

**FEATURES:****Models  
Single output**

- AC-DC Constant Current or Constant Voltage LED Driver
- Input range 90-305VAC/47-440Hz
- High efficiency up to 84%
- 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           | Max Output Power (W) <sup>①</sup> | Output Voltage Range (V) <sup>③</sup> | Output Current (A) <sup>③</sup> | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Mode of Operation             | Efficiency (%) |         |         |
|-----------------|-----------------------------------|---------------------------------------|---------------------------------|------------------------|---------------------|-------------------------------|----------------|---------|---------|
|                 |                                   |                                       |                                 |                        |                     |                               | 115 VAC        | 230 VAC | 277 VAC |
| AMEPR30-5070AZ  | 35                                | 36-50                                 | 0.7                             | 90-305/47-440          | 130-430             | Constant Current              | 84             | 83      | 83      |
|                 |                                   |                                       |                                 |                        |                     | Constant Voltage <sup>②</sup> | 84             | 83      | 83      |
| AMEPR30-4864AZ  | 30.7                              | 36-48                                 | 0.64                            | 90-305/47-440          | 130-430             | Constant Current              | 84             | 83      | 83      |
|                 |                                   |                                       |                                 |                        |                     | Constant Voltage <sup>②</sup> | 84             | 83      | 83      |
| AMEPR30-36100AZ | 36                                | 24-36                                 | 1                               | 90-305/47-440          | 130-430             | Constant Current              | 84             | 83      | 83      |
|                 |                                   |                                       |                                 |                        |                     | Constant Voltage <sup>②</sup> | 84             | 83      | 83      |
| AMEPR30-24140AZ | 33.6                              | 12-24                                 | 1.4                             | 90-305/47-440          | 130-430             | Constant Current              | 83             | 82      | 82      |
|                 |                                   |                                       |                                 |                        |                     | Constant Voltage <sup>②</sup> | 83             | 82      | 82      |
| AMEPR30-12250AZ | 30                                | 5-12                                  | 2.5                             | 90-305/47-440          | 130-430             | Constant Current              | 81             | 80      | 80      |
|                 |                                   |                                       |                                 |                        |                     | Constant Voltage <sup>②</sup> | 81             | 80      | 80      |

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> AMEPR30-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                    |         | 430     | mA    |
|                                  | 230 VAC                    |         | 250     | mA    |
|                                  | 277 VAC                    |         | 210     | mA    |
| Inrush current <2ms (cold start) | 115 VAC                    |         | 25      | A     |
|                                  | 230 VAC                    |         | 40      | A     |
|                                  | 277 VAC                    |         | 55      | A     |
| Leakage current                  | I/O                        |         | 0.25    | mA    |
|                                  | I/FG, O/FG                 |         | 3.5     | mA    |
| Power factor                     | 115 VAC                    | 0.96    |         |       |
|                                  | 230 VAC                    | 0.90    |         |       |
|                                  | 277 VAC                    | 0.85    |         |       |
| External fuse                    | Recommended slow blow type | 1       |         | A     |
| Start-up time                    |                            | 450     |         | ms    |

## Output Specifications

| Parameters                            | Conditions  | Typical | Maximum | Units  |
|---------------------------------------|-------------|---------|---------|--------|
| Current accuracy                      |             | ±3      |         | %      |
| Line regulation                       | (LL-HL)     | ±2      |         | %      |
| Load regulation                       | 0-100% load | ±3      |         | %      |
| Ripple & Noise*                       |             | 100     |         | mV p-p |
| Hold-up time                          |             | 50      |         | ms     |
| Current adjustment range <sup>⑤</sup> |             | 100-10  |         | %      |

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 voltage       | I/O        | 3sec    | 3750  | VAC   |
|                      | I/FG       |         | 2000  | VAC   |
|                      | O/FG       |         | 500   | VAC   |
| Isolation resistance | 500VDC     | >1000   |       | MΩ    |

