

Series AMEPR60-AZ

up to 5A | AC-DC / DC-DC | LED Driver / Converter



Models Single output

FEATURES:

- AC-DC Constant Current or Constant Voltage LED Driver
- Input range 90-305VAC/47-440Hz
- High Efficiency up to 89%
- Operating temperature -40 to 85°C
- Dimmable via resistive / 0-10Vdc / PWM
- 5 Years Limited Warranty
- Over Temperature Protection
- Over Current Protection
- Waterproof Case rated IP68
- Power Factor Correction
- Short Circuit Protection



Submersible



RoHS



Model	Output Voltage Range (V) ③	Output Current (A) ③	Input Voltage (VAC/Hz)	Input Voltage (VDC)	Mode of Operation	OCP / OVP	Max Output Power (W) ①	Efficiency (%)
AMEPR60-50120AZ	36-50	0 - 1.20	90-305 / 47-440	130-430	Constant Current	1.27	60	89
					Constant Voltage ②	50.7	63.8	86
AMEPR60-36170AZ	24-36	0 - 1.70	90-305 / 47-440	130-430	Constant Current	1.77	59.8	88
					Constant Voltage ②	36.6	63.7	86
AMEPR60-24250AZ	12-24	0 - 2.50	90-305 / 47-440	130-430	Constant Current	2.55	60	87
					Constant Voltage ②	24.5	61	85
AMEPR60-12500AZ	5-12	0 - 5.0	90-305 / 47-440	130-430	Constant Current	5.2	60	85
					Constant Voltage ②	12.3	62	82

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.

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-sale>

AMEPR60-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
Inrush current <2ms	115VAC	30		A
	230VAC	50		
Leakage current	115VAC	0.5		mA
	230VAC	0.7		
AC current	115VAC	0.73		A
	230VAC	0.33		
Power Factor	115VAC		0.97	
	230VAC		0.93	
External fuse			250V/1.5A	
Start up time		250		ms
Surge voltage	2sec		440	V

Output Specifications

Parameters	Conditions	Typical	Maximum	Units
Current accuracy (CC Mode)		±3		%
Voltage accuracy (CV Mode)		±3		%
Line regulation	LL-HL	±1		%
Load regulation	0-100% load	±3		%
Ripple & Noise ④	20MHz Bandwidth	75		mV p-p
Hold-up time		90		ms
Current adjustment range⑤		100-10		%
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.

⑤ Note: from 0% to 10% dimming adjustment signal instability may be present.

Isolation Specifications

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	3 sec/3.5mA		3000	VAC
Isolation Resistance	500VDC	>1000		MΩ
Isolation Capacitance		1000		pF

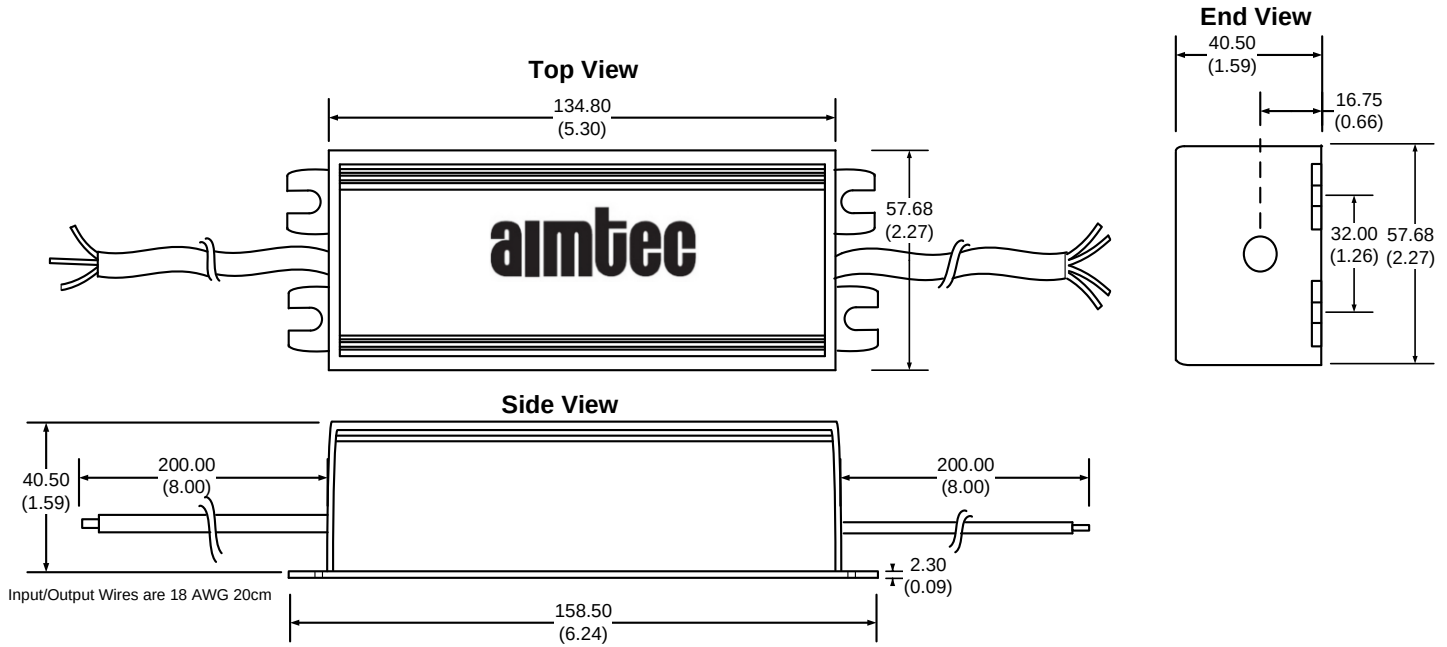
General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency		130		KHz
Over current protection	AMEPR60-50120AZ		1.27	A
	AMEPR60-36170AZ		1.77	
	AMEPR60-24250AZ		2.55	
	AMEPR60-12500AZ		5.2	
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	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	530			g
Dimensions (L X W X H)	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	CE
Standards	IEC870, IEC60950-1, 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 Level 3
	RF, Electromagnetic Field Immunity
	IEC 61000-4-3 Level 2
Standards	Electrical Fast Transient / Burst Immunity
	IEC 61000-4-4 Level 2
	Surge Immunity
	IEC 61000-4-5 Level 3
	RF, Conducted Disturbance Immunity
Standards	IEC 61000-4-6 Level 2
	Power frequency Magnetic Field Immunity
Standards	IEC 61000-4-8 Level 1
	Voltage dips, Short Interruptions Immunity
Standards	IEC 61000-4-11

