

SPECIFICATION

FD-400T series waterproof power supply

Product Name: FD-400T-XXXX

Summarize: 400W LED Driver

Version: V00

Release date: 2022-03-26

Customer ID : _____

Customer Model : _____

Products Code : _____

Sample Model : _____

Version : _____

| GNATURE AND SEAL BY US | | |
|------------------------|--------------|-------------|
| Date: | 2022/03/26 | |
| Prepared By | Checked By | Approved By |
| QiAi Liu | Zhuanhong Wu | Jafei Lin |

| | | |
|--|----|-------|
| Please confirm and send it back with signature within 7 days. Otherwise we will assume your acceptance. And if any quality dissent, there will be an executor according to this product specification. | | |
| CUSTOMER APPROVED SIGNATURE | | |
| Customer Model No: | | |
| Date: | | |
| ENG | QA | OTHER |
| | | |
| | | |

Feature:



- ◆ IP65
- ◆ Max output power 400W.
- ◆ Constant current design.
- ◆ 3 in 1 dimming mode:0-10V,PWM,RX
- ◆ Smoothly dimming(0-100%),can dim to off.
- ◆ CE UL FCC Certified
- ◆ Surge protection :Differential mode:6KV.Common mode:6KV
- ◆ PROTECTION: Short Circuit, Open Circuit
- ◆ Auxiliary output 12V/200mA .
- ◆ Dimming signal is isolated from LED output.



Application:

Street lights、 High bay lights

Introduction

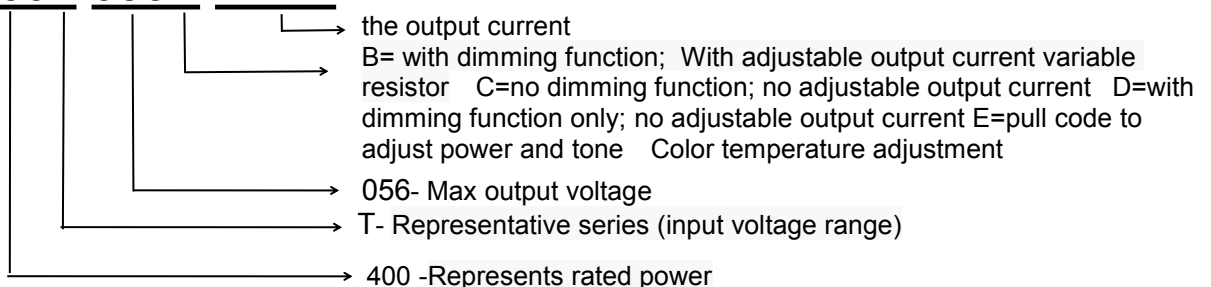
The document details the electrical, mechanical and environmental specifications of a 400W constant current LED driver with 0-10V Dimming. This LED driver is only suitable for LED load.

Model and Key parameters Table 1

| Model | power (W) | Output voltage (V) | Max output voltage(Vdc) | output current (A) | Efficiency(%) @120V | Efficiency(%) @347V |
|--------------------|-----------|--------------------|-------------------------|--------------------|---------------------|---------------------|
| FD-400T-056*/B/C/D | 400 | 27-56 | 58 | 4.0-9.0 | 90 | 92 |

Model code naming rules

FD-400T-056B-XXXX



■ Technical data

| Input characteristics | |
|-----------------------------------|---|
| Input Voltage | 100-347Vac |
| Input Frequency | 50/60Hz |
| Input Current (Typ.) | 4.5A @100-347 Vac , 100% load |
| No load Voltage | 2.5Wmax |
| Inrush Current | 75Amax. @ 347Vac, 25°C |
| Power factor (Typ.) | PF>0.90 @ 100Vac, PF>0.90 @ 347Vac, 100% load, see chart 2 |
| THD | THD<20% @ 100-347 Vac, 100% load see chart 3 |
| Output characteristics | |
| Current accuracy | ± 5% |
| Efficiency | ≥90% @ 120 Vac, ≥92% @ 347Vac, see chart 1 |
| Output Voltage | Table 1 |
| Ripple and Noise | 270mVp-p |
| Line Regulation | 3% |
| Load Regulation | 3% |
| Turn On Delay Time | Under normal conditions, the maximum delay time is 1 second |
| Programmed current | |
| Programmable current output range | the total output power does not exceed 400W (actual output voltage * actual output current = power), otherwise, it can not be guaranteed. |
| Protection functions | |
| Open circuit | When the LED disconnection the product is protected such as hiccup or when it is at the highest point of output voltage, the power supply shall be self-recovery when the fault condition is removed. |
| Short Circuit | The input power shall decrease when the output rail short, the power supply shall be self-recovery when the fault condition is removed. |
| Environmental conditions | |
| Operating Temperature | -40°C - +50°C |
| Operating Relative Humidity | 10% to 90% RH, non-condensing |
| Storage Temperature | -40°C to +75°C |
| Storage Relative Humidity | 10% to 90%RH, non-condensing (Sea level to 2,000 m) |
| Vibration | 10 to 500HZ Sweep at constant acceleration of 1.0G (depth: 3.5mm)for 1 Hour for each of the perpendicular axes X, Y, Z. |
| Degrees of Protection | IP65 |
| Safety compliance | |
| Dielectric Strength | P-S:3750VAC/5mA/60S P-E:1500VAC/5mA/60S S-E:500VAC/5mA/60S |