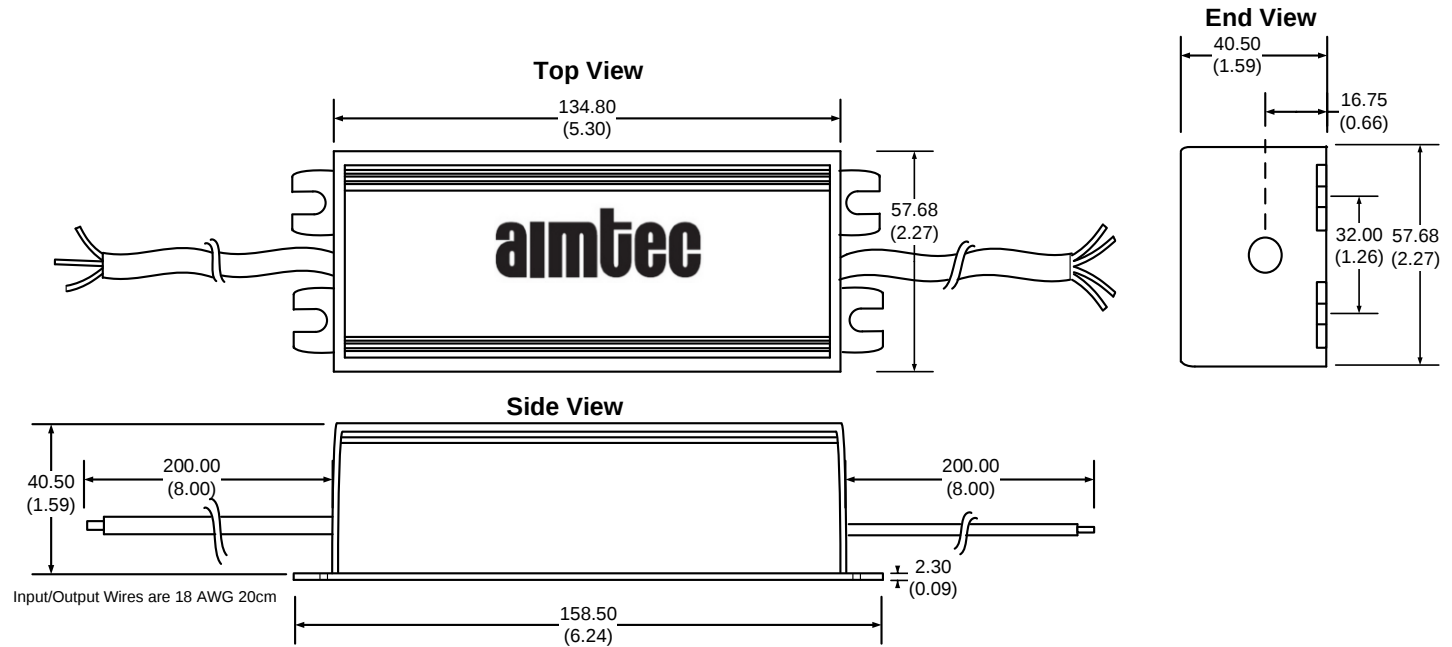
## General Specifications

| Parameters                  | Conditions                                                | Typical                    | Maximum | Units  |
|-----------------------------|-----------------------------------------------------------|----------------------------|---------|--------|
| Switching frequency         |                                                           | 130                        |         | KHz    |
| Over current protection     | AMEPR30-5070AZ                                            |                            | 0.77    | A      |
|                             | AMEPR30-4864AZ                                            |                            | 0.68    |        |
|                             | AMEPR30-36100AZ                                           |                            | 1.04    |        |
|                             | AMEPR30-24140AZ                                           |                            | 1.45    |        |
|                             | AMEPR30-12250AZ                                           |                            | 2.55    |        |
| Over voltage protection     | Refer to Constant Current vs. Constant Voltage Mode curve |                            |         |        |
| Short circuit protection    | Auto recovery                                             |                            |         |        |
| Over temperature protection |                                                           | 110~120                    |         | °C     |
| Operating temperature       | With derating over 55°C                                   | Refer to model application |         | °C     |
| Maximum case temperature    |                                                           |                            | 100     | °C     |
| Storage temperature         |                                                           | -40 to +95                 |         | °C     |
| Temperature coefficient     |                                                           | ±0.02                      |         | % / °C |
| Cooling                     | Free air convection                                       |                            |         |        |
| Humidity                    | Non condensing                                            | 20~95                      |         | % RH   |
| Case material               | Plastic                                                   |                            |         |        |
| Potting                     | Epoxy (IP68 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 t=+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 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

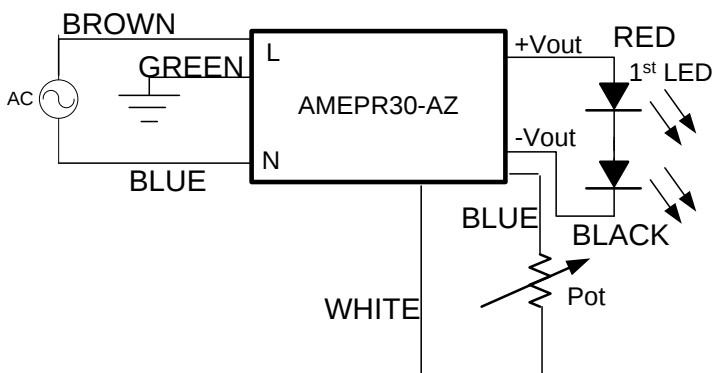


**NOTE:** to adjust the output current connect a 20K Ohm pot between blue and white wire

## Wire connection:

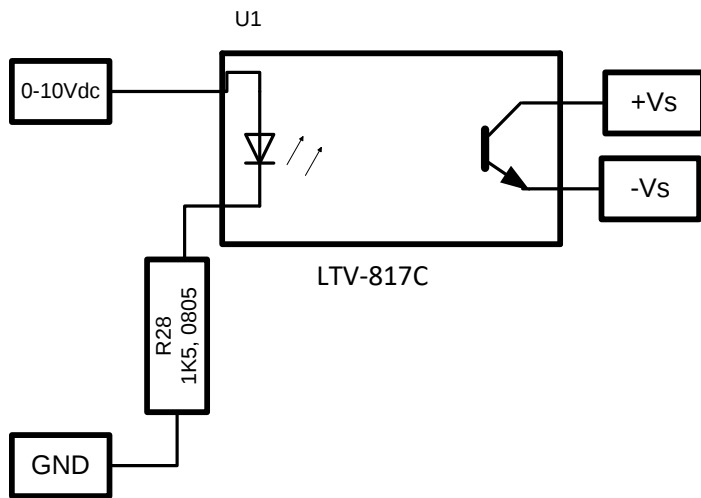
| Wire            | Connection   |
|-----------------|--------------|
| Brown           | AC L         |
| Blue            | AC N         |
| Green           | Ground       |
| Red             | +V output    |
| Black           | -V Output    |
| Blue (Dimming)  | + Vs dimming |
| White (Dimming) | -Vs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