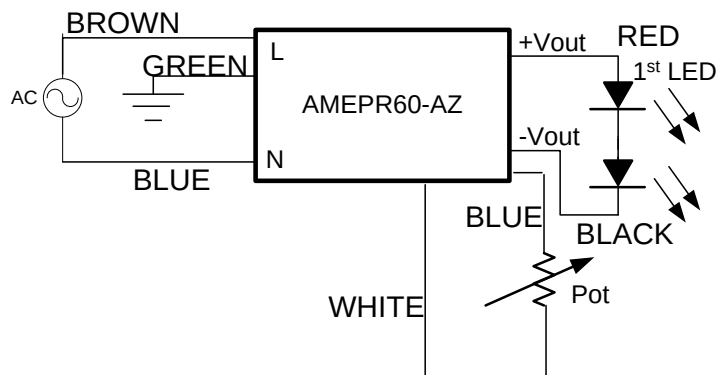
Dimensions



Wire connection:

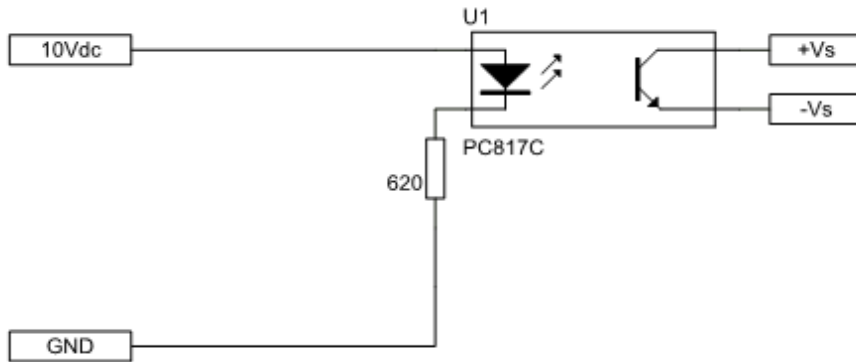
Wire	Connection
Brown	AC L
Blue	AC N
Green	Ground
Red	+V output
Black	-V Output
Blue (Dimming)	+ Vs dimming
White (Dimming)	-Vs dimming

AMEPR60-AZ Analog (resistive) Dimming Application Circuit

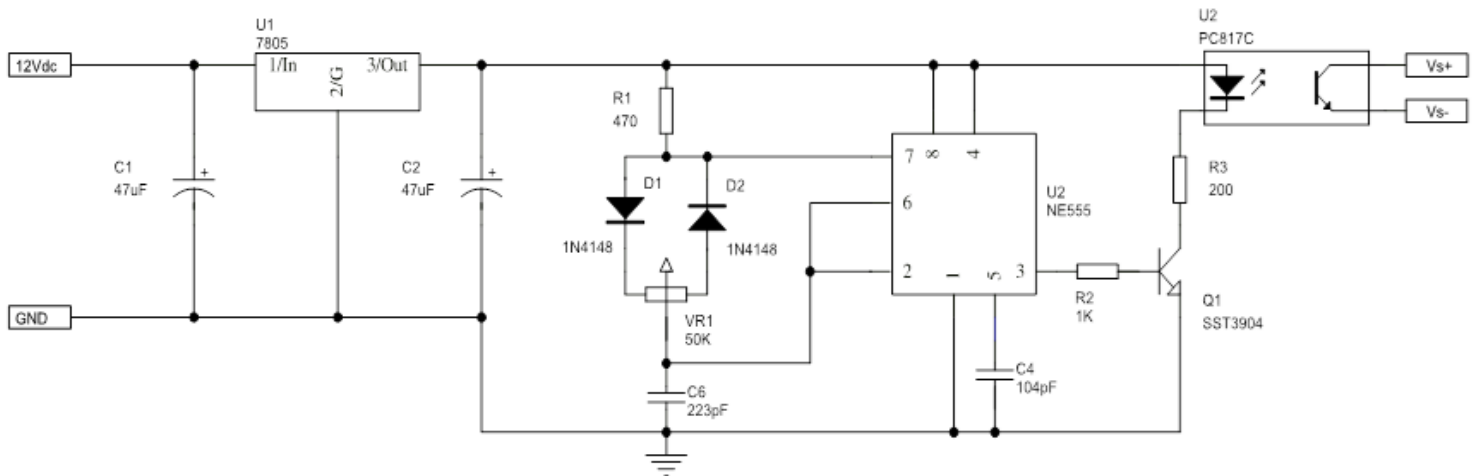


Model Number	Maximum Pot Value (kΩ)
AMEPR60-50120AZ	26.00
AMEPR60-36170AZ	16.95
AMEPR60-24250AZ	26.10
AMEPR60-12500AZ	34.10

