Series AMEPR30-AZ

up to 2.5A | 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 86%
- 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	Output Voltage Range (V) ③	Output Current (A) ③	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Mode of Operation	Max Output Power (W) ①	Efficiency (%)
AMEPR30-5070AZ	36-50	0-0.77	90-305/47-440	120-430	Constant Current	35	86
					Constant Voltage ②	38.5	85
AMEPR30-4864AZ	36-48	0-0.66	90-305/47-440	120-430	Constant Current	30.7	86
					Constant Voltage ②	31.7	84
AMEPR30-36100AZ	24-36	0-1.04	90-305/47-440	120-430	Constant Current	36	85
					Constant Voltage ②	37.4	84
AMEPR30-24140AZ	12-24	0-1.45	90-305/47-440	120-430	Constant Current	33.6	84
					Constant Voltage ②	34.8	84
AMEPR30-12250AZ	5-12	0-2.55	90-305/47-440	120-430	Constant Current	30	83
					Constant Voltage ②	30.6	83

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.
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	25		A
	230VAC	40		
Leakage current	115VAC	0.3		mA
	230VAC	0.5		
AC current	115VAC	0.43		A
	230VAC	0.25		
Power Factor	115VAC	0.96		
	230VAC	0.90		
External fuse			250V/1A	
Start up time		450		ms

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Current accuracy		±2		%
Line regulation	LL-HL	±1		%
Load regulation	0-100% load	±2		%
Ripple & Noise ④	20MHz Bandwidth	75		mV p-p
Hold-up time		50		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

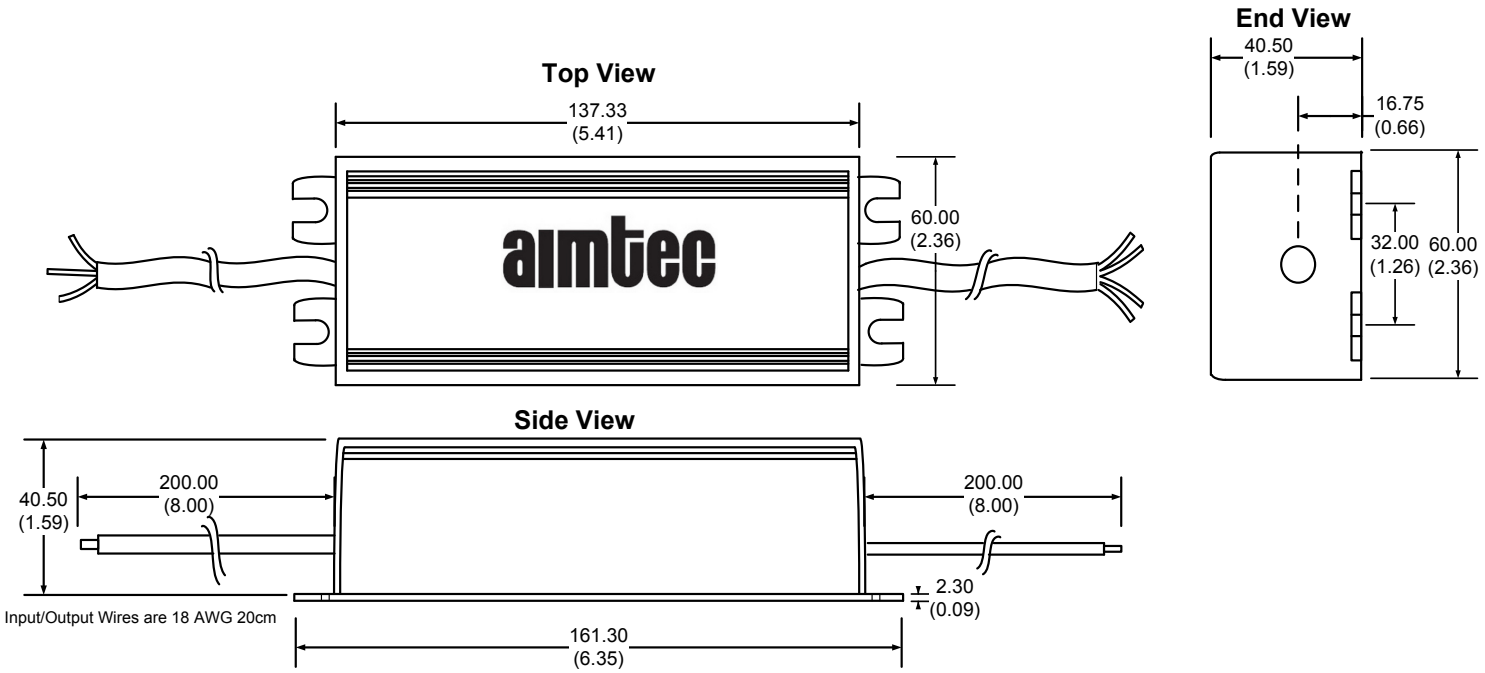
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		130		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	Plastic			
Potting	Epoxy (IP67 rated)			
Wires	UL1015 18AWG * 20CM			
Weight	350			g
Dimensions	5.30 x 2.27 x 1.59 inches 134.80 x 57.68 x 40.50 mm			
MTBF	>400,000 hrs (MIL-HDBK-217F at +25°C)			