## Analog (Resistive) Dimming Application Circuit

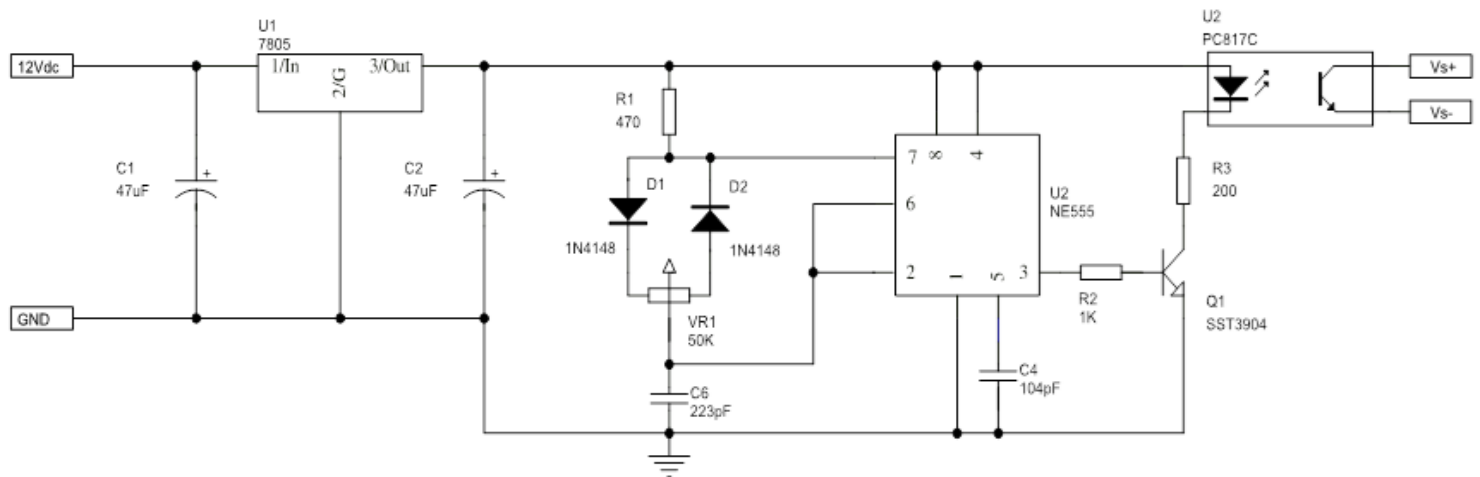


| Model Number    | Maximum Pot Value (kΩ) |
|-----------------|------------------------|
| AMEPR30-5070AZ  | 4.68                   |
| AMEPR30-4864AZ  | 2.98                   |
| AMEPR30-36100AZ | 11.13                  |
| AMEPR30-24140AZ | 42.60                  |
| AMEPR30-12250AZ | 44.04                  |

