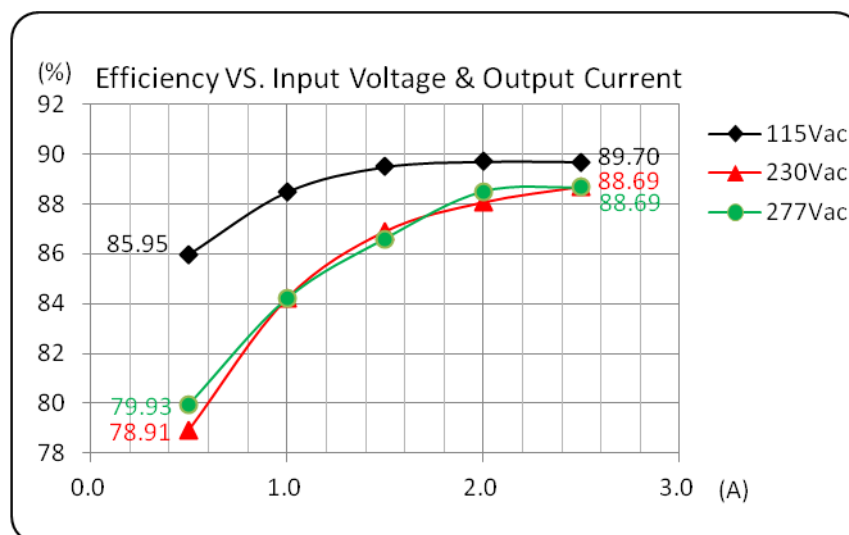


Efficiency vs. Input Voltage and Output Current (CC mode)

AMER90-50180CAZ

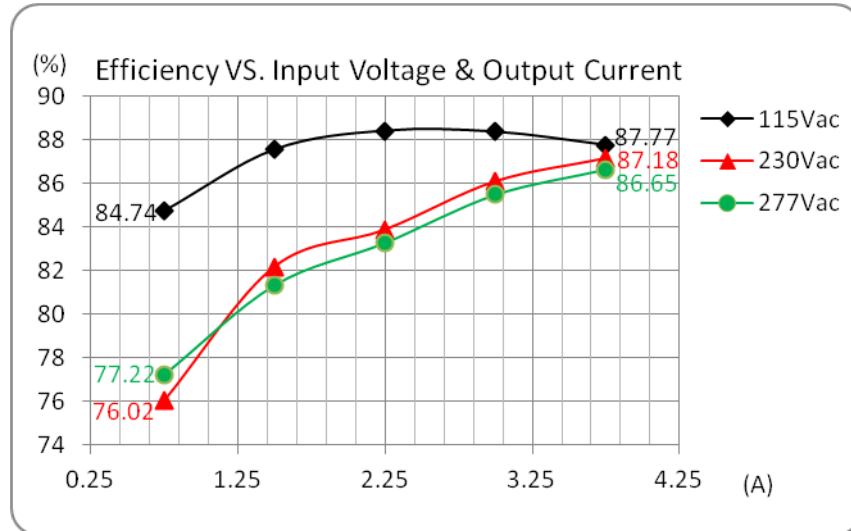


AMER90-36250CAZ



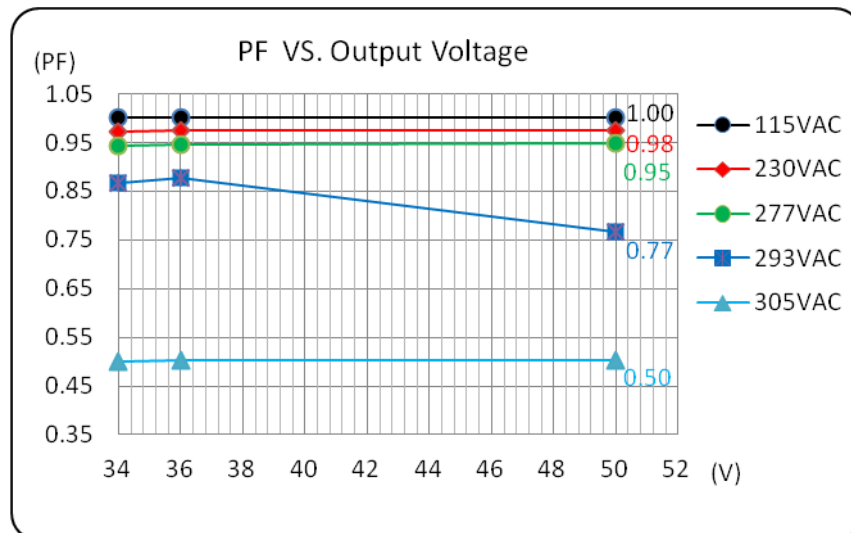
Efficiency vs. Input Voltage and Output Current (CC mode)