Safety Specifications

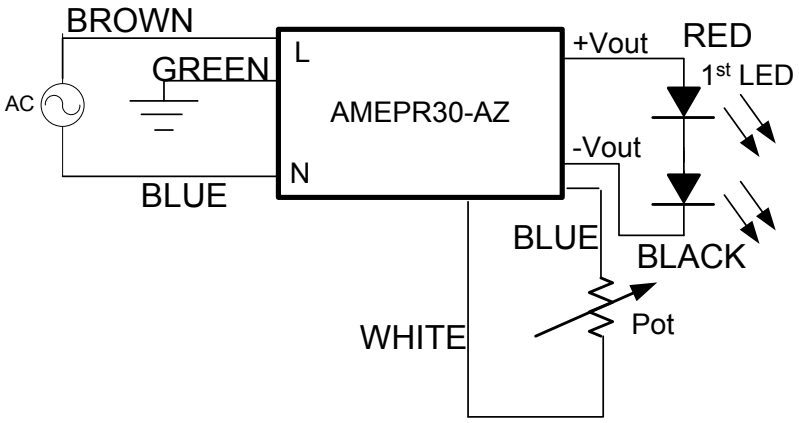
Parameters		
Agency approvals	cULus, CE	
Standards	UL8750, UL60950-1, EN55022, class B, EN60529(IP68), EN61347-1, EN61347-2-13	
	Information Technology Equipment	EN55022 Class B
	Harmonic Current Emissions	IEC/EN 61000-3-2, Class C
	Voltage fluctuations and flicker	IEC/EN 61000-3-3, (EN60555-3)
	Electrostatic 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



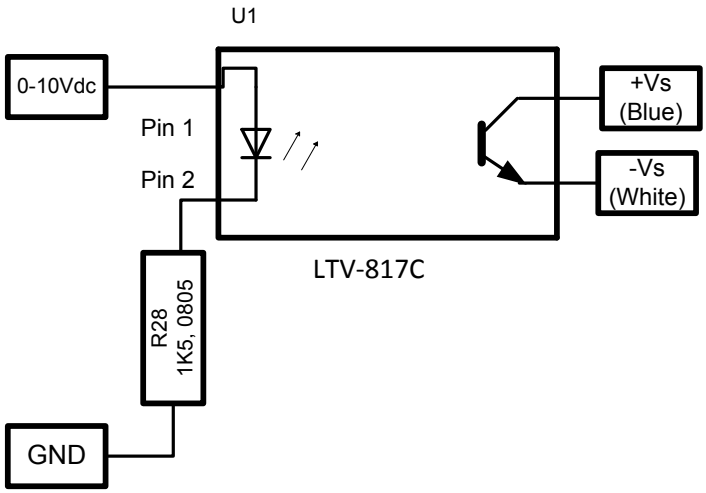
NOTE: to adjust the output current connect a 20K Ohm pot between blue and white wire

Analog (Resistive) Dimming Application Circuit

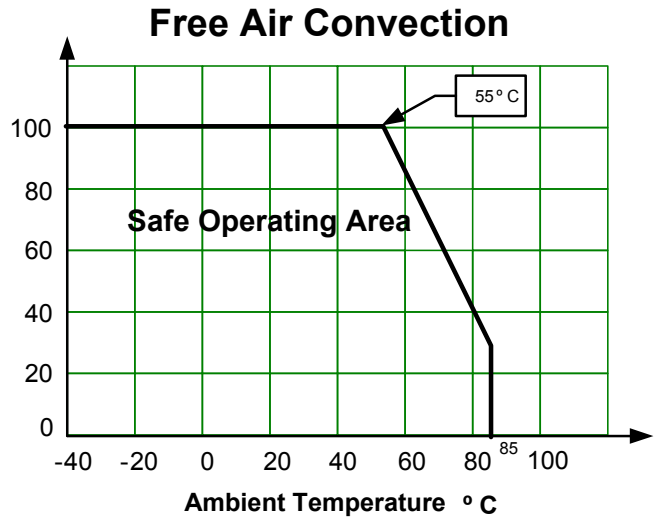


Model Number	Maximum Pot Value (kΩ)
AMEPR30-5070AZ	9.00
AMEPR30-4864AZ	9.00
AMEPR30-36100AZ	9.00
AMEPR30-24140AZ	26.00
AMEPR30-12250AZ	26.10