| | |
|---|---|
| Insulation Resistance | I/P-O/P:>50M Ohms / 500VDC / 25°C / 70% RH. |
| Leakage Current | The leakage current shall be less than 0.25mA for Class 2 at maximum input voltage |
| Safety Standard | UL:UL8750, CSA 250.13 |
| EMI | FCC: PART 15B Subpart B; ANSI C63.4:2014 |
| EMS | CE-EMC/RCM: EN61000-4-2,3,4,5,6,11 CCC:GB/T17626.2,3,4,5,6,11 |
| ESD | Electrostatic discharge/immunity Severity Level Level3 air discharge: ±8KV Severity Level Level2 contact discharge: ±4KV performance criterion: B |
| RF | 80-1000MHZ; Severity Level Level2/ 3V/M; Performance Criterion: A |
| Group pulse | 1.0KV (Class B) |
| Surge Immunity | Severity Level Level2 Differential mode:6KV Severity Level Level3 Common mode:6KV. performance criterion: B |
| Reliability | |
| Life Time | ≥5Years H@347Vac, 100% load. See lifetime vs. Tc curve for the details |
| MTBF | ≥ 200,000H@ 25°C,347Vac, 80% load. (MIL-HDBK-217F) |
| Warranty | 5 years |
| Others | |
| Dimensions | 250*84*41mm (L*W*H) 不含线材 |
| Weight | 1500+/-10g |
| Remark | |
| <p>1、 It is recommended that customers install the over-voltage and under-voltage protection and surge protection devices in the lamp power supply circuit to ensure the safety of electricity consumption.</p> <p>2、 The led driver,as a part of the whole lamp is used in combination with the terminal equipment . As EMC performance is affected by LED lamps and wiring, terminal equipment manufactured supplier needs to re-confirm the EMC of the whole set of equipment.</p> <p>3、 Please use a special programmer to adjust the current of the power supply and write the program by adjusting the light .</p> <p>4、 When adjusting the output current of the led driver, ensuring that the total output power does not exceed the rated maximum power.</p> <p>5、 The parameters above including the power factor, THD and efficiency are all tested under the condition of environment temperature 25°C , humidity 50%, AC input 230V and 90% output load.</p> | |

■ Dimming function

| Dimming type | parameter | Min | Typ | Max | Remarks |
|--------------------|------------------|-------|-------|-------|---------------------------|
| 0-10V 1-10V | Signal Level | 0V | | 10V | |
| | Dim Range | 10% | | 100% | Output current percentage |
| | Dim-off Level | 0.6V | 0.7V | 0.8V | |
| | On Level | 0.75V | 0.85V | 0.95V | |
| PWM | Signal Level | 0V | | 10V | |
| | Signal Frequency | 1KHz | | 2KHz | |
| | duty ratio | 5% | | 100% | |
| Resistance dimming | resistance value | 10kΩ | | 100kΩ | |
| | Dimming range | 10% | | 100% | Output current percentage |