AMER90-24375CAZ



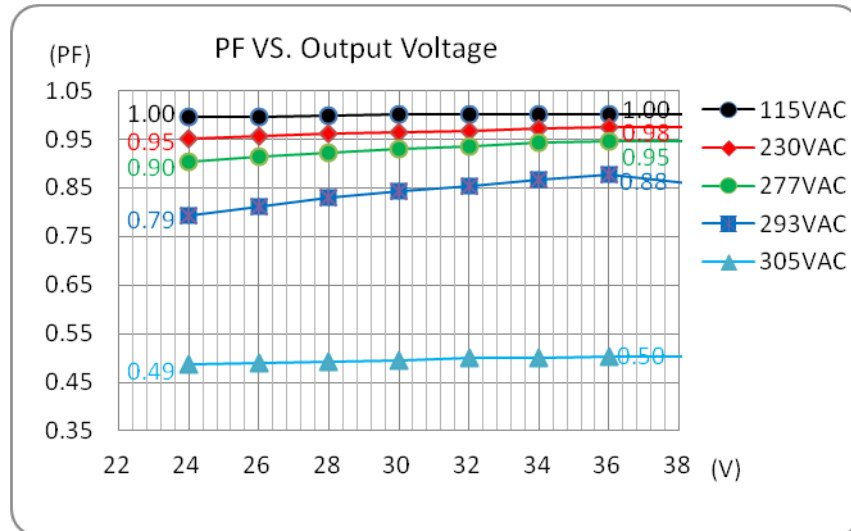
PFC Value vs. Output Load Current (CC mode)

AMEPR90-50180CAZ

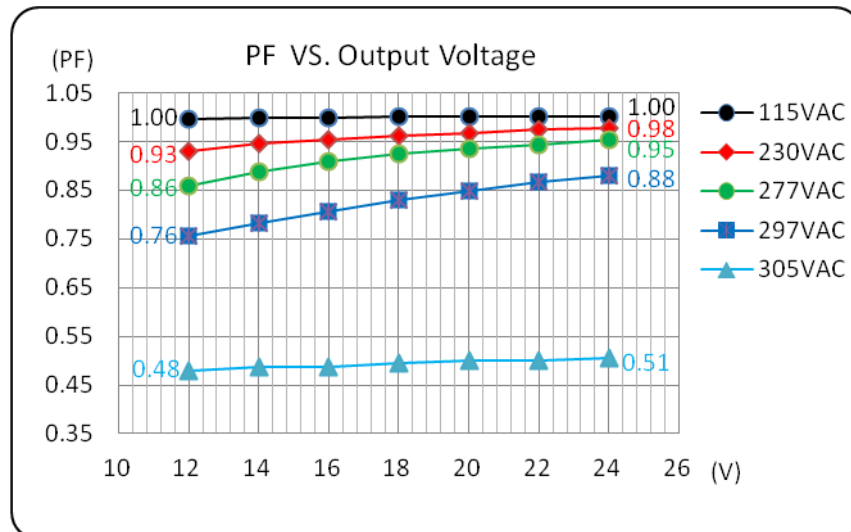


PFC Value vs. Output Load Current (CC mode)