0-10V Dimming Application Circuit

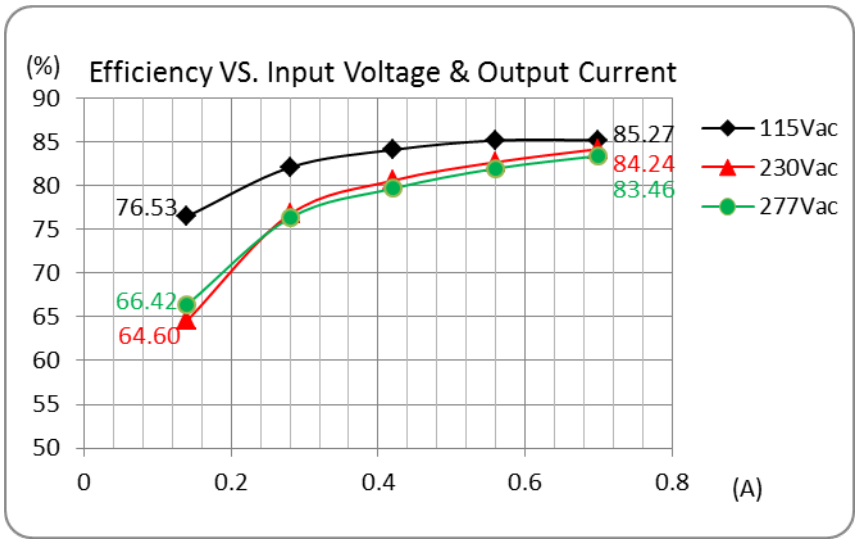


Derating

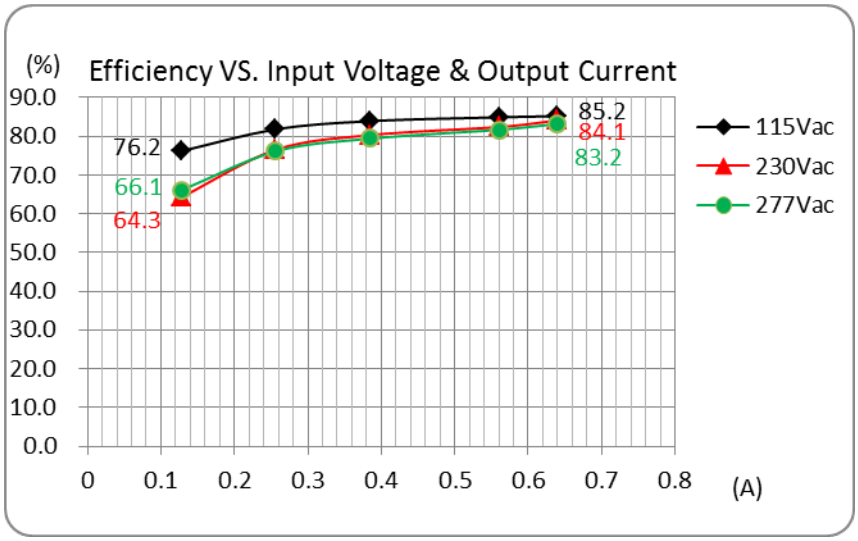


Efficiency Vs. Input Voltage & Output Current (Constant Current Mode)

