

## Series AMEPR15D-AZ

up to 1A | AC-DC / DC-DC LED driver



### FEATURES:

- AC-DC or DC-DC Constant current LED Driver
- Input range 90-264VAC/47-440Hz
- High Efficiency up to 83%
- Operating temperature -20 to 80°C
- Total Harmonic Distortion < 20%
- Over Temperature Protection
- IP20 or IP67 Case
- Active PFC with TRIAC dimmable<sup>②</sup>
- SCP, Over Load Protection
- Leading or Trailing Edge Triac

### Models Single output



| Model                                 | Max Output Power (W) ① | Output Voltage Range (V) | No Load Output Voltage (V max.) | Output Current (A) | Input Voltage (VAC/Hz) | Input Voltage (VDC) | Efficiency (%) |
|---------------------------------------|------------------------|--------------------------|---------------------------------|--------------------|------------------------|---------------------|----------------|
| AMEPR15D-5030AZ <sup>+Suffix ②</sup>  | 15                     | 36-50                    | 62                              | 0.3                | 90-264/47-440          | 120-370             | 83             |
| AMEPR15D-4835AZ <sup>+Suffix ②</sup>  | 15.8                   | 30-48                    | 62                              | 0.35               | 90-264/47-440          | 120-370             | 83             |
| AMEPR15D-3650AZ <sup>+Suffix ②</sup>  | 18                     | 24-36                    | 52                              | 0.5                | 90-264/47-440          | 120-370             | 82             |
| AMEPR15D-2470AZ <sup>+Suffix ②</sup>  | 16.8                   | 12-24                    | 34                              | 0.7                | 90-264/47-440          | 120-370             | 81             |
| AMEPR15D-15100AZ <sup>+Suffix ②</sup> | 15                     | 8-15                     | 23                              | 1                  | 90-264/47-440          | 120-370             | 80             |

① Exceeding the maximum output power will permanently damage the converter

### ②Model Nomenclature for Ordering:

|                    |                                                                      |
|--------------------|----------------------------------------------------------------------|
| Add Suffix "-UD"   | Universal AC input 90-264VAC(no TRIAC dimming with this option),IP20 |
| Add Suffix "-UW"   | Universal AC input 90-264VAC(no TRIAC dimming with this option),IP67 |
| Add Suffix "-110D" | AC input 90-135VAC, IP20                                             |
| Add Suffix "-220D" | AC input 180-264VAC, IP20                                            |
| Add Suffix "-110W" | AC input 90-135VAC, IP67                                             |
| Add Suffix "-220W" | AC input 180-264VAC, IP67                                            |

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     | 10      |         | A     |
|                     | 230VAC     | 20      |         |       |
| Leakage current     | 115VAC     | 0.2     |         | mA    |
|                     | 230VAC     | 0.25    |         |       |
| AC current          | 115VAC     | 0.23    |         | A     |
|                     | 230VAC     | 0.1     |         |       |
| Power Factor        | 115VAC     |         | 0.9     |       |
|                     | 230VAC     |         | 0.9     |       |
| External fuse       |            |         | 250V/1A |       |
| Start up time       |            | 200     |         | ms    |

### Output Specifications

| Parameters           | Conditions           | Typical | Maximum | Units |
|----------------------|----------------------|---------|---------|-------|
| Current accuracy     |                      | ±5      |         | %     |
| Line regulation      | LL-HL                | ±7      |         | %     |
| Load regulation      | 0-100% load          | ±5      |         | %     |
| Ripple & Noise ③     | 20MHz Bandwidth      | 1       |         | V p-p |
| Hold-up time         |                      | 1       |         | ms    |
| Minimum Load Voltage | See the models table |         |         |       |

③ Tested with 0.1μF (M/C) or (C/C) and 47μF (E/C) parallel capacitors at the end.

## Isolation Specifications

| Parameters           | Conditions | Typical | Maximum | Units |
|----------------------|------------|---------|---------|-------|
| Tested I/O voltage   | 3sec       |         | 3000    | VAC   |
| Isolation Resistance |            | >1000   |         | MΩ    |

## General Specifications

| Parameters                  | Conditions              | Typical                                   | Maximum | Units  |
|-----------------------------|-------------------------|-------------------------------------------|---------|--------|
| Switching frequency         |                         | 65                                        |         | KHz    |
| Over load 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 | -20 to +80                                |         | °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                                   |         |        |
| Wires                       |                         | UL1015 20AWG * 10CM                       |         |        |
| Weight                      |                         | IP20 175<br>IP67 225                      |         | g      |
| Dimensions (L x H x W)      |                         | 133 x 33 x 30mm (5.24 x 1.30 x 1.18 inch) |         |        |
| MTBF                        |                         | >400,000 hrs (MIL-HDBK-217F at +25°C)     |         |        |