## 0-10V Dimming Application Circuit

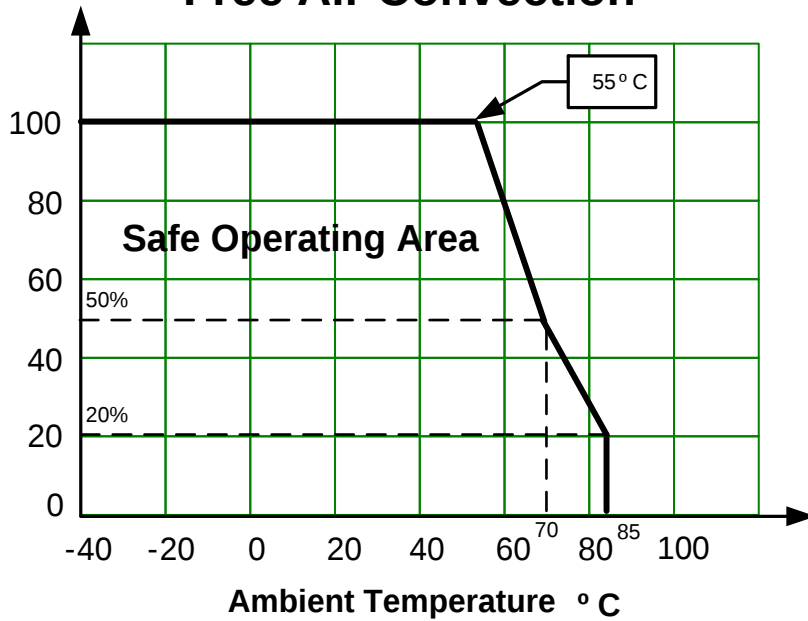


## PWM (1KHz) Dimming Application Circuit



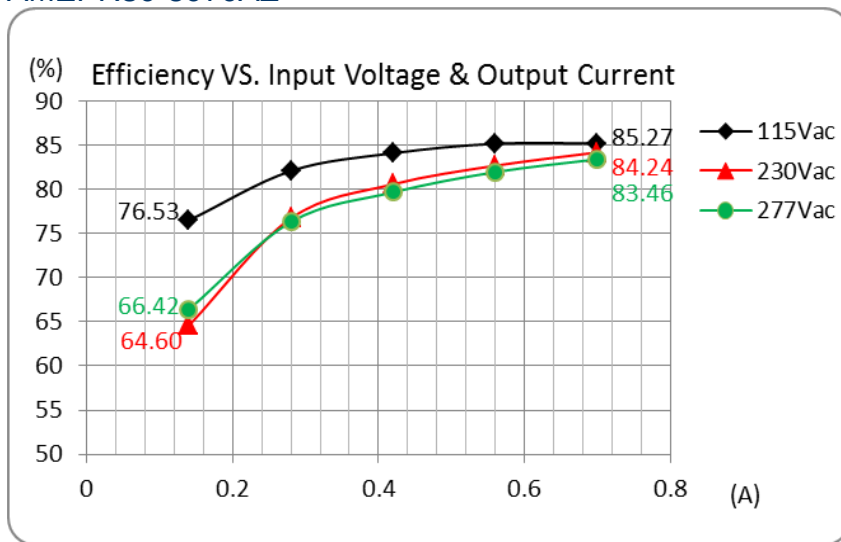
**Derating**

**Free Air Convection**

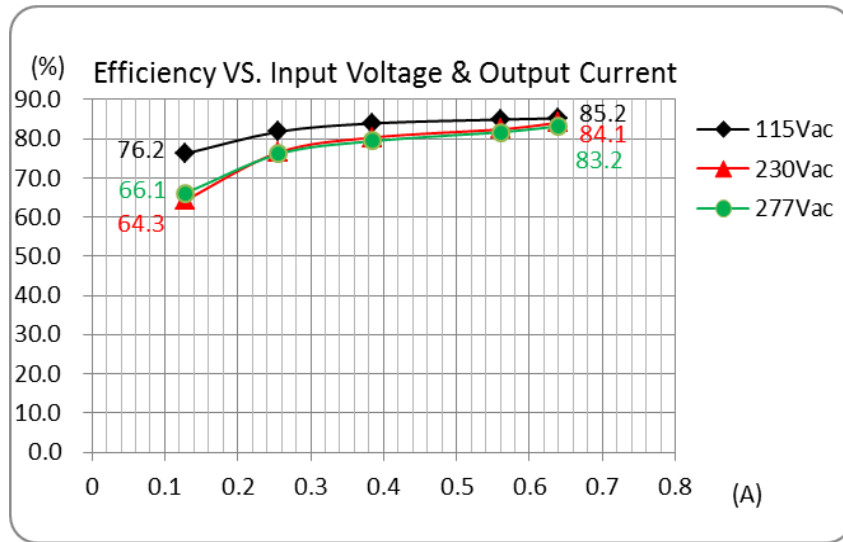


**Efficiency Vs. Input Voltage & Output Current (Constant Current Mode)**

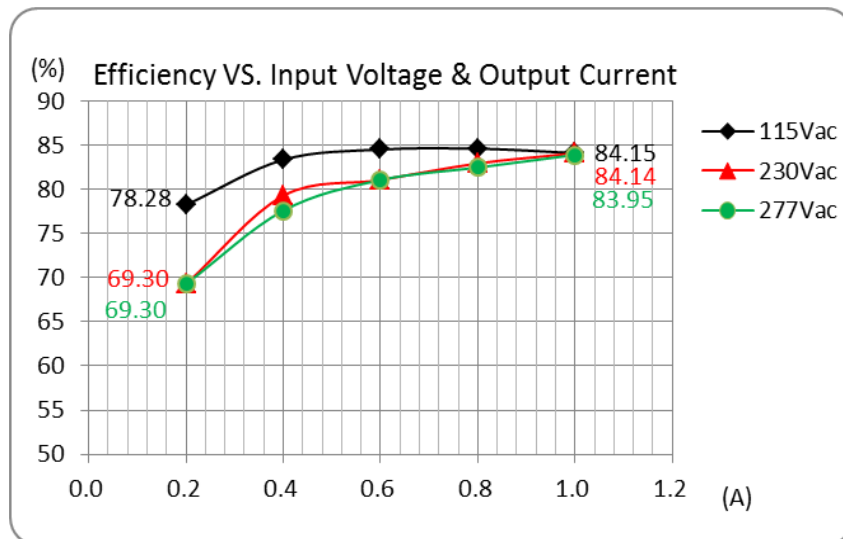
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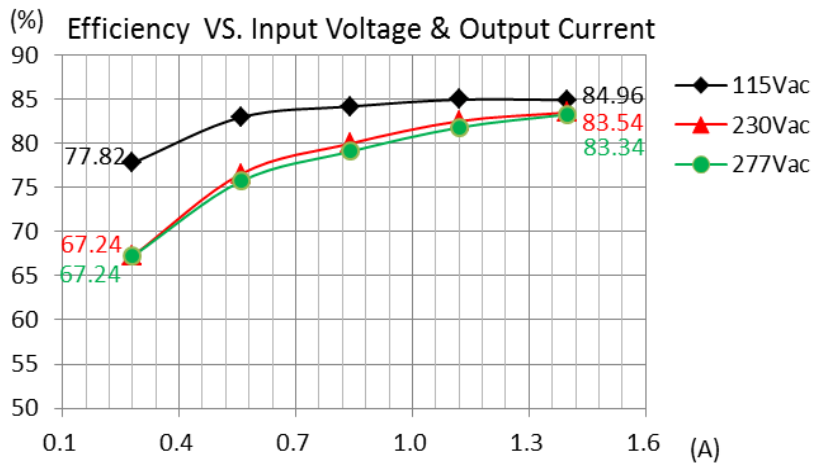
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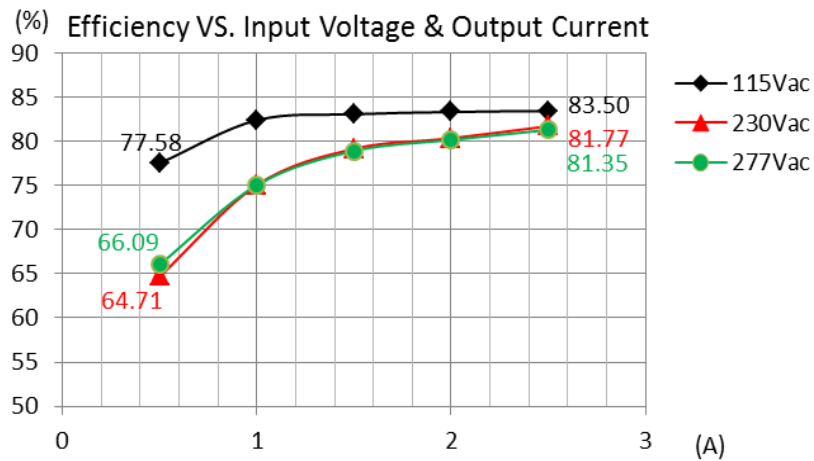
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### AMEPR30-24140AZ