AMEPR30-5070AZ

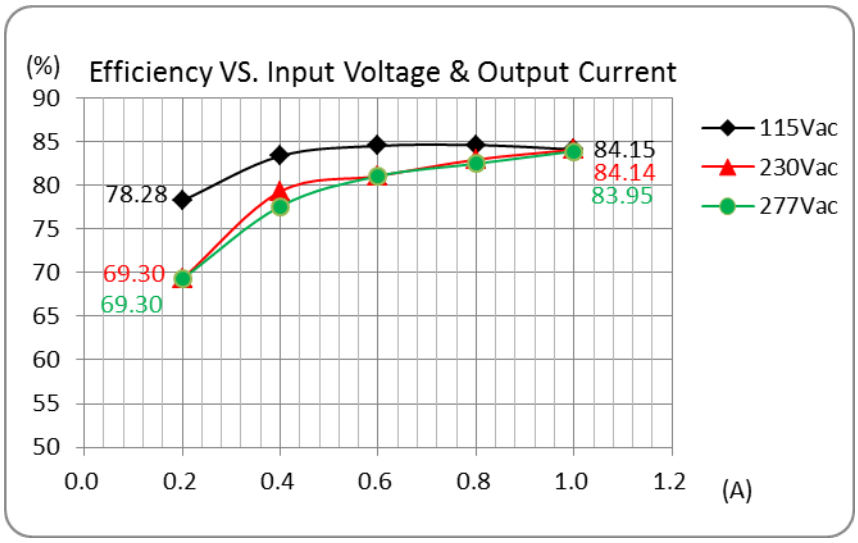


AMEPR30-4864AZ

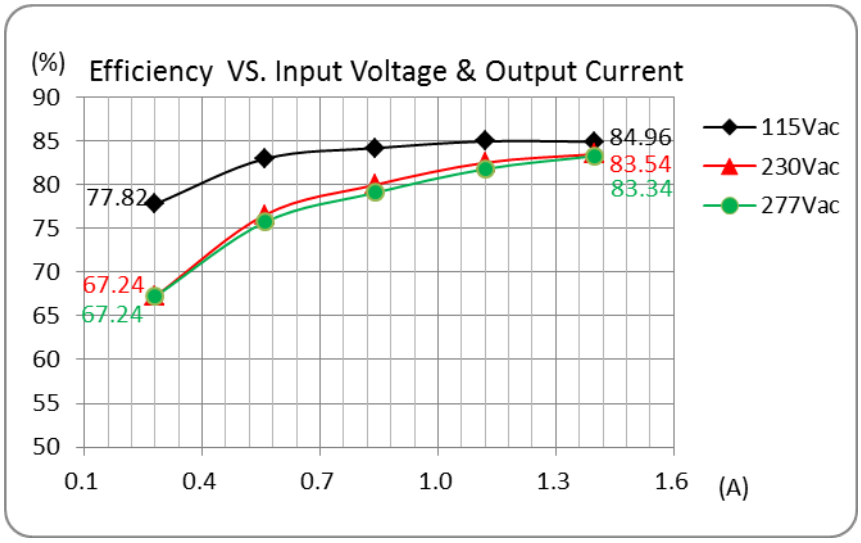


Efficiency Vs. Input Voltage & Output Current (Constant Current Mode) Continued

AMEPR30-36100AZ

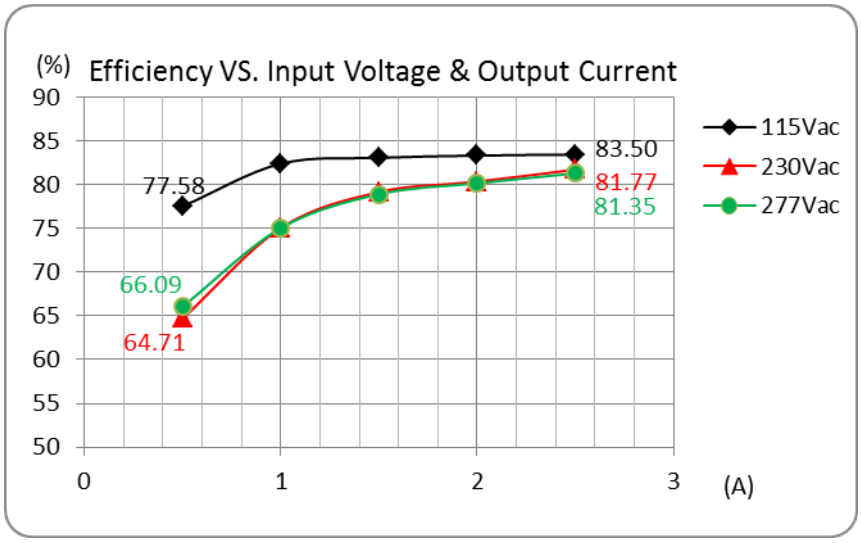


AMEPR30-24140AZ



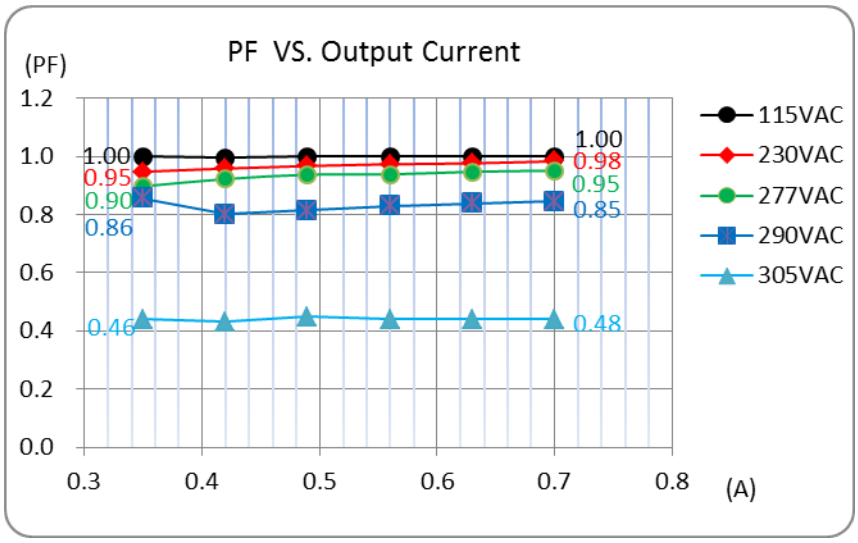
Efficiency Vs. Input Voltage & Output Current (Constant Current Mode) Continued

AMEPR30-12250AZ



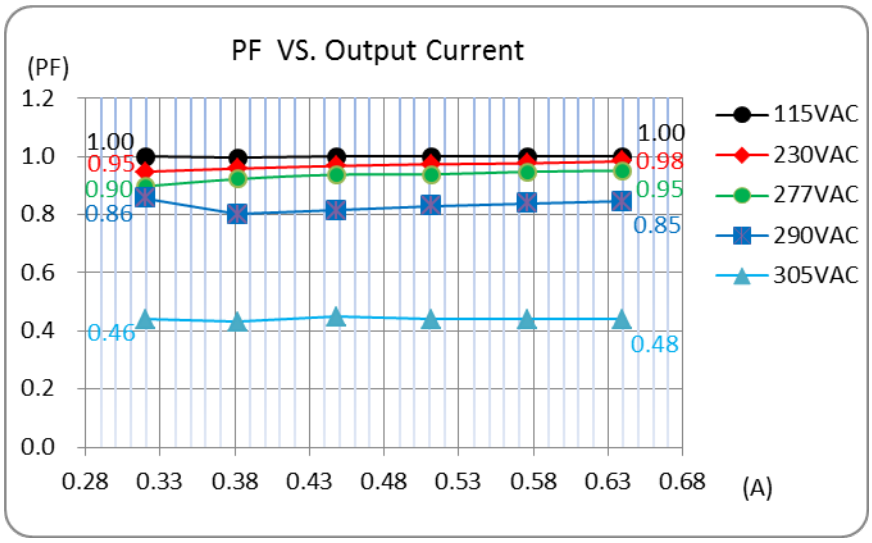
PFC Value vs. Output Load Current (Constant Current Mode)