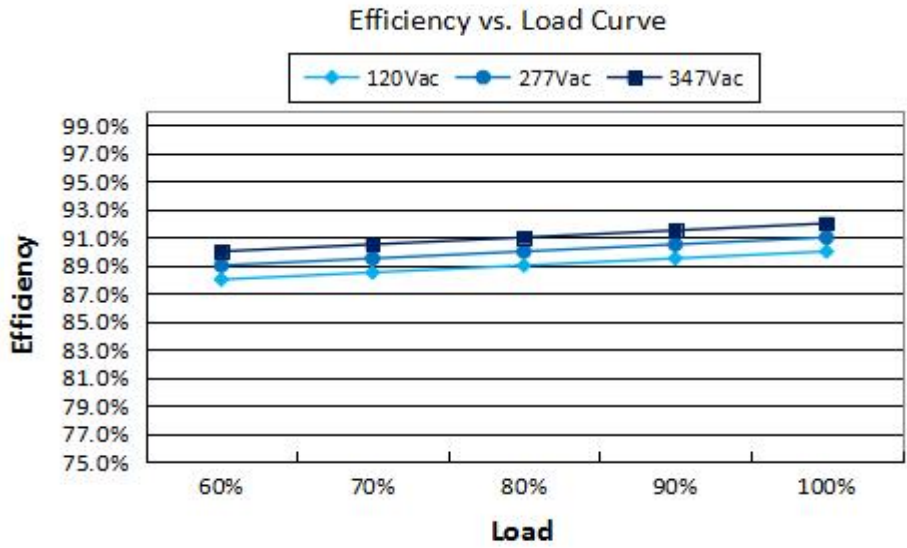
■ Dimming range

| Function | | | 0-10V | | | | PWM | | | RX | | | |
|-----------|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|------|--|
| Yes Or No | | | Y | | | | Y | | | Y | | | |
| 0-10V | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | open | |
| Ir | 0 | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 100% | |
| PWM | 0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | open | |
| Ir | 0 | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 100% | |
| RX | 0Ω | 10K Ω | 20K Ω | 30K Ω | 40K Ω | 50K Ω | 60K Ω | 70K Ω | 80K Ω | 90K Ω | 100K Ω | open | |
| Ir | 0 | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 100% | |

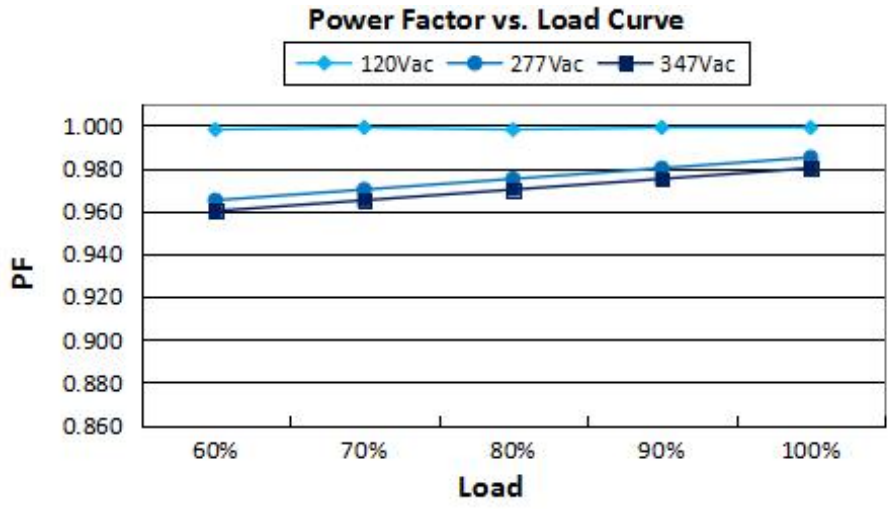
Note:

1. it is the output current percentages.
2. it is the typical datas.

