

## Features

- 3-in-1 dimming (0-10V/PWM/Rx) + 12V AUX
- High efficiency up to 97%
- THD <15%
- Maximum output current settable via software
- Dims to off without afterglow
- Surge protection: L-N: 6kV & L/N-GND: 10kV
- Flicker free; IP54
- All-round protections: open circuit/short circuit/over temperature protection
- Suitable for Class I light fixtures



## Applications

· High pole light · stadium light · UV-LED · fish light · plant light

## Descriptions

LF-FAA1000 is a constant current LED driver featuring super-high efficiency, high PF and low THD. It has 3-in-1 dimming + 12V AUX output.

## Product Model

LF - FA A 1000



- 1000: output power: 1000W
- A: 3-in-1 dimming + 12V
- F: non-isolated design; A: serial number

## Lifud Technology Co., Ltd.

Add.: 3AF, Block B, Xingzhan Plaza, No.446, Nanhuan Rd., Shajing St., Bao'an Dist., Shenzhen, Guangdong, China

Factory I: Lifud Gardern-style Industrial Park, Tianfu New Dist., Meishan City, Sichuan, China

Factory II: Lifud Intelligent Manufacture Industrial Park, Zhichuang Rd., Banfu Town, Zhongshan, Guangdong, China

Website: [www.lifud.com](http://www.lifud.com)

Telephone: +86(0)755 8373 9299

Email: [sales@lifud.com](mailto:sales@lifud.com)