AMEPR30-5070AZ

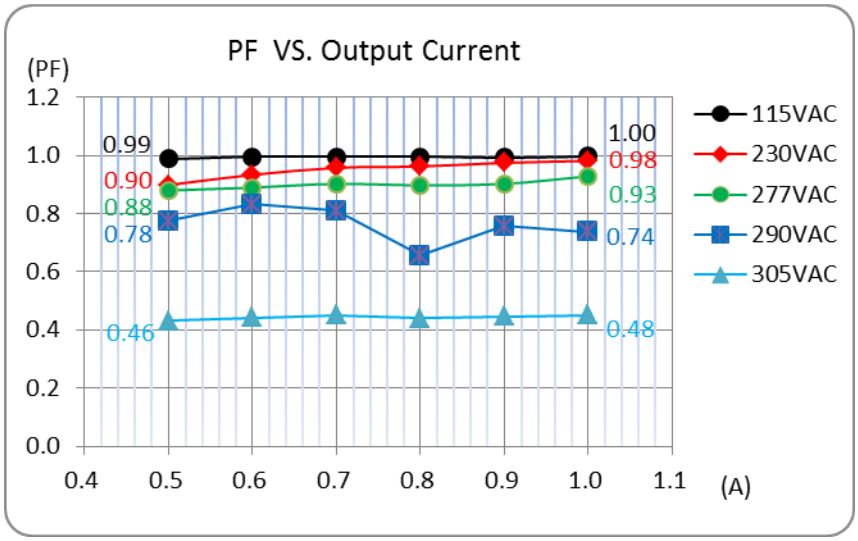


PFC Value vs. Output Load Current (Constant Current Mode) Continued

AMEPR30-4864AZ

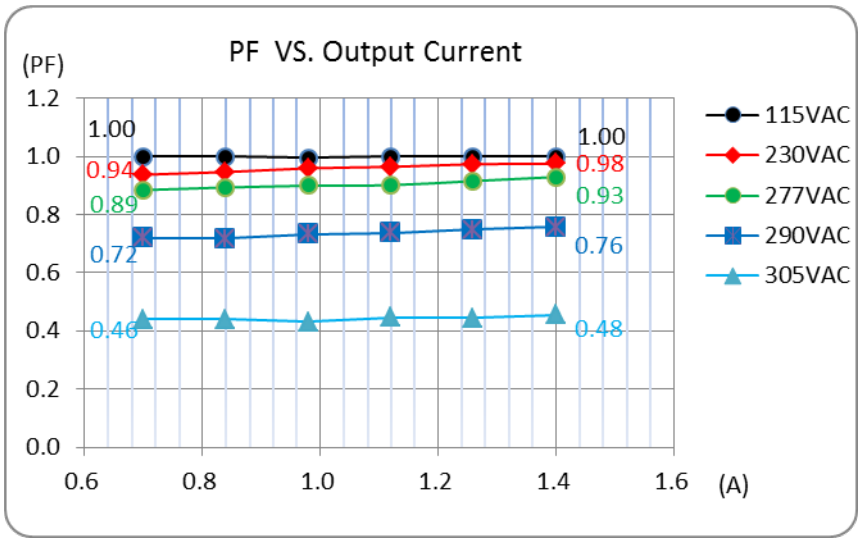


AMEPR30-36100AZ

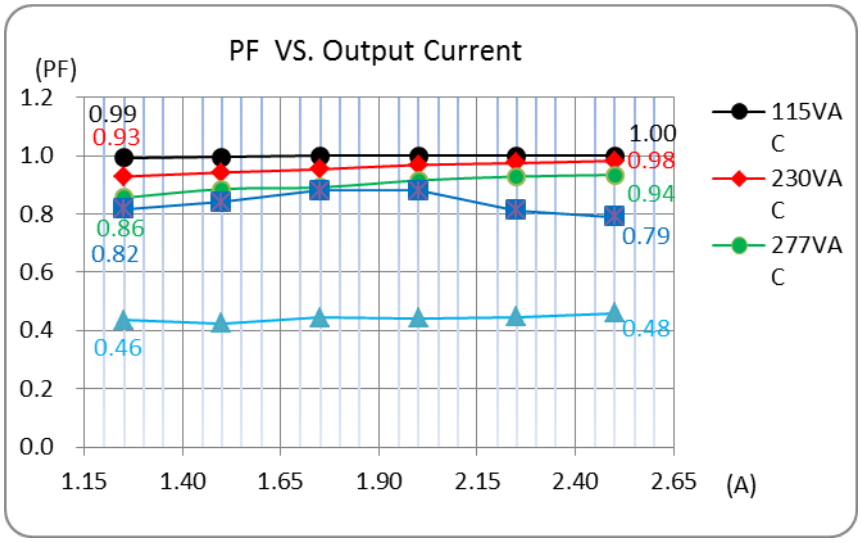


PFC Value vs. Output Load Current (constant current mode) Continued

AMEPR30-24140AZ