AMER90-36250CAZ

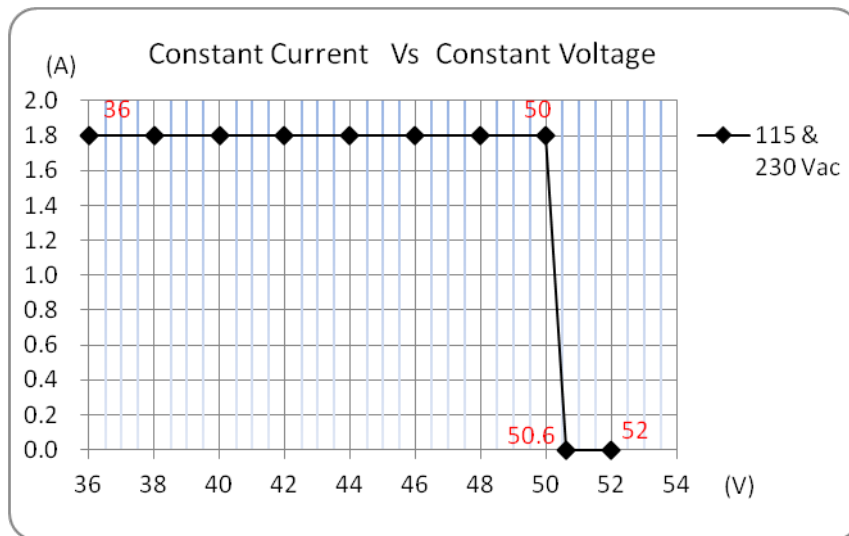


AMER90-24375CAZ

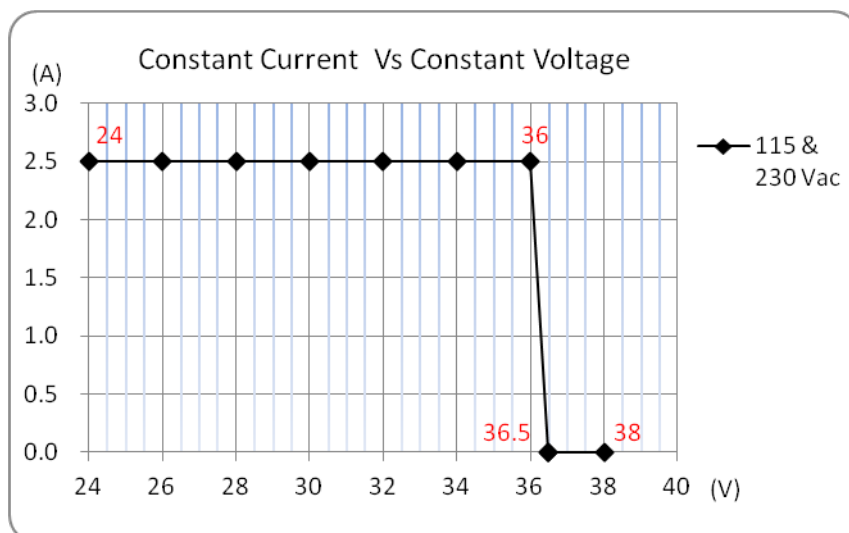


Constant Current Mode vs. Constant Voltage Mode

AMER90-50180CAZ

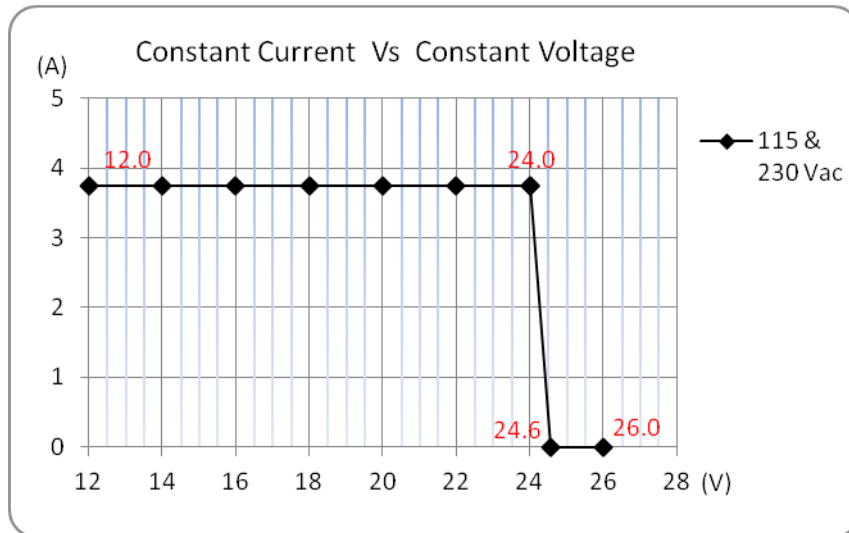


AMER90-36250CAZ



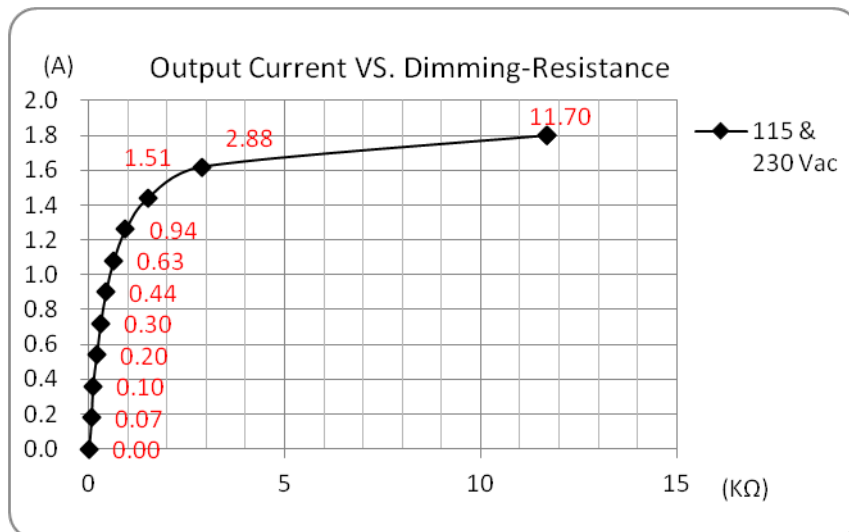