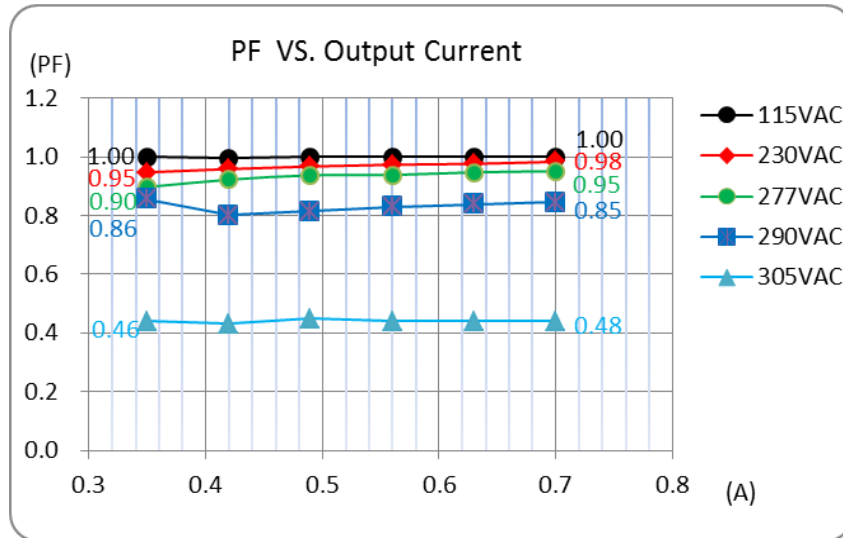


### AMEPR30-12250AZ

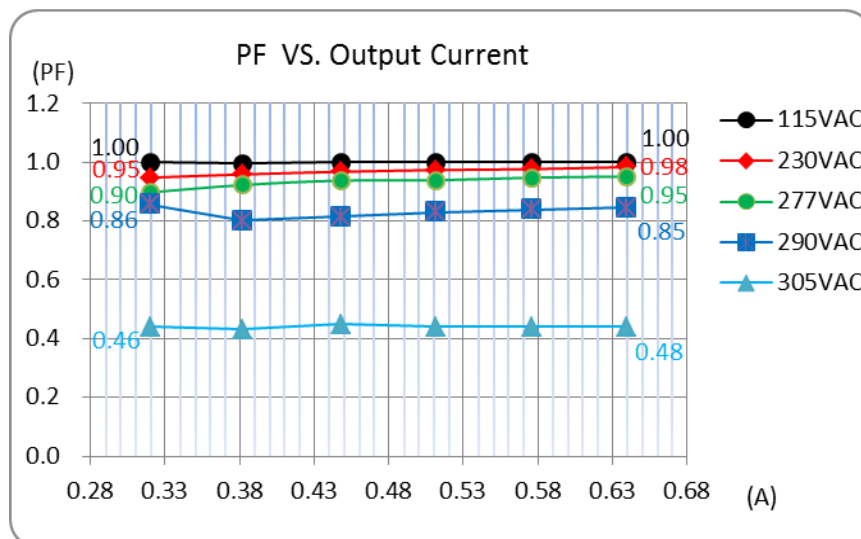


## PFC Value vs. Output Load Current (Constant Current Mode)

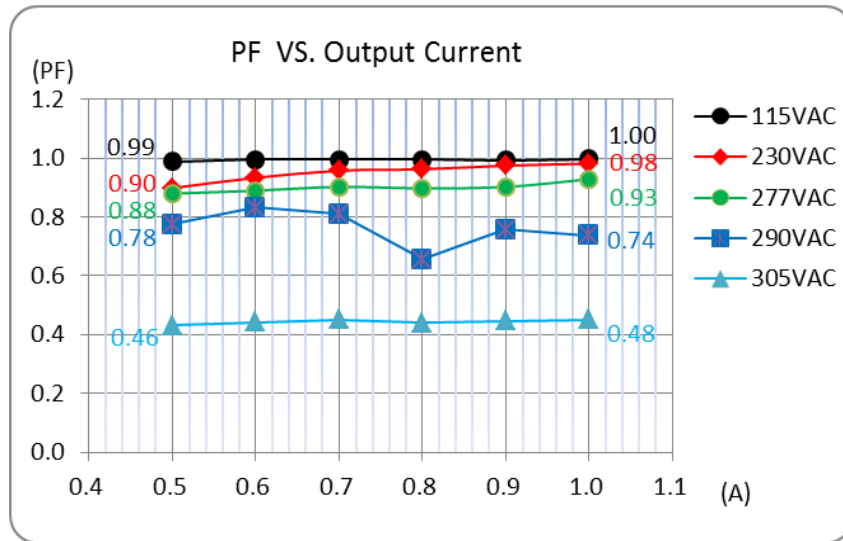
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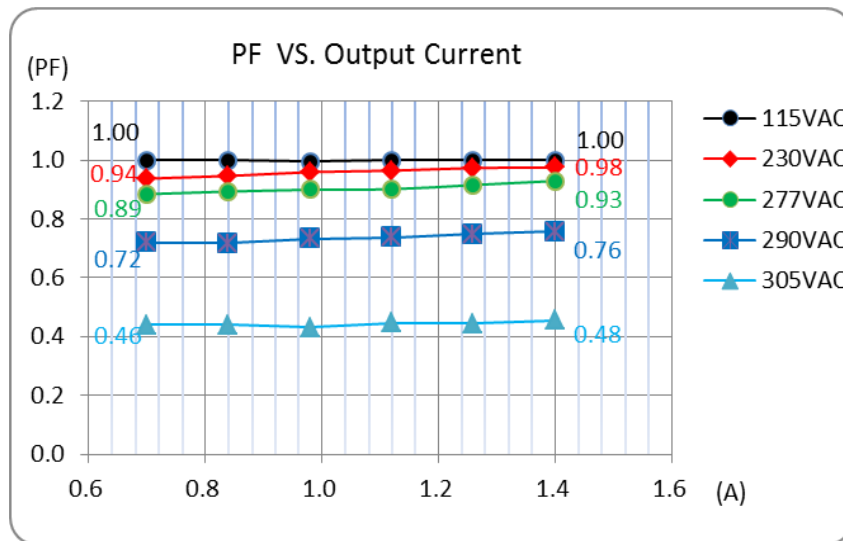
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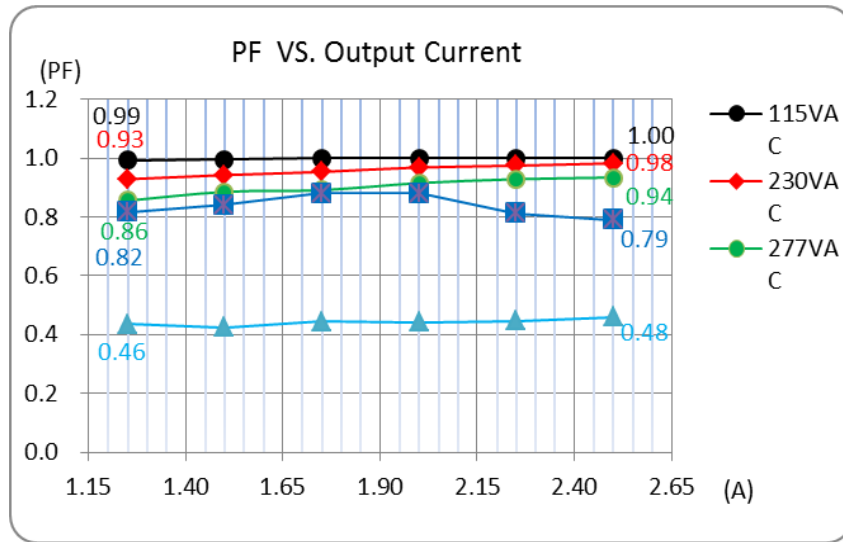
## AMEPR30-36100AZ