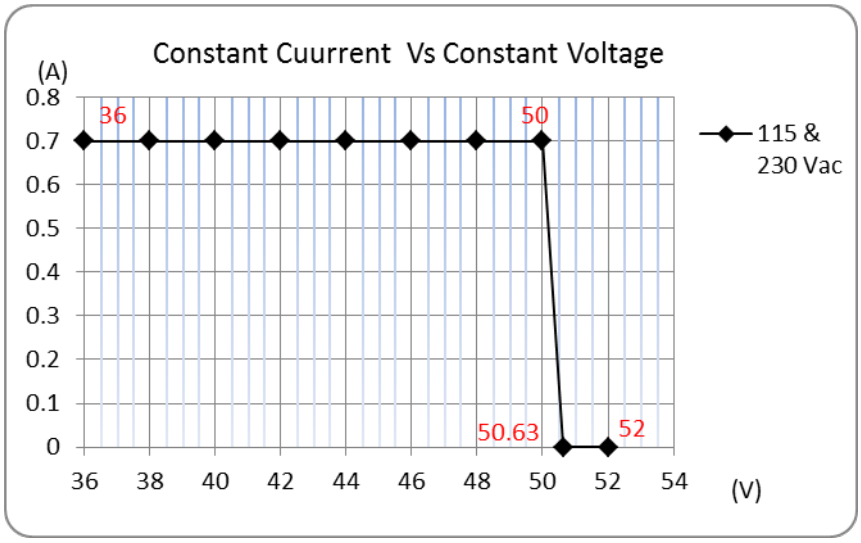


AMEPR30-12250AZ

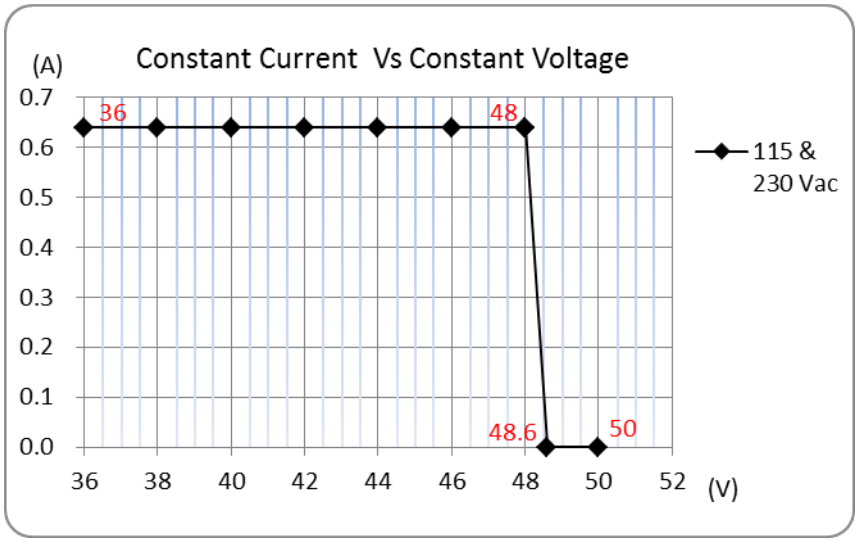


Constant Current vs. Constant Voltage Mode

AMEPR30-5070AZ

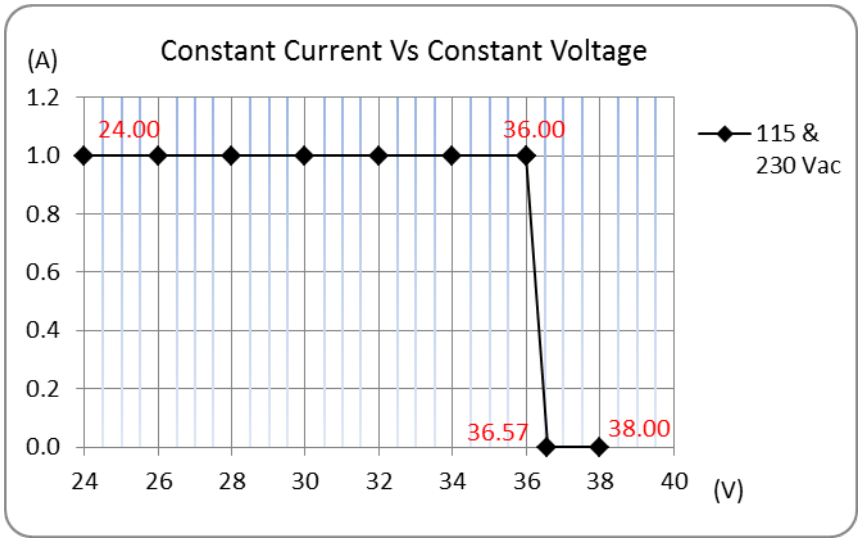


AMEPR30-4864AZ

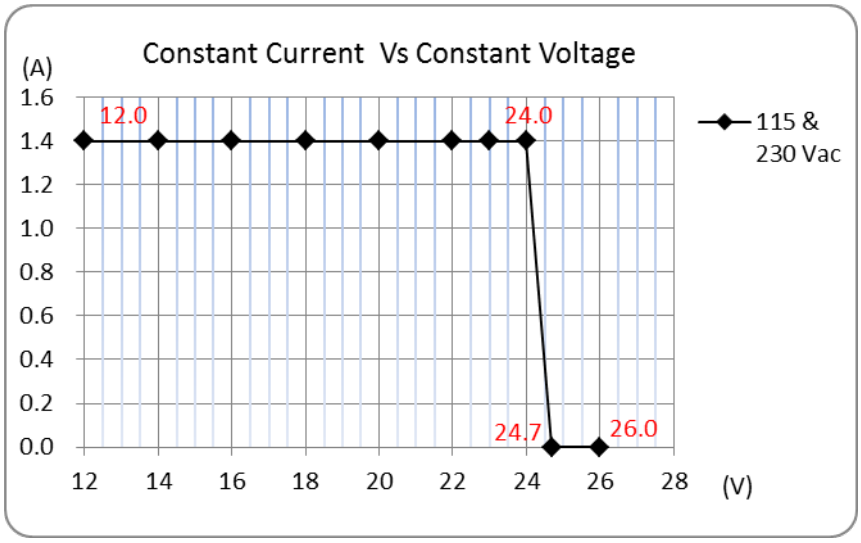


Constant Current vs. Constant Voltage Mode (continued)