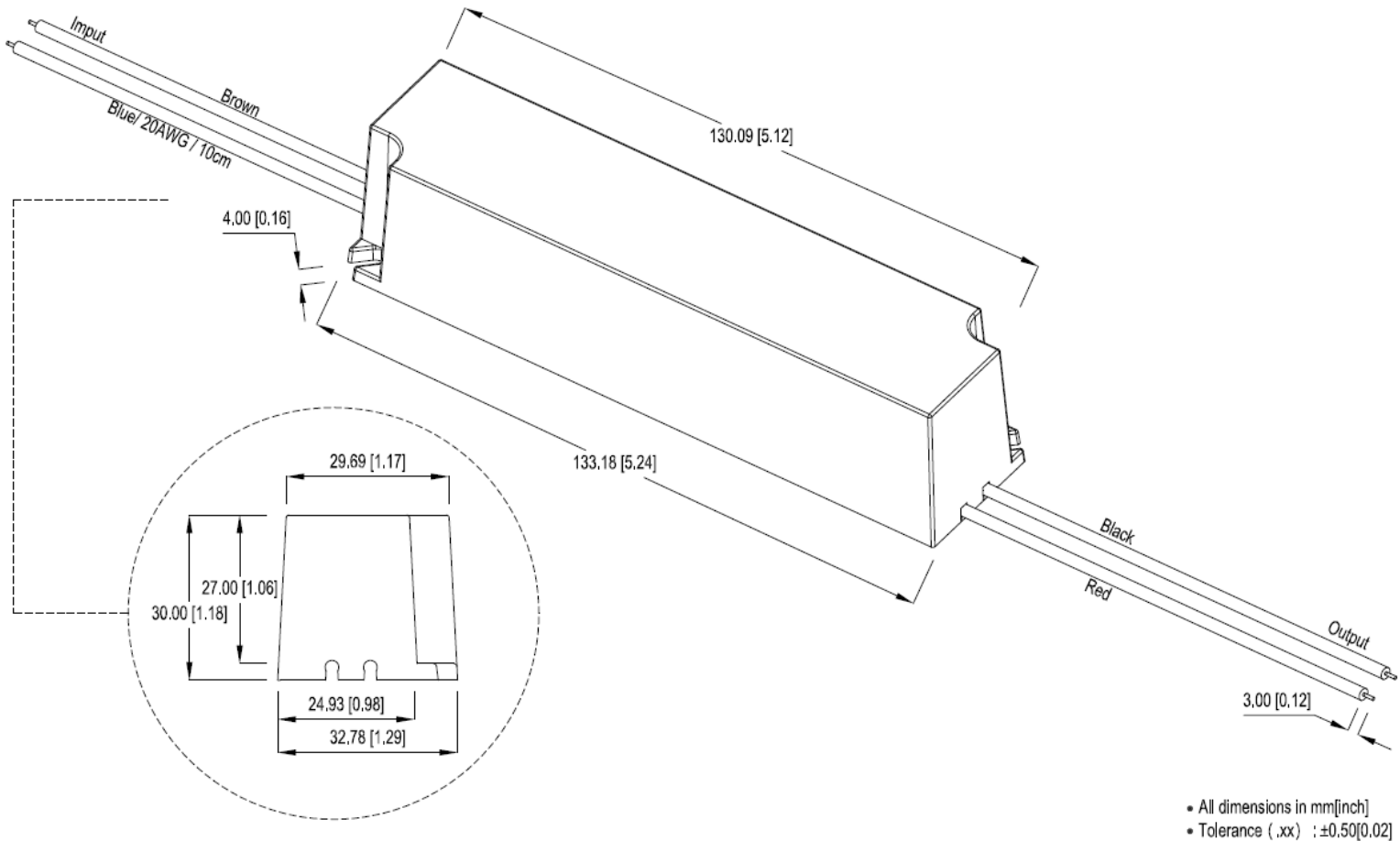
## Environment Approval

| Test      | Parameters             | Conditions                                               |
|-----------|------------------------|----------------------------------------------------------|
| Shock     | Wave form              | Half sine wave                                           |
|           | Acceleration amplitude | 5gn                                                      |
|           | Bump duration          | 30 ms                                                    |
|           | Converter operation    | Before and after test, body mounted (on chassis)         |
|           | Number of bumps        | 18 (3 in each direction for every axis)                  |
| Vibration | Test mode              | Sweep sine, 10-100Hz, speed 0.05Hz/s                     |
|           | Displacement           | 1 mm                                                     |
|           | Acceleration           | 3g, 3 loops 30min one cycle, 3h total, every axis tested |
|           | Converter operation    | Before and after test, body mounted (on chassis)         |