## ■ Electrical Characteristics

| Model                      |                                     |       | LF-FAA1000                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |     |     |  |
|----------------------------|-------------------------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----|--|
| Output                     | Output Current                      |       | 3000-5000mA (Default setting: 4000mA±5%)                                                                                                                                                                                                                                                                                                                                                                                                         |     |     |     |  |
|                            | Output Voltage                      |       | 180-260Vdc (LED)                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |     |     |  |
|                            | Flicker                             |       | According to IEEE Std 1789                                                                                                                                                                                                                                                                                                                                                                                                                       |     |     |     |  |
|                            | Output Power                        |       | 1000W Max. @120-277Vac                                                                                                                                                                                                                                                                                                                                                                                                                           |     |     |     |  |
|                            | Ripple Current                      |       | <3% @≤120Hz                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |     |  |
|                            | Start-up Time                       |       | 120Vac<1S @full load                                                                                                                                                                                                                                                                                                                                                                                                                             |     |     |     |  |
|                            | Linear Adjustment Rate              |       | ±5% @full load                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |     |  |
|                            | Load Adjustment Rate                |       | ±5% @full load                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |     |  |
|                            | Temperature Drift                   |       | ±3% @Tc 25-40℃                                                                                                                                                                                                                                                                                                                                                                                                                                   |     |     |     |  |
| Input                      | AC Input Voltage                    |       | 108-305Vac (rated voltage: 120-277Vac)                                                                                                                                                                                                                                                                                                                                                                                                           |     |     |     |  |
|                            | DC Input Voltage                    |       | 152-305Vdc (rated voltage: 170-276Vdc)                                                                                                                                                                                                                                                                                                                                                                                                           |     |     |     |  |
|                            | AC Rated Input Frequency            |       | 50/60Hz                                                                                                                                                                                                                                                                                                                                                                                                                                          |     |     |     |  |
|                            | Input Current                       |       | 12A max.                                                                                                                                                                                                                                                                                                                                                                                                                                         |     |     |     |  |
|                            | PF                                  |       | ≥0.95/277Vac @full load; ≥0.90/277Vac @60% of rated load                                                                                                                                                                                                                                                                                                                                                                                         |     |     |     |  |
|                            | THD                                 |       | ≤15% 120Vac&277Vac@full load                                                                                                                                                                                                                                                                                                                                                                                                                     |     |     |     |  |
|                            | Efficiency                          | Min.  | ≥93%/120Vac @full load; ≥95.5%/277Vac @250V/4000mA; ≥95%/277Vac @200V/5000mA                                                                                                                                                                                                                                                                                                                                                                     |     |     |     |  |
|                            |                                     | Typ.  | ≥94%/120Vac @full load; ≥96.5%/277Vac @250V/4000mA; ≥96%/277Vac @200V/5000mA                                                                                                                                                                                                                                                                                                                                                                     |     |     |     |  |
|                            |                                     | Max.  | /                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |     |     |  |
|                            | Inrush Current                      |       | <80A/3500uS@277Vac                                                                                                                                                                                                                                                                                                                                                                                                                               |     |     |     |  |
|                            | Leakage Current                     |       | <0.75mA @277Vac                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |     |  |
|                            | Loading Quantity on Circuit Breaker | Model | B10                                                                                                                                                                                                                                                                                                                                                                                                                                              | C10 | B16 | C16 |  |
| Quantity(pcs)              |                                     | 1     | 1                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2   | 2   |     |  |
| 12V AUX Output             | Output Voltage                      |       | +12Vdc (11-14V)                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |     |  |
|                            | Output Current                      |       | 200mA Max.                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |     |     |  |
|                            | Dynamic Load                        |       | Please make sure that it matches the LED driver.                                                                                                                                                                                                                                                                                                                                                                                                 |     |     |     |  |
|                            | Ripple Voltage                      |       | ≤1V                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |     |     |  |
| Protection Characteristics | Surge                               |       | L-N: 6kV(2Ω); L/N-PE: 10kV(12Ω); DIM+ - DIM-: 1kV; DIM+/DIM- - PE: 2kV                                                                                                                                                                                                                                                                                                                                                                           |     |     |     |  |
|                            | Open Circuit                        |       | Open-circuit voltage ≤310Vdc @120-277Vac                                                                                                                                                                                                                                                                                                                                                                                                         |     |     |     |  |
|                            | Short Circuit                       |       | Hiccup mode (auto-recovery)                                                                                                                                                                                                                                                                                                                                                                                                                      |     |     |     |  |
|                            | Over Temperature                    |       | Tc 95±5℃@The bottom of the driver needs to be padded with a radiator of 400*200*30mm or a radiator of equivalent size (reduced to 50% rated current, no flicker)                                                                                                                                                                                                                                                                                 |     |     |     |  |
|                            | Leakage (optional)                  |       | If the AC leakage current of the positive or negative pole of the output end and the light fixture to the ground is greater than 20mA, the leakage protection is triggered and the output is cut off for about 10S, and then the output is restored; if the leakage protection is triggered three times in succession, the driver will enter a self-locking protection state with no output until the input is cut off and restarted to restore. |     |     |     |  |