## AMEPR30-24140AZ

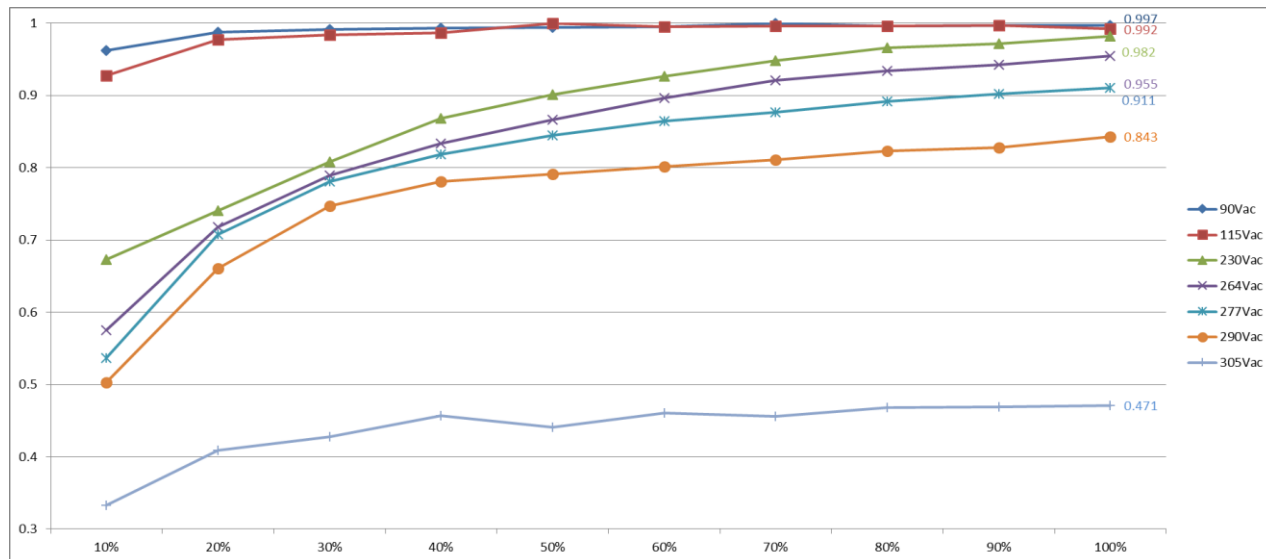


## AMEPR30-12250AZ

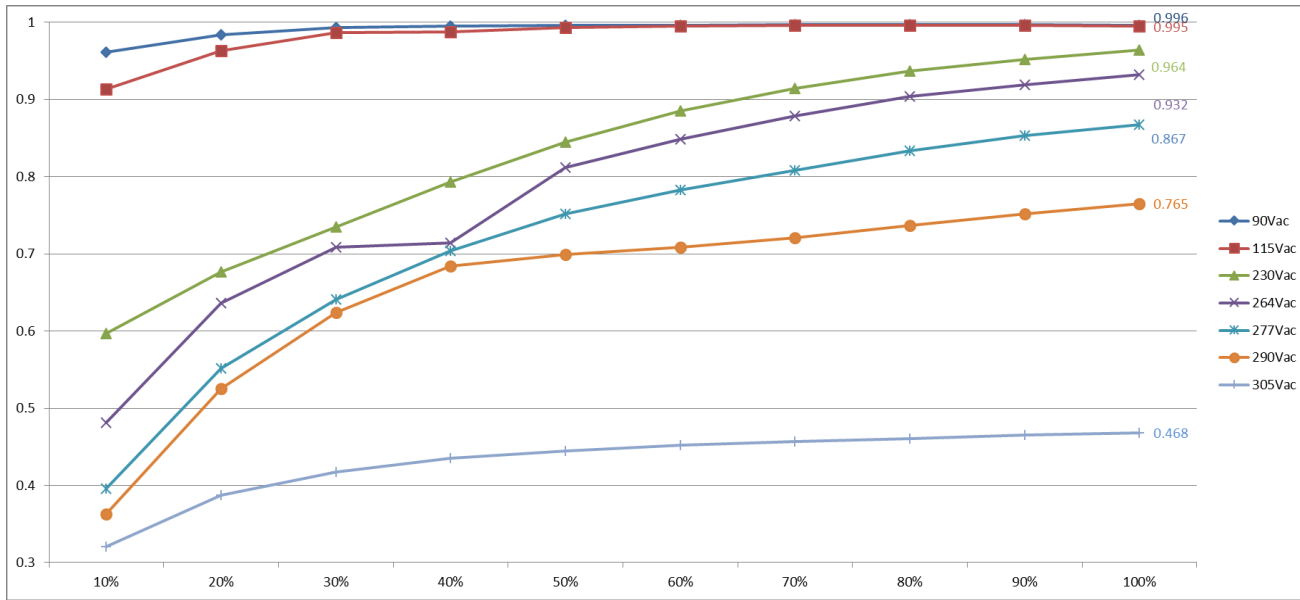


## PFC vs. Output power

### AMEPR30-5070AZ

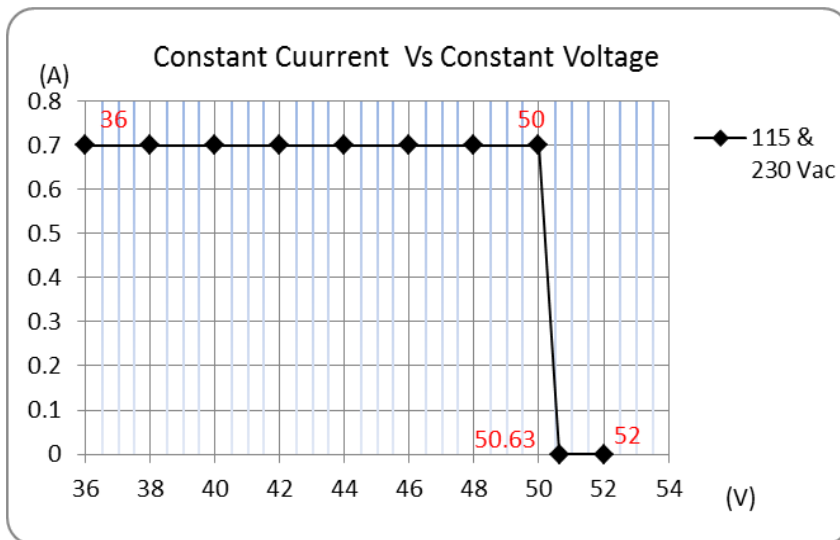


**AMEPR30-24140AZ**

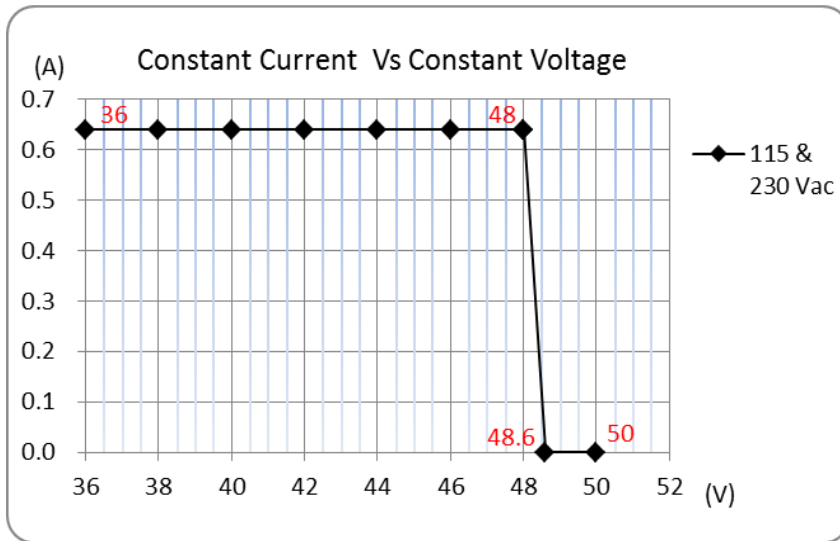


**Constant Current vs. Constant Voltage Mode**

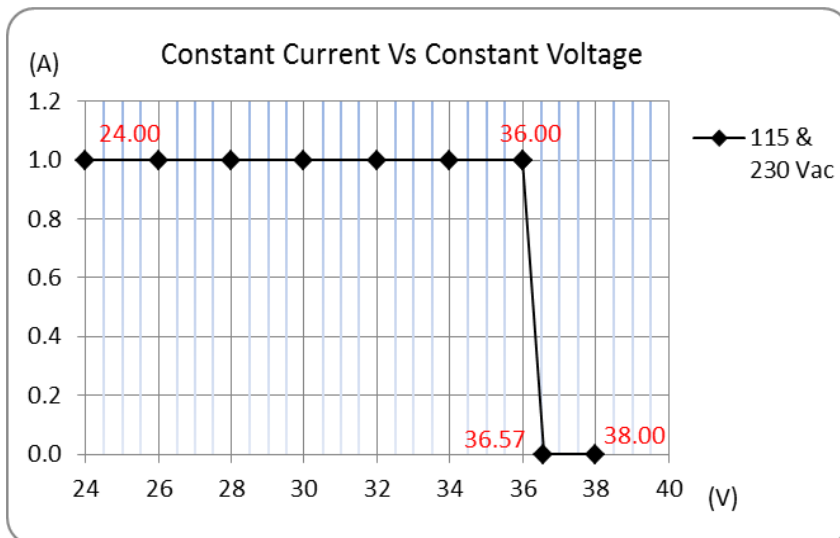