AMEPR30-36100AZ

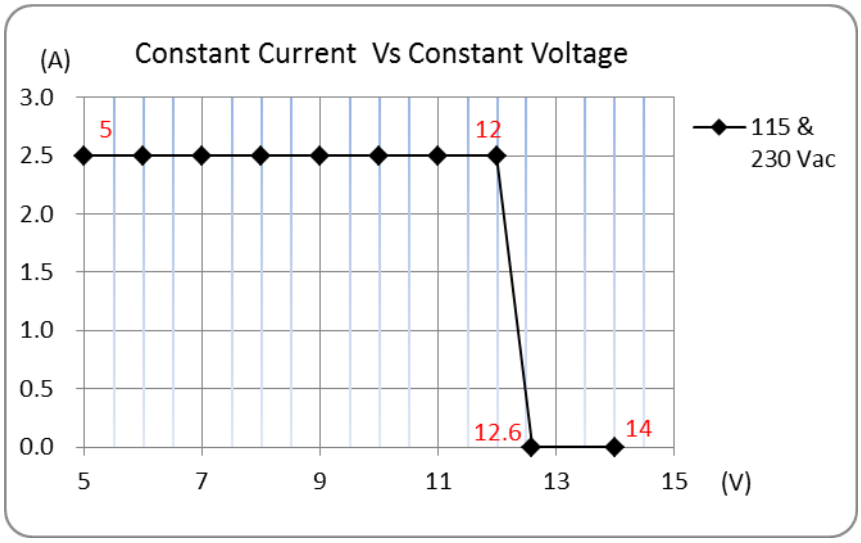


AMEPR30-24140AZ



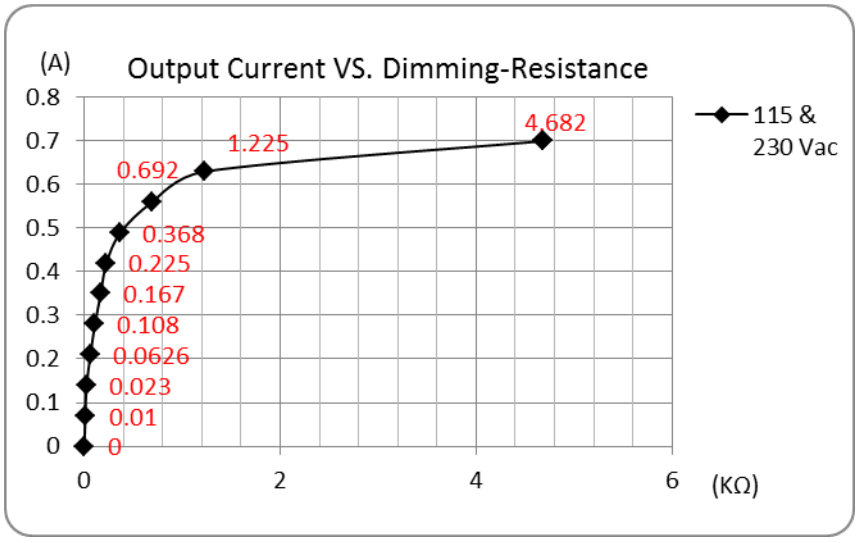
Constant Current vs. Constant Voltage Mode (continued)

AMEPR30-12250AZ



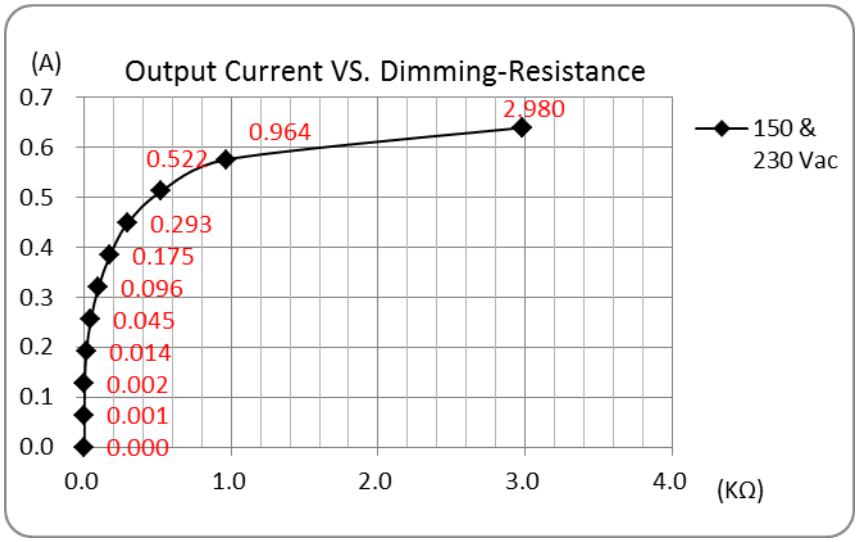
Dimming Control (Output Current vs. Radj)