## ■ Electrical Characteristics

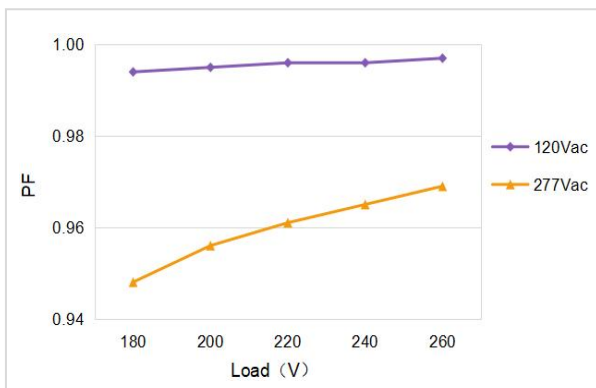
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                     |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| Environment Descriptions | Casing Temperature                                                                                                                                                                                                                                                                                                                                                                                                   | -30℃~+40℃ @120-277Vac; the bottom of the driver needs to be padded with a radiator of 400*200*30mm or a radiator of equivalent size |
|                          | Operating Humidity                                                                                                                                                                                                                                                                                                                                                                                                   | 0~95%RH (no condensation)                                                                                                           |
|                          | Storage Temperature/ Humidity                                                                                                                                                                                                                                                                                                                                                                                        | -40℃~+80℃ (6 months in Class I environment); 0~95%RH (no condensation)                                                              |
|                          | Atmospheric Pressure                                                                                                                                                                                                                                                                                                                                                                                                 | 86~106kPa                                                                                                                           |
| Safety & EMC             | Certifications                                                                                                                                                                                                                                                                                                                                                                                                       | FCC, UL                                                                                                                             |
|                          | Withstand Voltage                                                                                                                                                                                                                                                                                                                                                                                                    | L/N-PE: 1.6KVac, <5mA, 60S; L/N-DIM: 3KVac, <5mA, 60S; DIM-PE: 1.5KVac, <5mA, 60S                                                   |
|                          | Insulation Resistance                                                                                                                                                                                                                                                                                                                                                                                                | L/N-PE, L/N-DIM, DIM-PE: ≥100MΩ @500Vdc/60S/25℃/50%RH                                                                               |
|                          | Ground Resistance                                                                                                                                                                                                                                                                                                                                                                                                    | ≤0.1Ω @25A/60S                                                                                                                      |
|                          | Safety Standards                                                                                                                                                                                                                                                                                                                                                                                                     | UL 8750 CSA C22.2 no.250.13                                                                                                         |
|                          | EMI                                                                                                                                                                                                                                                                                                                                                                                                                  | FCC: PART 15 CLASS B @120Vac<br>FCC: PART 15 CLASS A @277Vac                                                                        |
|                          | EMS                                                                                                                                                                                                                                                                                                                                                                                                                  | According to IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12                                                                                    |
|                          | Ringing Wave                                                                                                                                                                                                                                                                                                                                                                                                         | 6kV                                                                                                                                 |
|                          | ESD                                                                                                                                                                                                                                                                                                                                                                                                                  | Air 8kV, touch 4kV                                                                                                                  |
| Other Parameters         | IP Rating                                                                                                                                                                                                                                                                                                                                                                                                            | IP54                                                                                                                                |
|                          | RoHS                                                                                                                                                                                                                                                                                                                                                                                                                 | RoHS 2.0 (EU) 2015/863                                                                                                              |
|                          | Warranty                                                                                                                                                                                                                                                                                                                                                                                                             | 5 years (Tc≤80℃)                                                                                                                    |
|                          | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                 | >1000Khours@Telcordia SR-332 Issue4                                                                                                 |
| Test Equipment           | Digital power meter: CHROMA66202, digital power driver: CHROMA66205, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber; lightning surge generator: Everfine EMS61000-5B; fast transient generator: Everfine EMS61000-4A, spectroanalyzer: KH3935, Hi-pot tester: EEC SE7440, flicker tester (flicker-free coefficient test): Everfine LFA-3000, etc. |                                                                                                                                     |
| Test Remark              | If there are no special remarks, the above parameters are tested at the ambient temperature of 25℃, humidity of 50%, maximum output power and input voltage of 277Vac.                                                                                                                                                                                                                                               |                                                                                                                                     |

## ■ Electrical Characteristics

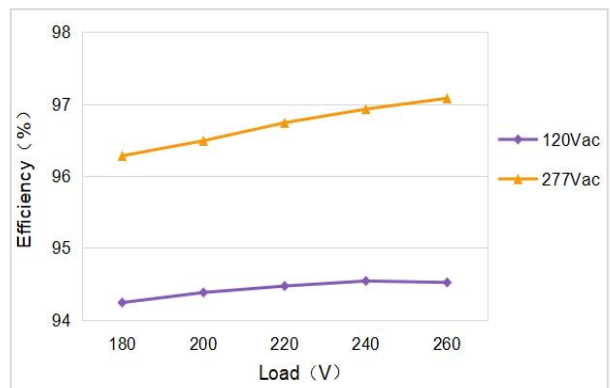
|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Additional Remarks</b></p> | <ol style="list-style-type: none"> <li>1. It is recommended that user install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety.</li> <li>2. The PC cover, casing and end cap for assembling the LED driver in the light fixture must meet the fire rating of UL94-V0 or above.</li> <li>3. The LED driver used in combination with the end device is one of the accessories of the whole light fixture, and the EMC of the whole light fixture is not only susceptible to the driver itself, but to the LED light fixture and the whole light fixture's wiring. Thus, the manufacturer of LED light fixture should re-confirm the EMC of the whole light fixture before the whole light fixture is finished.</li> <li>4. When using the LED driver, please pay attention that the total output power should not exceed the maximum rated output power, otherwise the warranty service of LED driver would be failed.</li> <li>5. When conducting withstanding voltage test on LED driver, please short-circuit the input wire L and N; the positive electrode and negative electrode of the output wire; the positive electrode and negative electrode of the dimming wire and AUX power supply.</li> <li>6. Please fully inspect the withstanding voltage ability of LEDs and aluminum substrates and the value shall be &gt;2.5kVac.</li> </ol> |
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## ■ Product Characteristic Curves