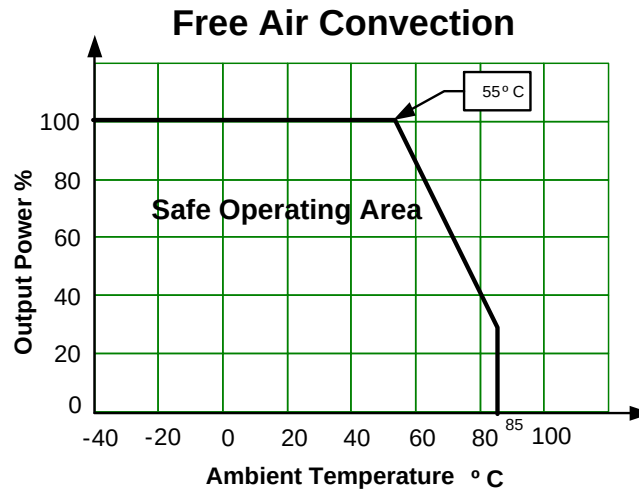
AMEPR60-AZ Analog (0-10V) Dimming Application Circuit



AMEPR60-AZ PWM (1KHz) Dimming Application Circuit

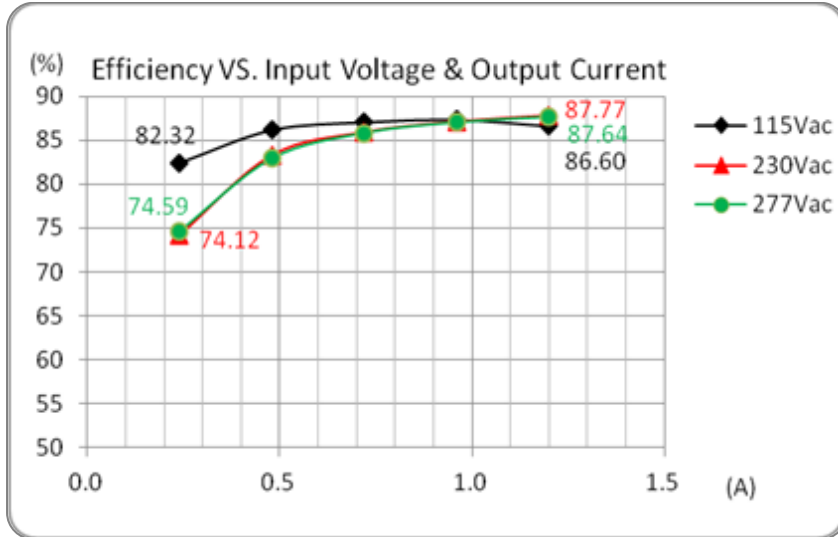


Temperature Graph

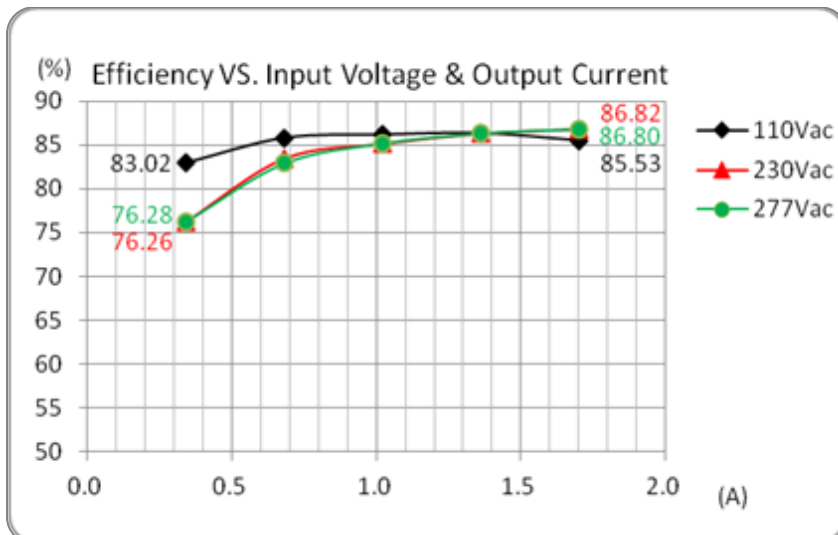


Efficiency Vs. Input Voltage & Output Current (Constant Current Mode)