Constant Current Mode vs. Constant Voltage Mode

AMER90-24375CAZ



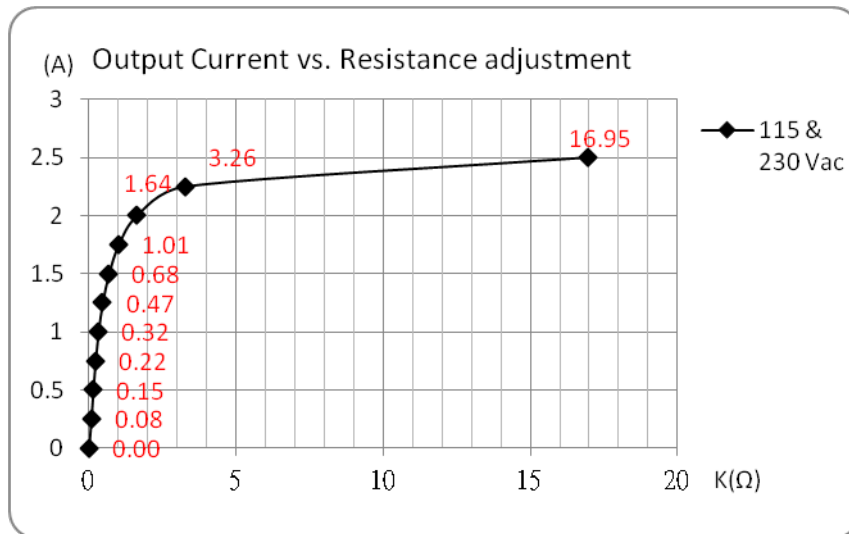
Output Current vs. Radj

AMER90-50180CAZ

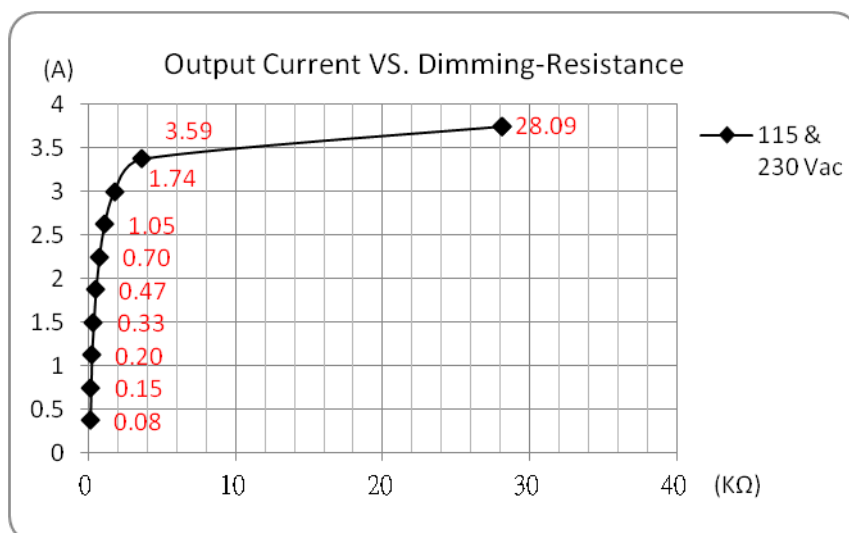


Output Current vs. R_{adj}

AMER90-36250CAZ



AMER90-24375CAZ



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