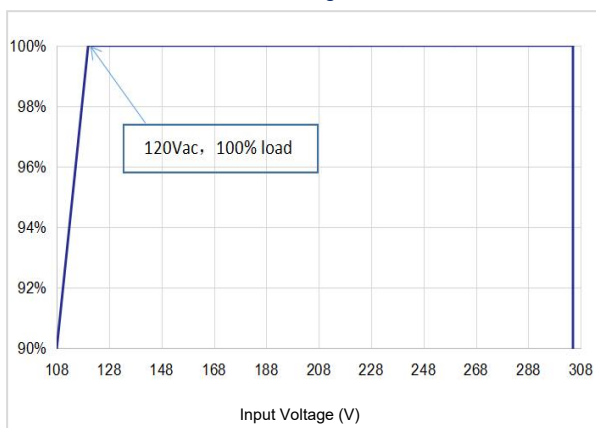
PF Curve



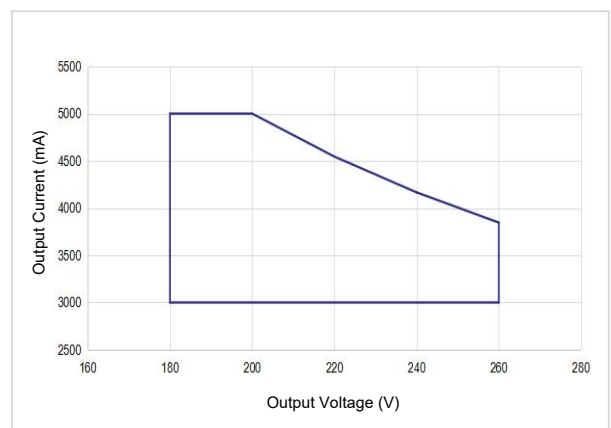
Efficiency Curve



Load Derating Curve



Power Curve



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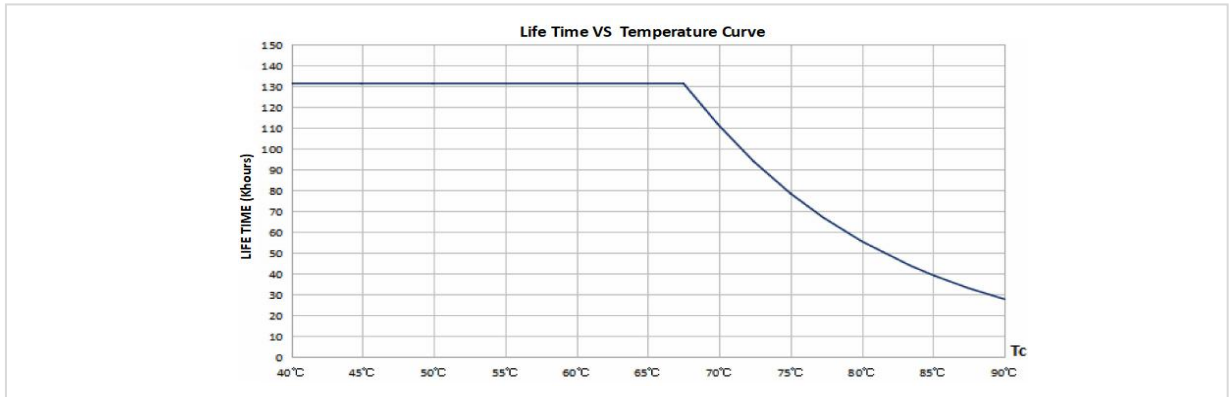
Website: [www.lifud.com](http://www.lifud.com)