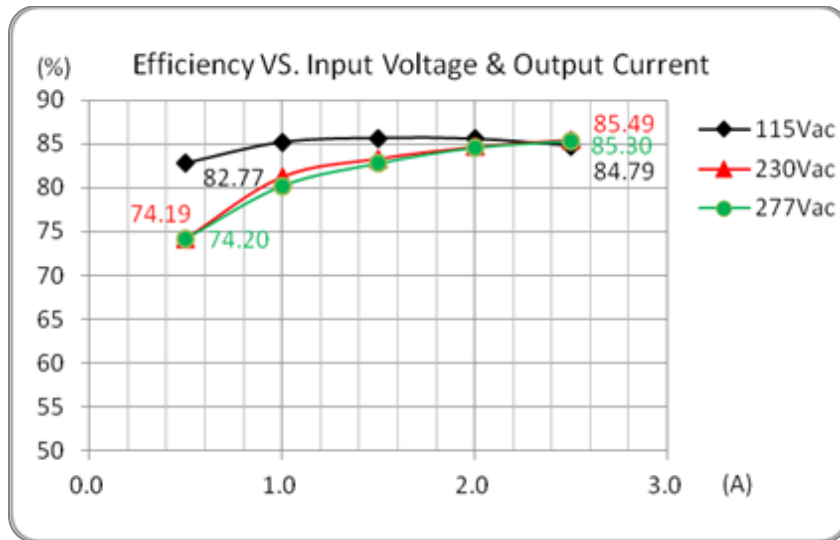
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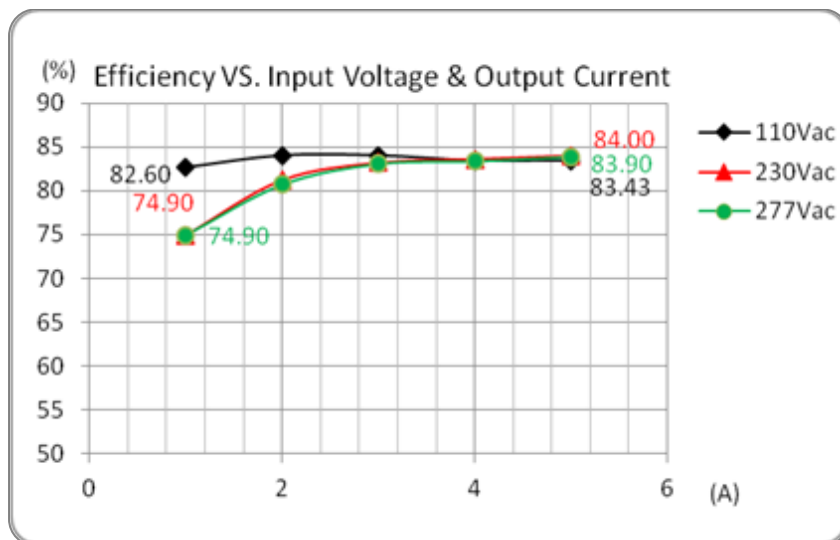
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AMEPR60-24250AZ

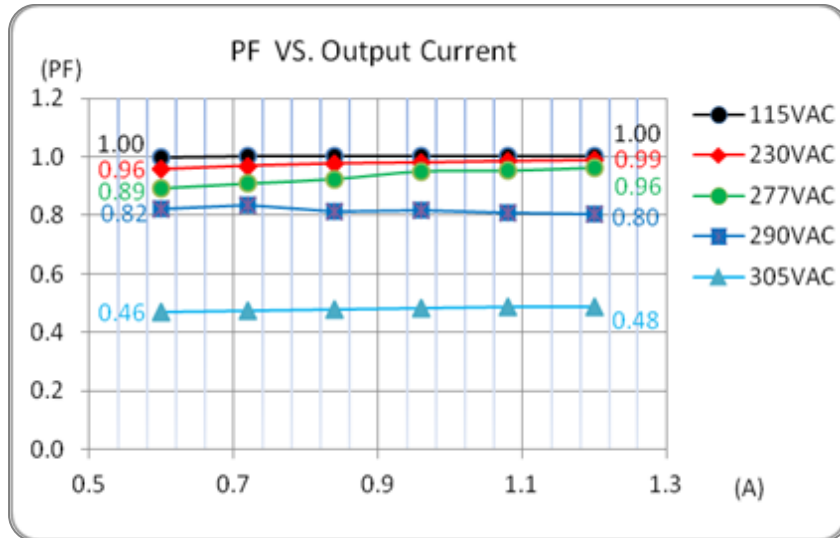


AMEPR60-12500AZ

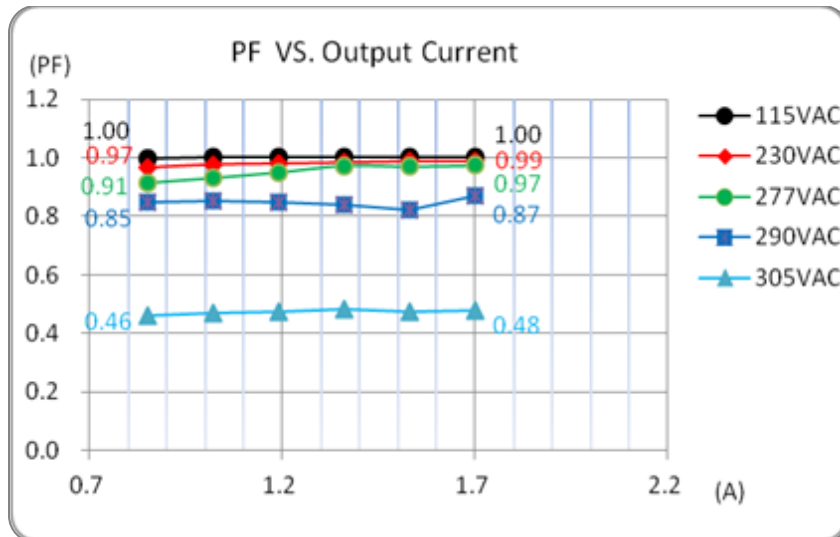


PFC Value vs. Output Load Current (Constant Current Mode)