AMEPR30-5070AZ

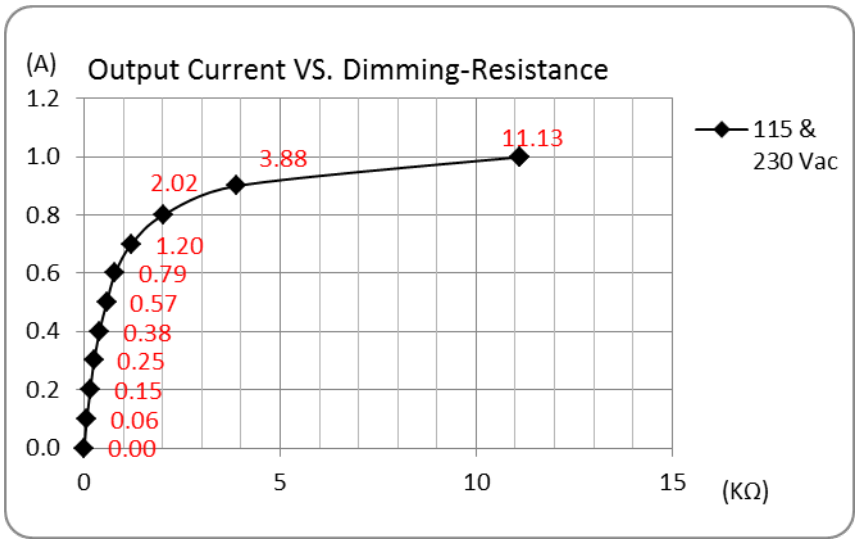


Dimming Control (Output Current vs. Radj) continued

AMEPR30-4864AZ

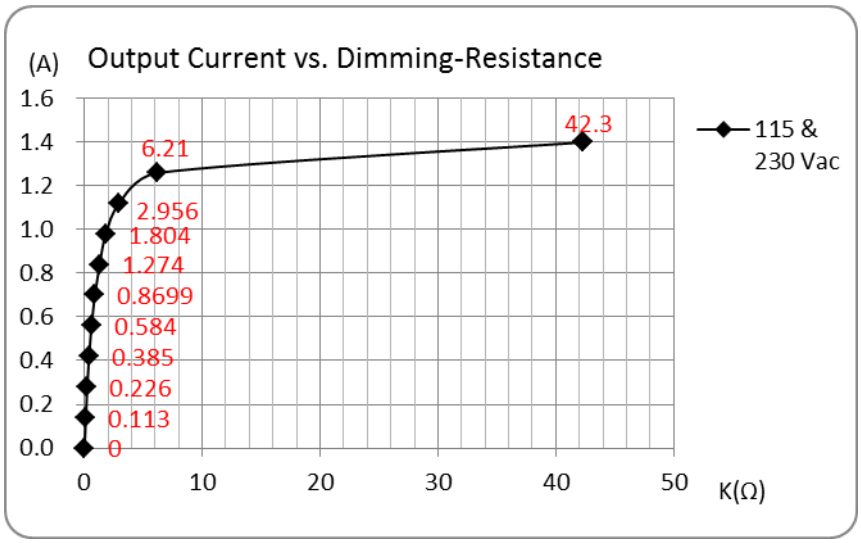


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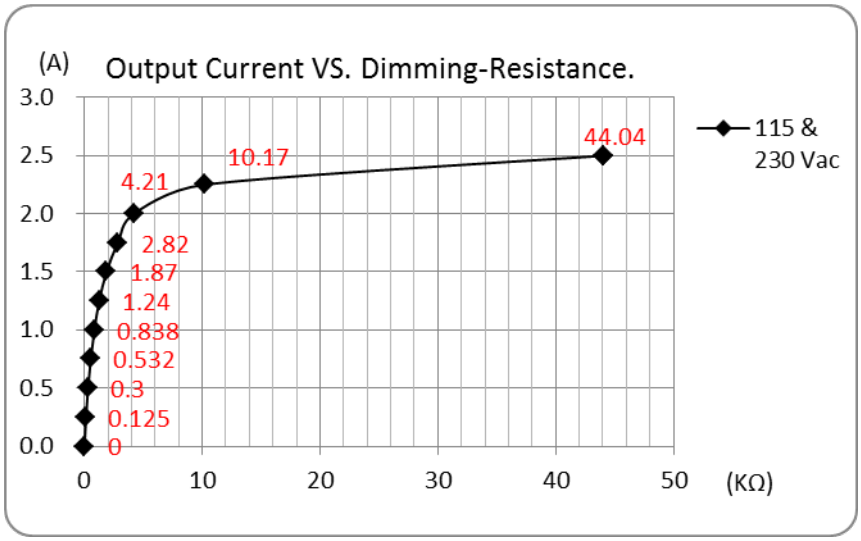


Dimming Control (Output Current vs. Radj) continued

AMEPR30-24140AZ



AMEPR30-12250AZ



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