Telephone: +86(0)755 8373 9299

Email: [sales@lifud.com](mailto:sales@lifud.com)

## ■ Product Characteristic Curves

Lifetime Curve



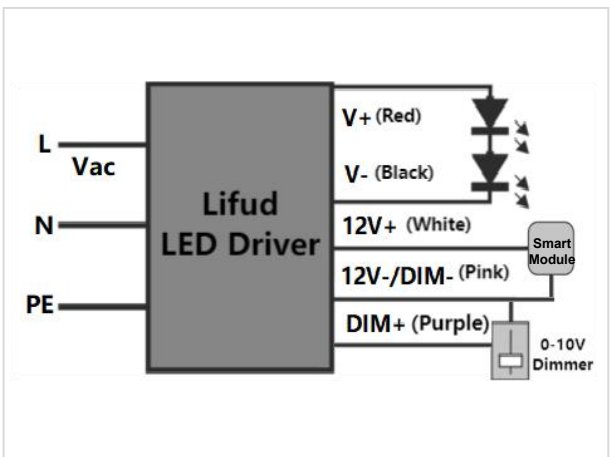
Note: Input: 120Vac/60Hz; output: 200Vdc/5000mA (This chart is only for reference).

## ■ Dimming Operation Instructions

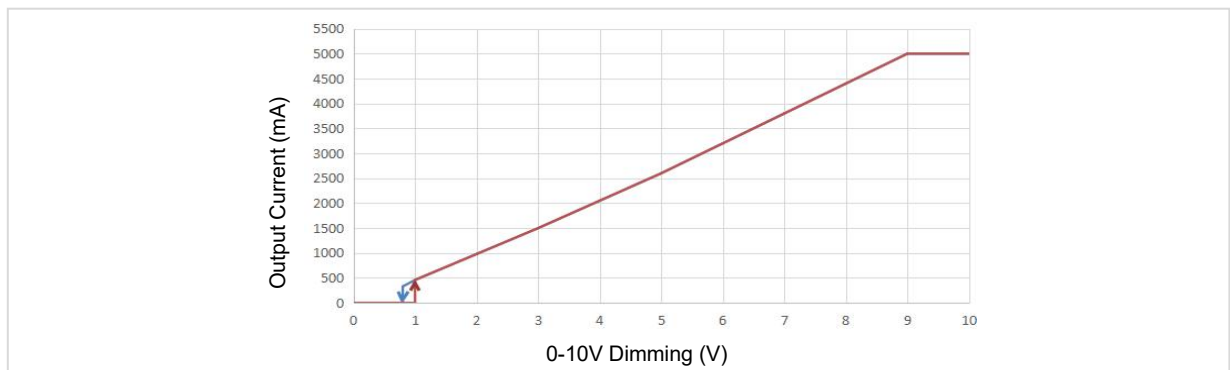
0-10V Dimming Operations

- Connect 0-10V signal to DIM terminal.
- In 0-10V dimming mode, when the input voltage is  $0.8V \pm 0.15$ , the light turns off; when it's  $1.0V \pm 0.15$ , the light turns on.
- Dimming depth: 10% (typical value), the maximum value <13%
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of 0-10V Dimming



Dimming Curve



Input: 120Vac; output: 200Vdc/5000mA (this data is measured by Lifud 0-10V dimmer and the chart is for reference only)