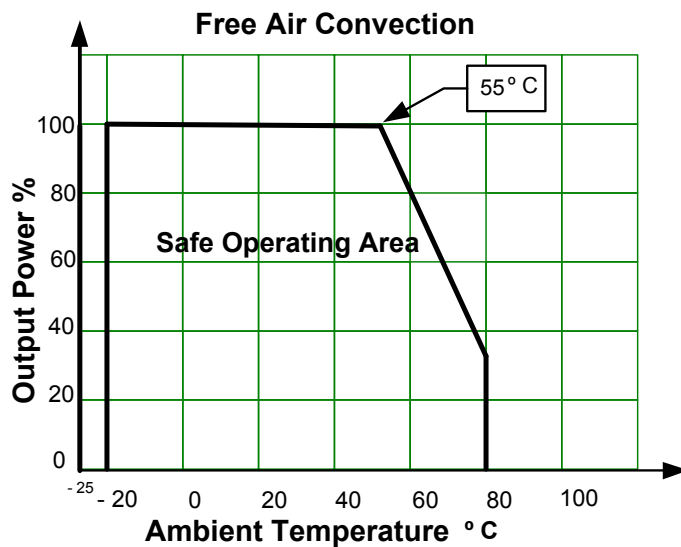
## Safety Specifications

| Parameters       |                                                                        |                                                  |
|------------------|------------------------------------------------------------------------|--------------------------------------------------|
| Agency approvals | cULus, CE, FCC                                                         |                                                  |
| Standards        | EN61347-1, EN61347-2-13, IEC62384, UL8750, UL60950-1, EN55015, EN55024 |                                                  |
| Standards        | Radiated and Conducted Emission                                        | FCC Part 15 Subpart B, Class B, ANSI C63.4 :2003 |
|                  | EMI - Conducted and radiated emission                                  | EN 55022                                         |
|                  | Harmonic Current Emissions                                             | IEC/EN 61000-3-2, (EN60555-2)                    |
|                  | 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                                   |

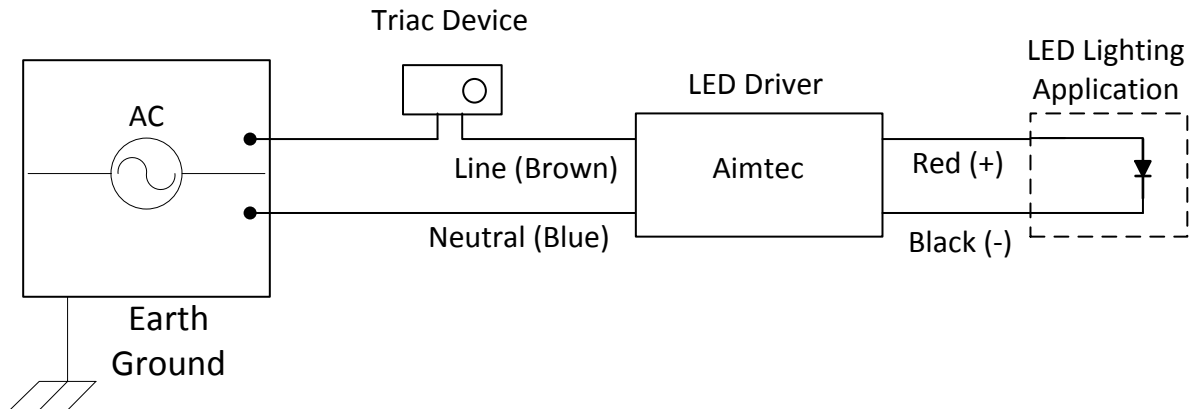
## Dimensions



## Temperature graph



## Triac Dimming Feature



### Triac Dimming Notes:

A- The triac device can be installed on either Line or Neutral  
B- Aimtec LED drivers have been designed to function with a wide range of available Triac devices, however the following list of Triac devices have been tested.