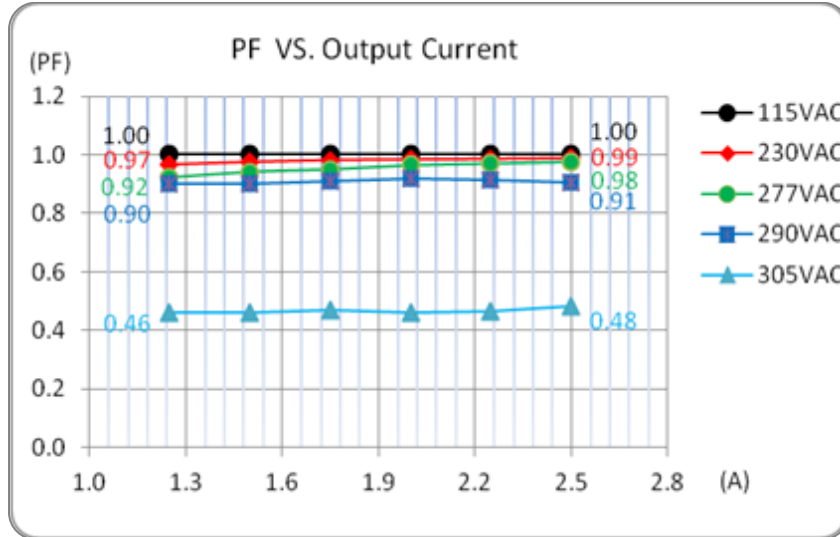
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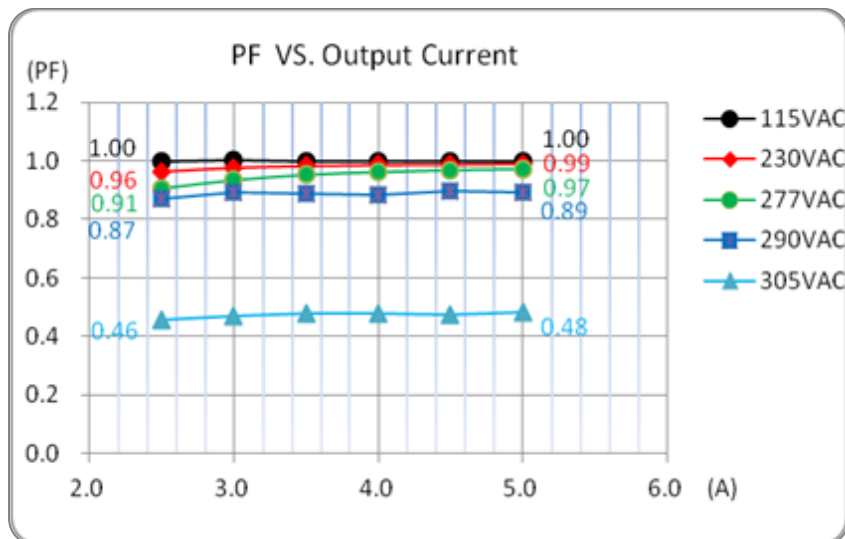
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AMEPR60-24250AZ