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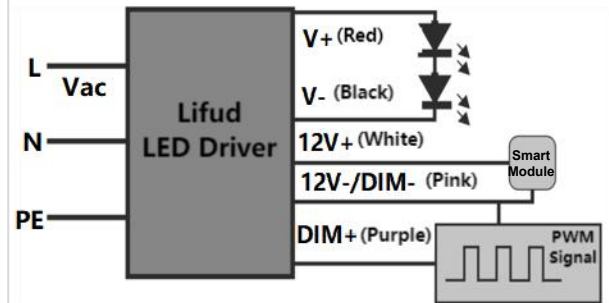
Email: [sales@lifud.com](mailto:sales@lifud.com)

## ■ Dimming Operation Instructions

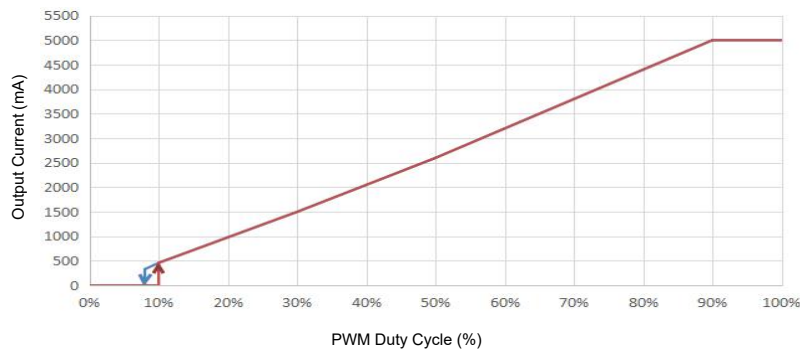
### PWM Dimming Operations

- Connect PWM signal to DIM terminal.
- Dimming depth: 10% (typical value), the maximum value <13%
- Compatible signal range: 1000-3000(Hz), amplitude: 9-10(V)
- DIM+/- (without signal connected): 100% rated current

### Wiring Diagram of PWM Dimming



### Dimming Curve

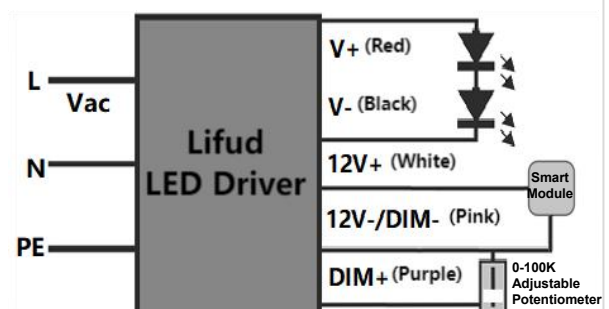


Input: 120Vac; output: 200Vdc/5000mA  
(this data is measured by PWM signal generator Tektronix and the chart is for reference only)

### Rx Dimming Operations

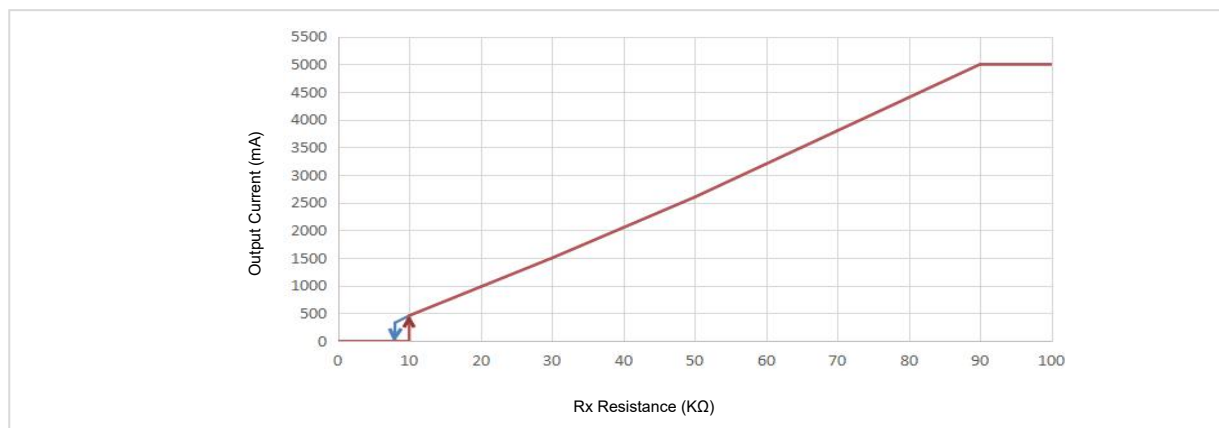
- Connect Rx signal to DIM terminal.
- Dimming depth: 10% (typical value), the maximum value <13%
- Range: 0-100KΩ
- DIM+/- (without signal connected): 100% rated current