■ Efficiency vs. Load

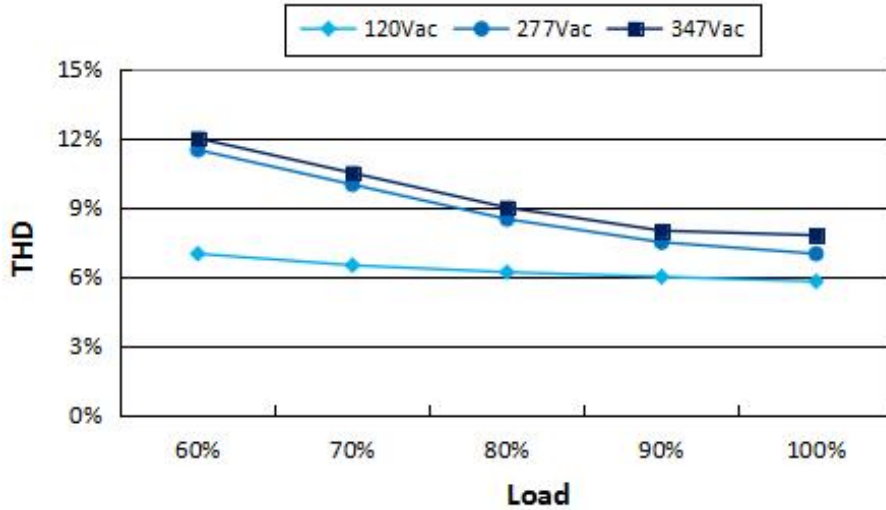


■ Power Factor

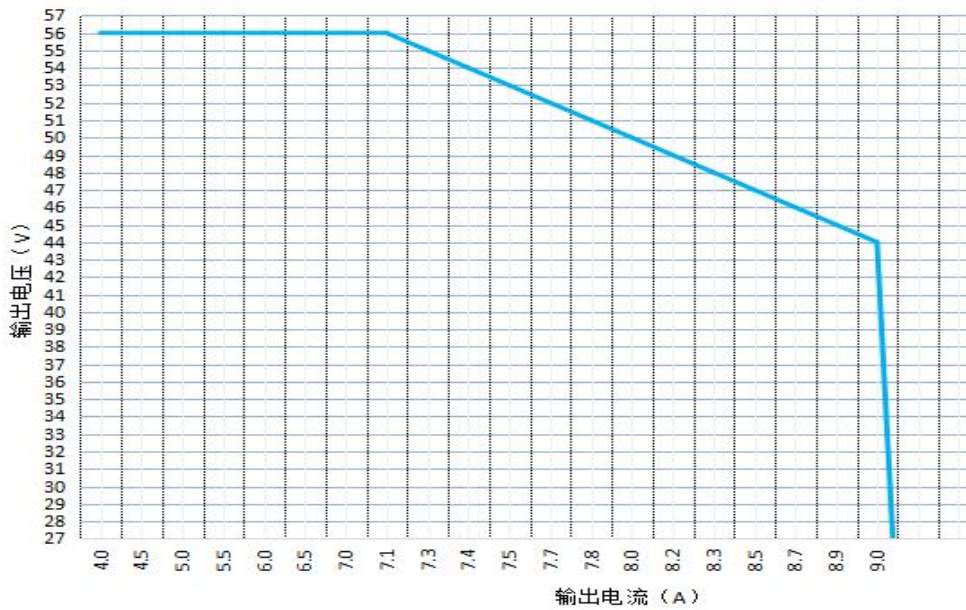


■ THD vs. Load

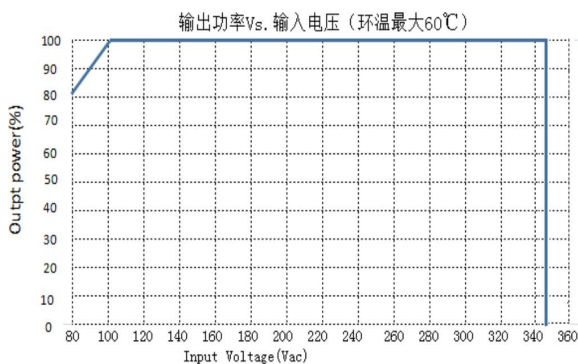
THD vs. Load Curve



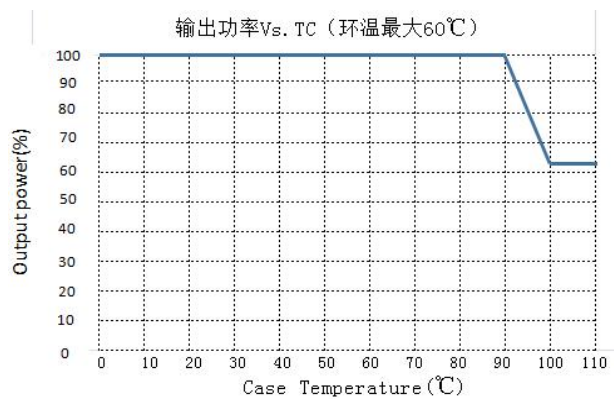
■ Power Curve



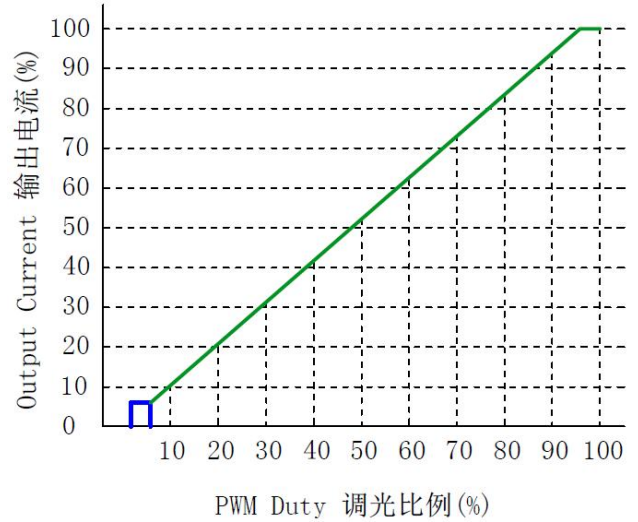
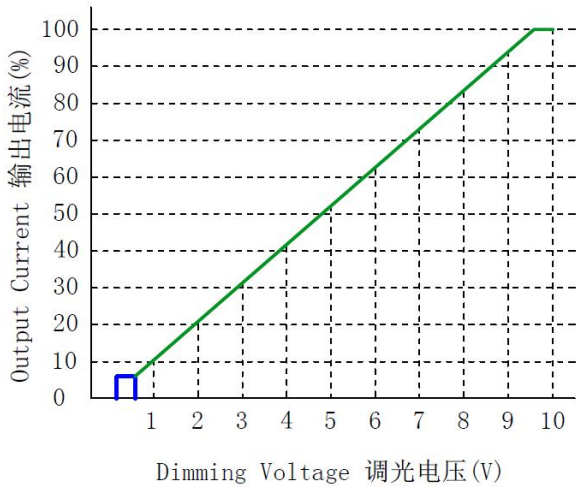
Output power VS Input voltage(60° C max.)