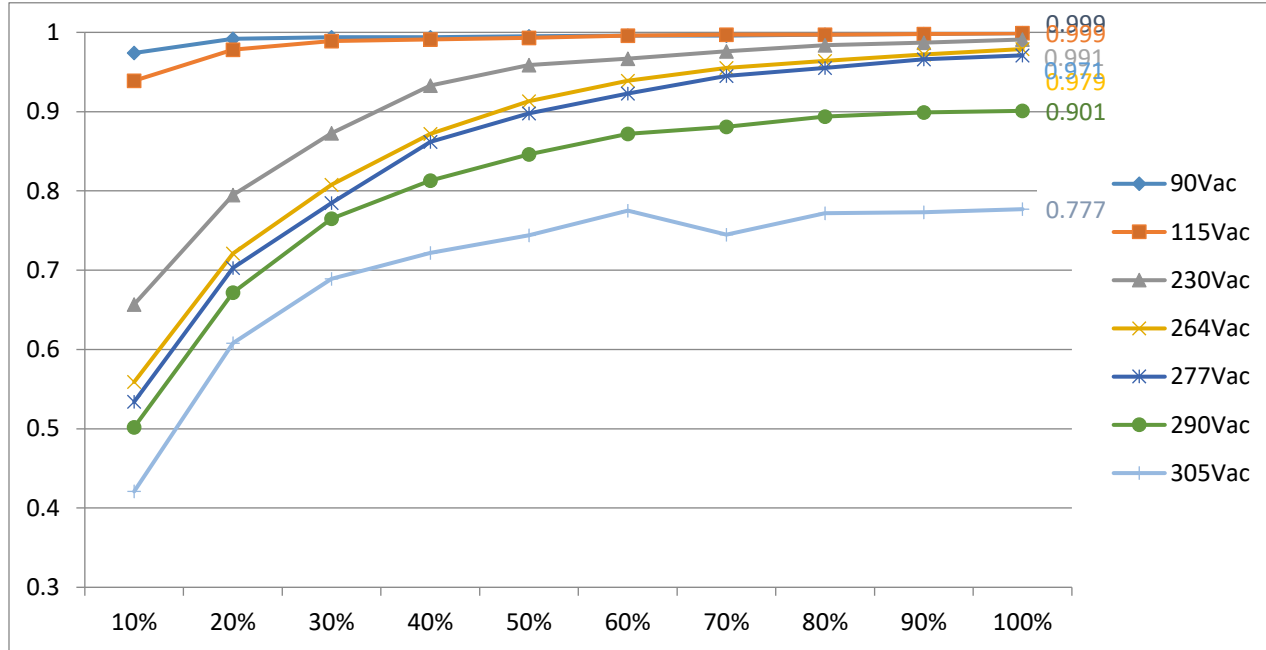


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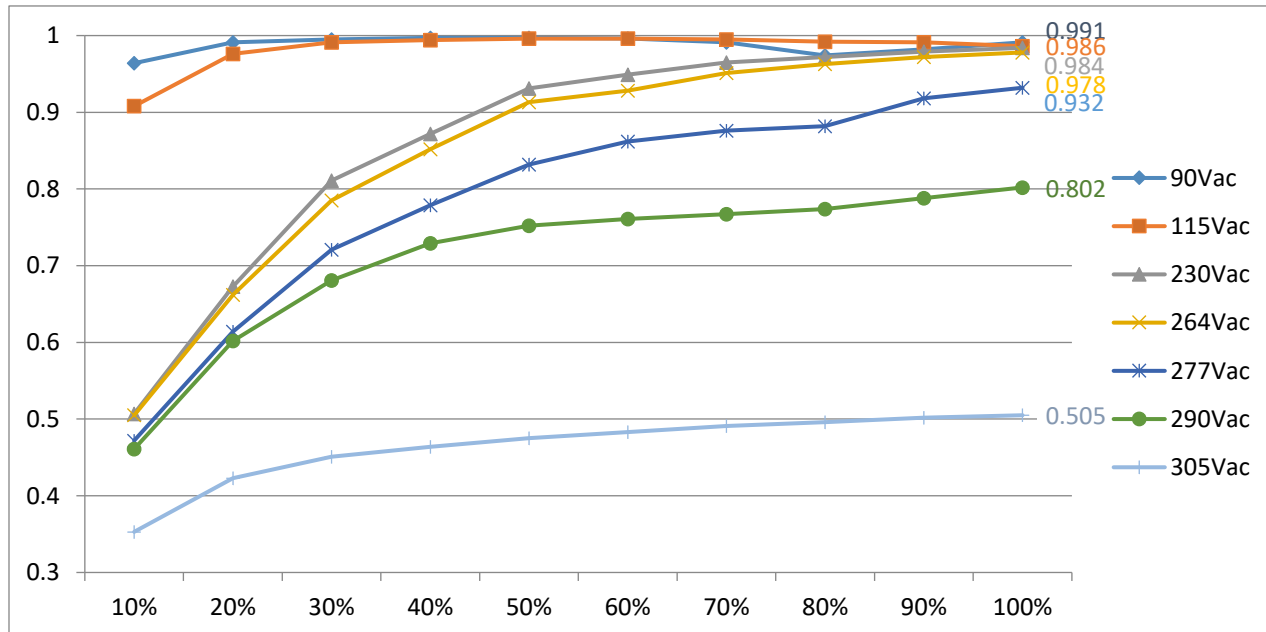