### Wiring Diagram of Rx Dimming



## ■ Dimming Operation Instructions

### Dimming Curve



Input: 120Vac; output: 200Vdc/5000mA (this data is measured by resistance dimmer and the chart is for reference only)

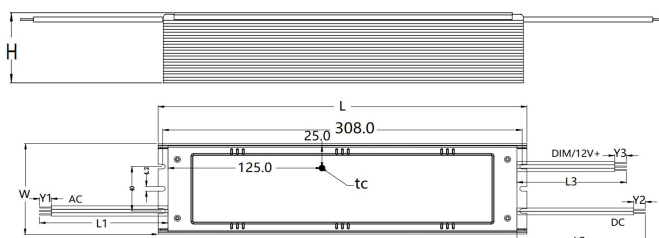
### ■ Structure & Dimensions (unit: mm; tolerance: $\pm 0.5$ mm)

## Wire Specifications

| Type   | Input Wire                                                | Output Wire                                               | Dimming Wire & AUX Output Wire                            |
|--------|-----------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------|
| FAA    | PVC Electronic Wire<br>UL1015 16AWG $\Phi 3.1 \pm 0.5$ mm | PVC Electronic Wire<br>UL1015 18AWG $\Phi 2.8 \pm 0.5$ mm | PVC Electronic Wire<br>UL1015 22AWG $\Phi 2.3 \pm 0.5$ mm |
| Color  | AC-L Black; AC-N White;<br>PE Green                       | LED+ Red; LED- Black                                      | DIM+ Purple; DIM- Pink;<br>12V+ White                     |
| Length | $250 \pm 20$ mm (L1)                                      | $300 \pm 20$ mm (L2)                                      | $250^{+30}_{-20}$ mm (L3)                                 |
| Tinned | $10 \pm 1.5$ mm (Y1)                                      | $10 \pm 1.5$ mm (Y2)                                      | $10 \pm 1.5$ mm (Y3)                                      |

## Casing Dimensions

| Description | Symbol | Unit (mm) |
|-------------|--------|-----------|
| Length      | L      | 316       |
| Width       | W      | 81.5      |
| Height      | H      | 41.3      |



Tc point is on the top casing

## ■ Packaging Specifications

| Model       | LF-FAA1000                           |
|-------------|--------------------------------------|
| Carton Size | 460*359*125 mm (L*W*H)               |
| Quantity    | 3 pcs/layer; 2 layers/ctn; 6 pcs/ctn |
| Weight      | 1.995±0.1 kg/pc; 13.45±1.0 kg/ctn    |

## ■ Transportation & Storage

### 1. Transportation

- Suitable transportation means: vehicles, boats and aeroplanes.
- In transit, it is necessary to prepare awnings for rain or sun protection. Moreover, please keep civilized loading and unloading to prevent the vibration or impact on LED driver as much as possible.

### 2. Storage

- The storage of LED driver shall conform to the standard of Class I environment. When using LED drivers which have been stored for more than 6 months, please re-test them firstly. Do not use them unless they are tested to be qualified.

## Cautions

- Please use Lifud LED driver according to its parameters in the specification, otherwise the LED driver may malfunction.
- Using any incompatible light fixtures or those that have not been certified may cause fire, explosion or other risks.
- Man-made damage is beyond the scope of Lifud warranty service.

Remark: Lifud Technology Co., Ltd. reserves the right to interpret any content of this specification.