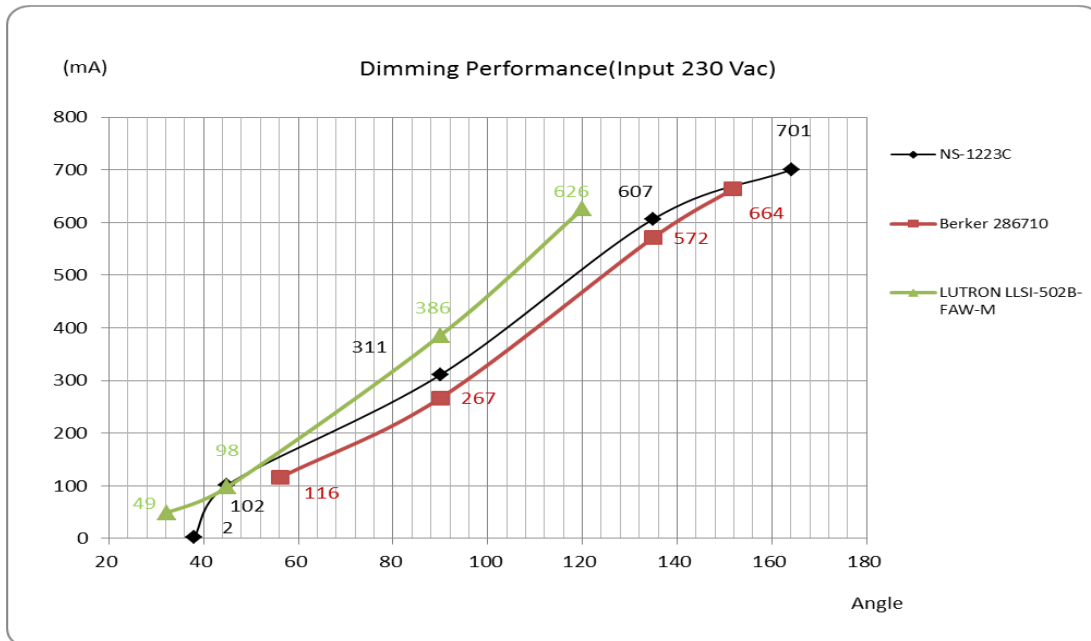
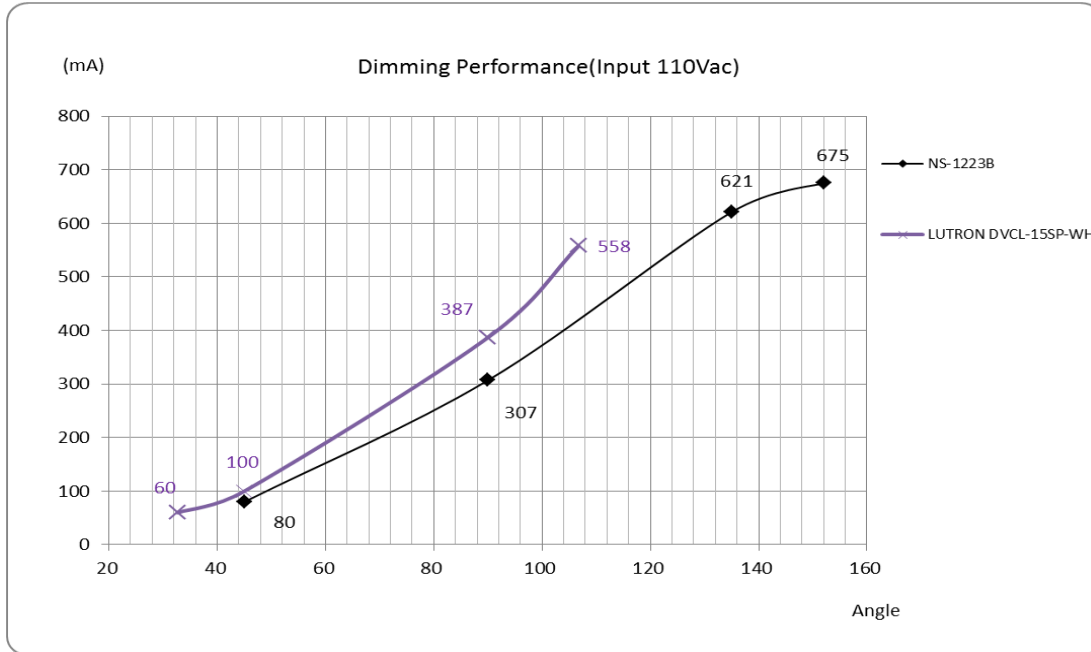
- 1) Company: LUTRON  
Series: SKYLARK  
Model: SF-10P-WH (input voltage: 120Vac)  
Model: SF-12P-277-WH (input voltage 277Vac)
- 2) Company LUTRON  
Series: DIVA  
Model: DVF-103P-WH (input voltage: 120Vac)  
Model: DVF-103P-277-WH (input voltage: 277Vac)
- 3) Company BERKER  
Model: 2867 10 (input voltage:230Vac)

If the power voltage range is 90~135Vac, triac suggested use model SF-10P-WH or DVF-103P-WH.

If the power voltage range is 180~260Vac, triac suggested use model SF-12P-277-WH or DVF-103P-277-WH.

## Triac Dimming Performance

### AMEPR15D-2470AZ



Triac dimming performance is typical as with other models, for specific details on other model performance, please see the Aimtec Triac Dimming Application note at [www.aimtec.com](http://www.aimtec.com)

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