PFC Value vs. Output Power

AMEPR60-50120AZ

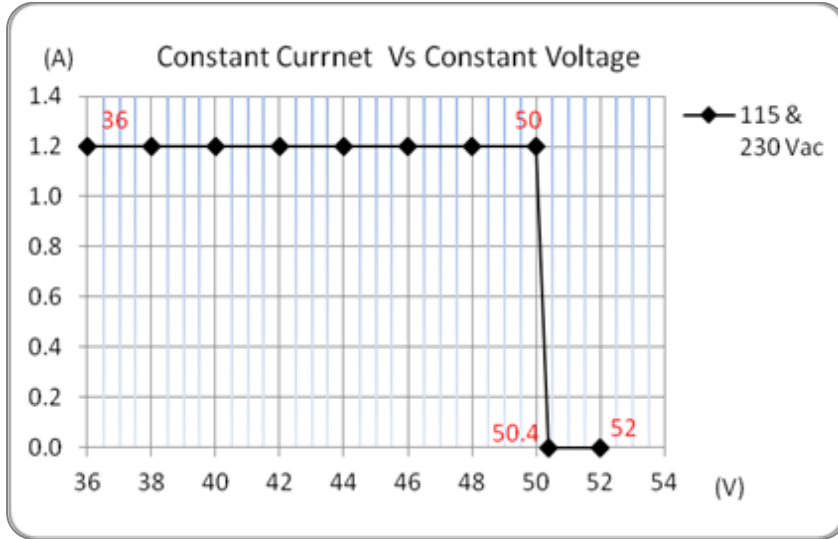


AMEPR60-24250AZ

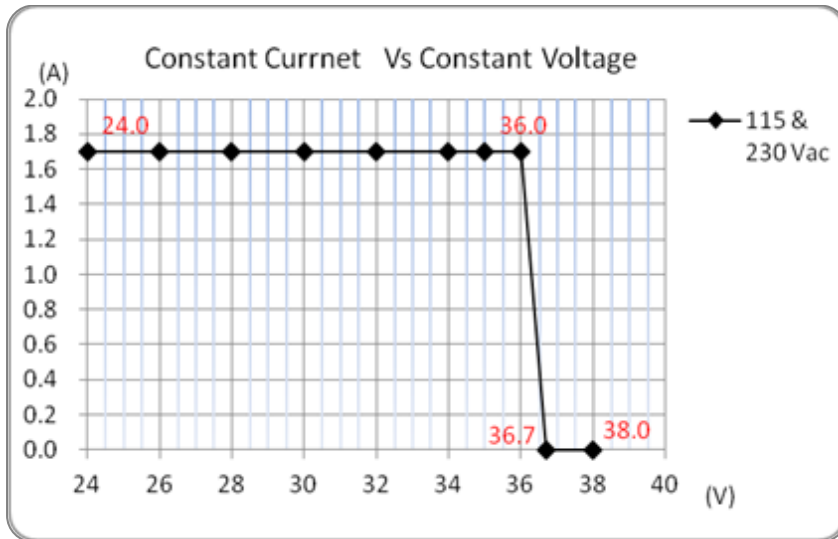


Constant Current vs. Constant Voltage Mode

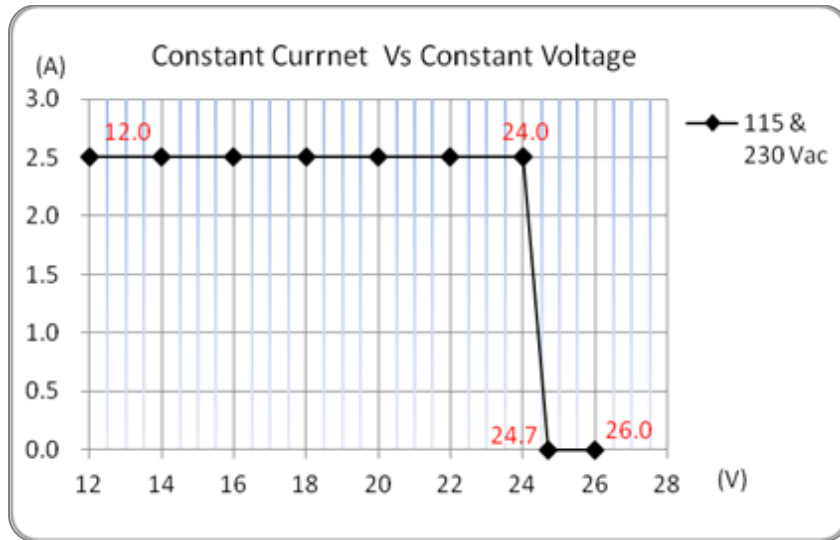
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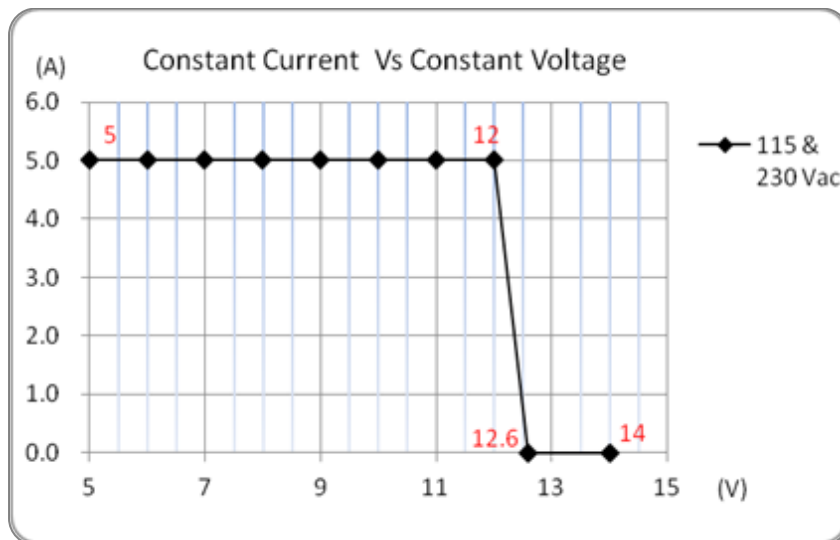
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AMEPR60-24250AZ