**AMEPR30-5070AZ**



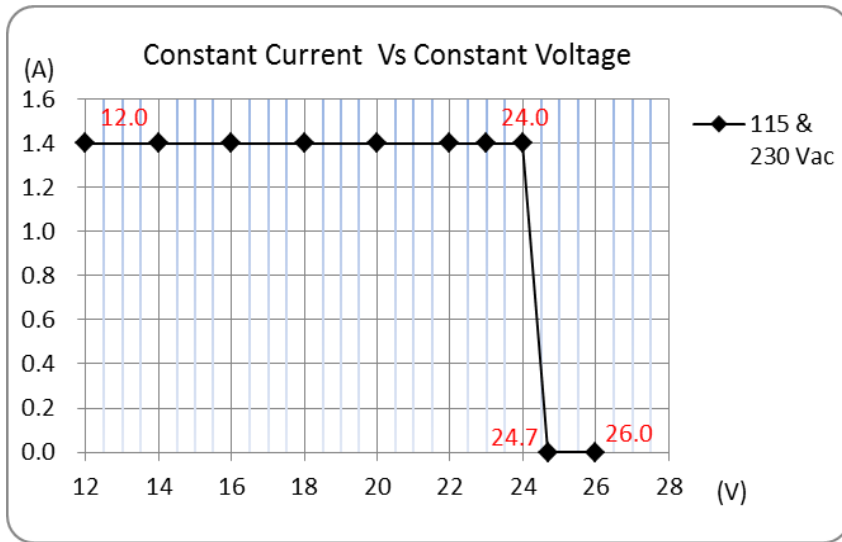
**AMEPR30-4864AZ**



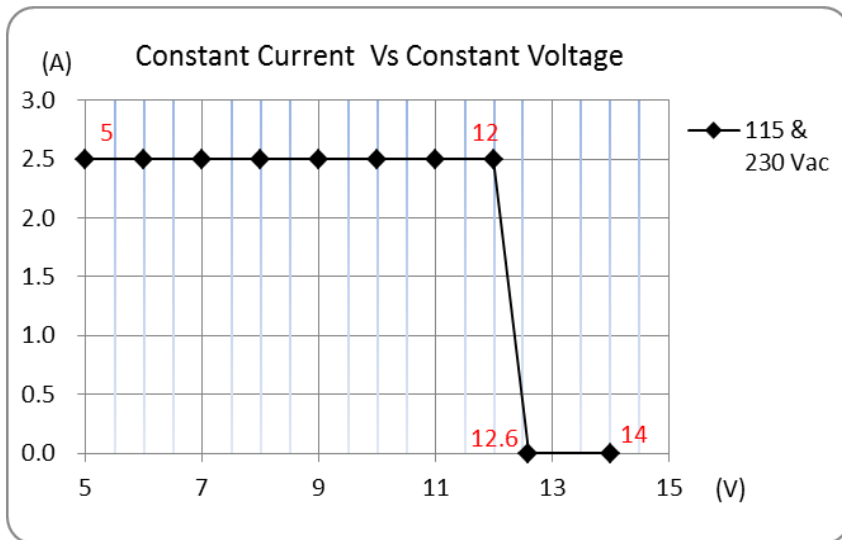
**AMEPR30-36100AZ**



AMEPR30-24140AZ

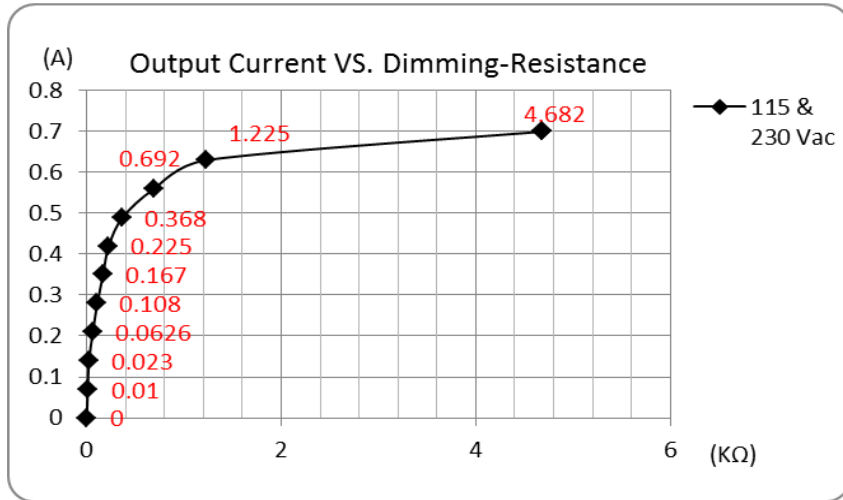


AMEPR30-12250AZ

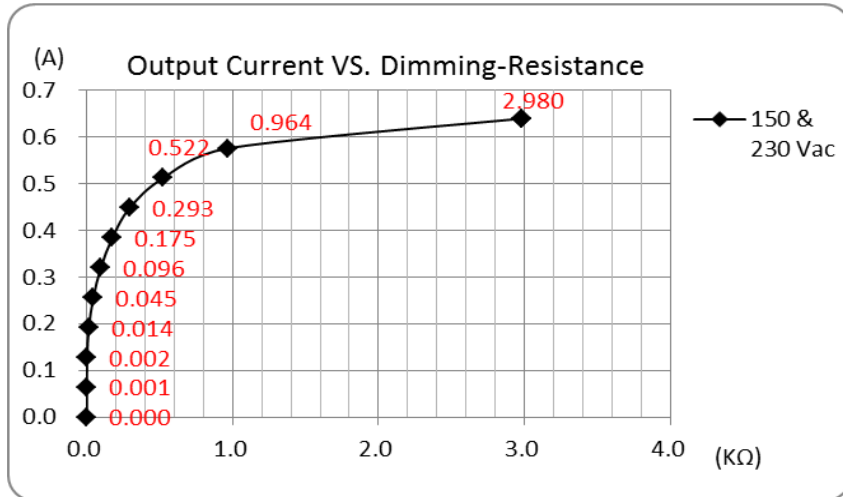


**Dimming Control (Output Current vs. Radj)**

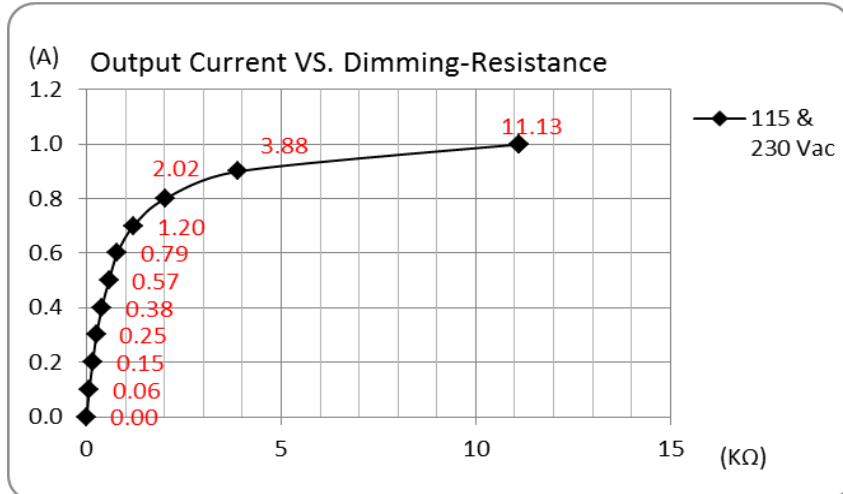