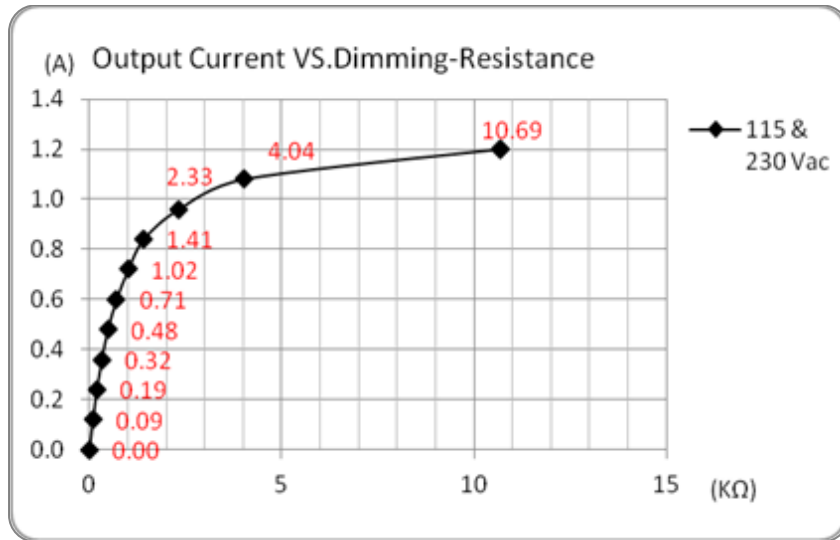


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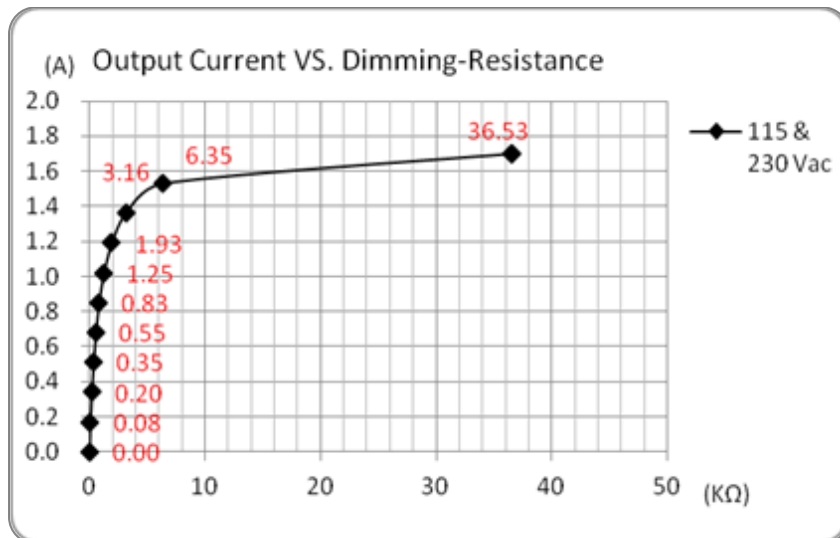


Dimming Control (Output Current vs. R_{adj})

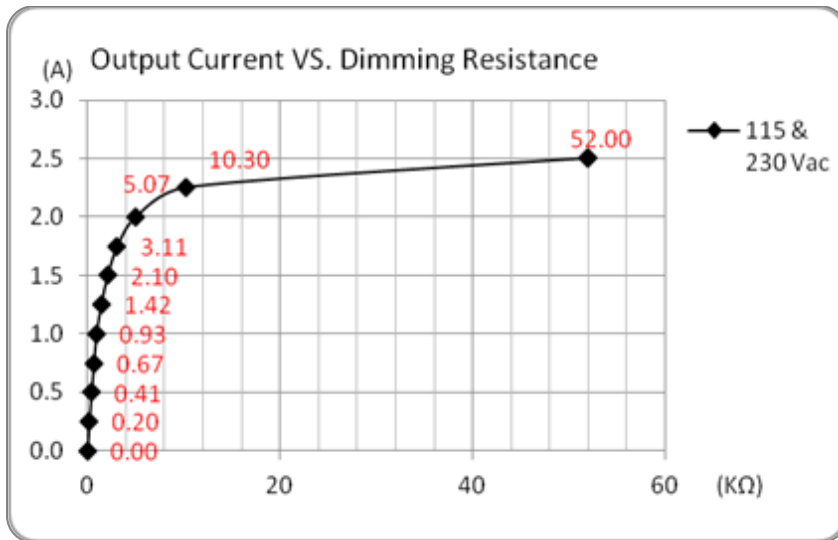
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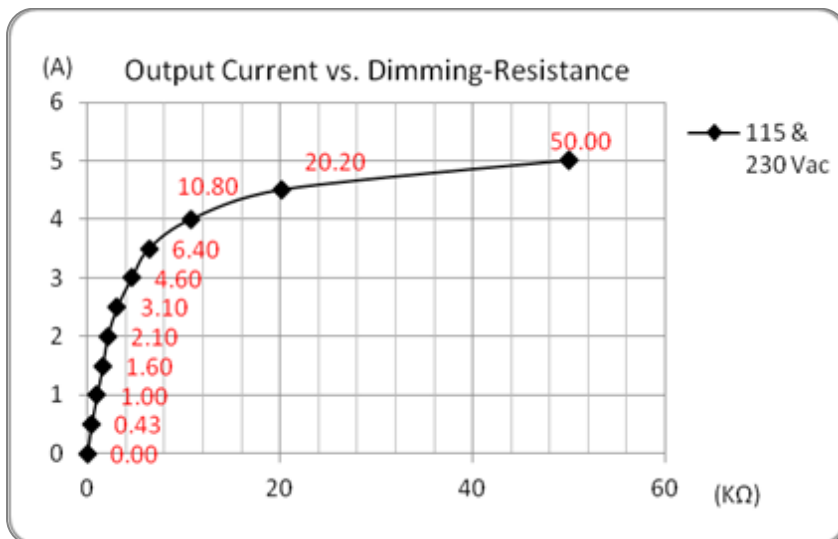
AMEPR60-36170AZ



AMEPR60-24250AZ



AMEPR60-12500AZ



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.