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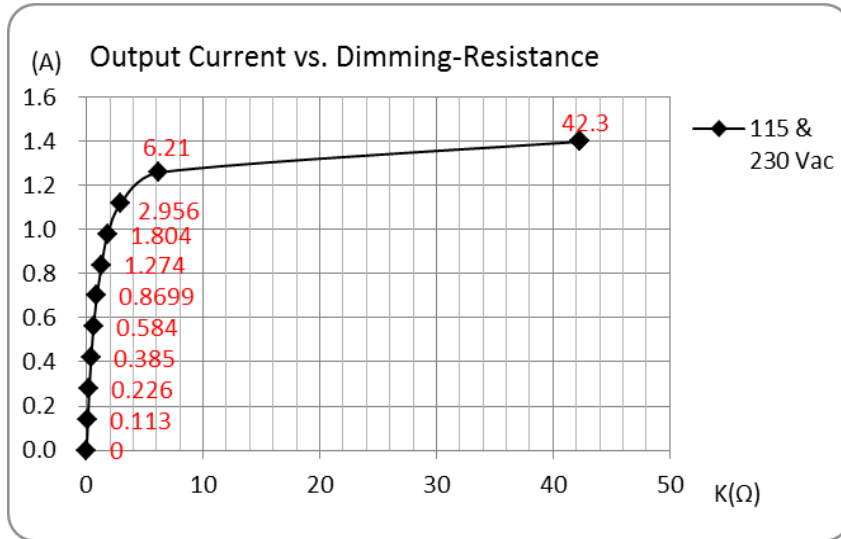
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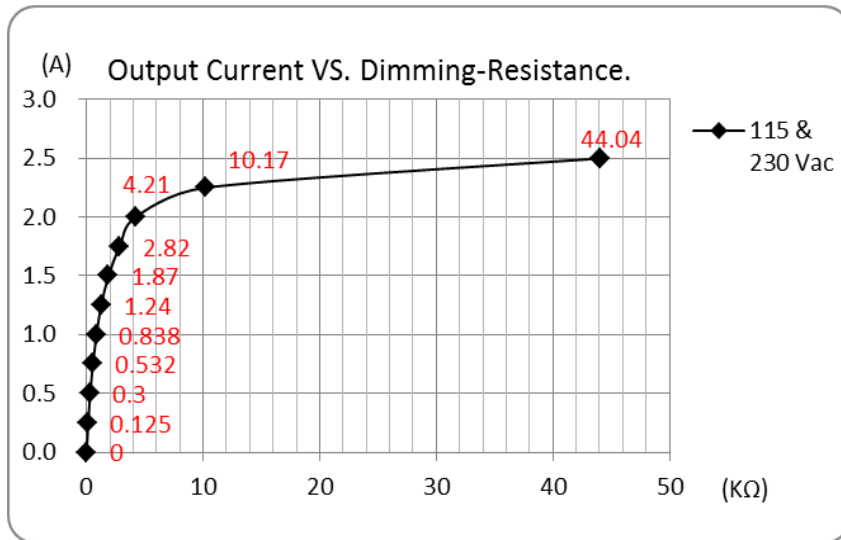
**AMEPR30-36100AZ**



**AMEPR30-24140AZ**



**AMEPR30-12250AZ**



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