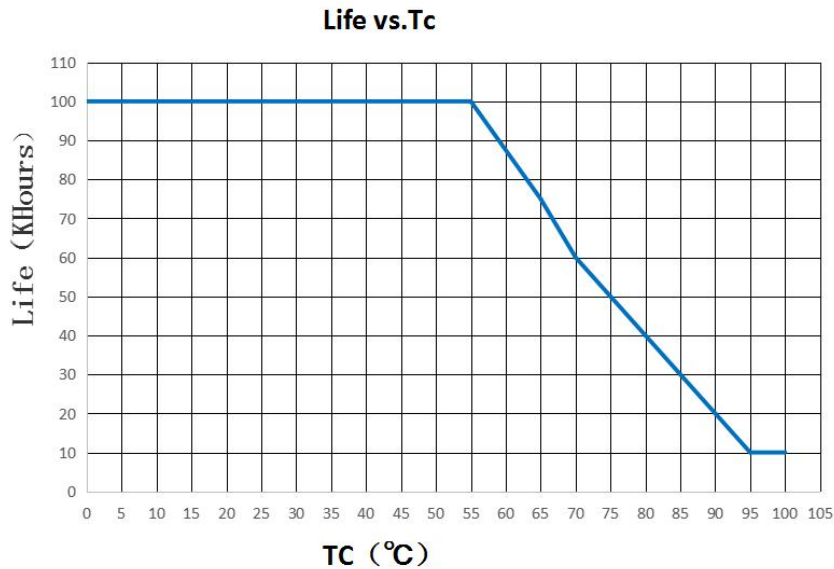
Output power VS Shell temperature



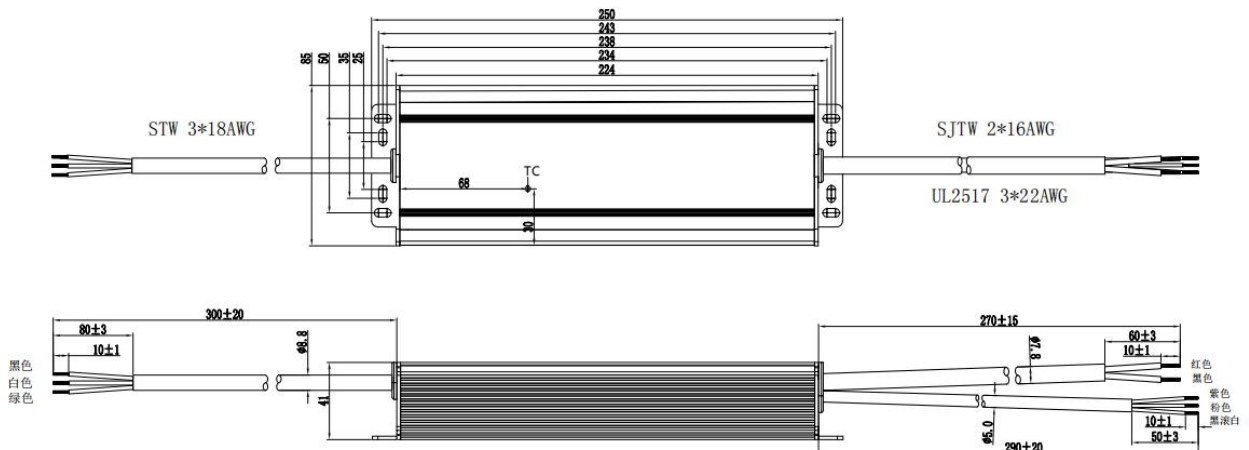
■ Dimming curve



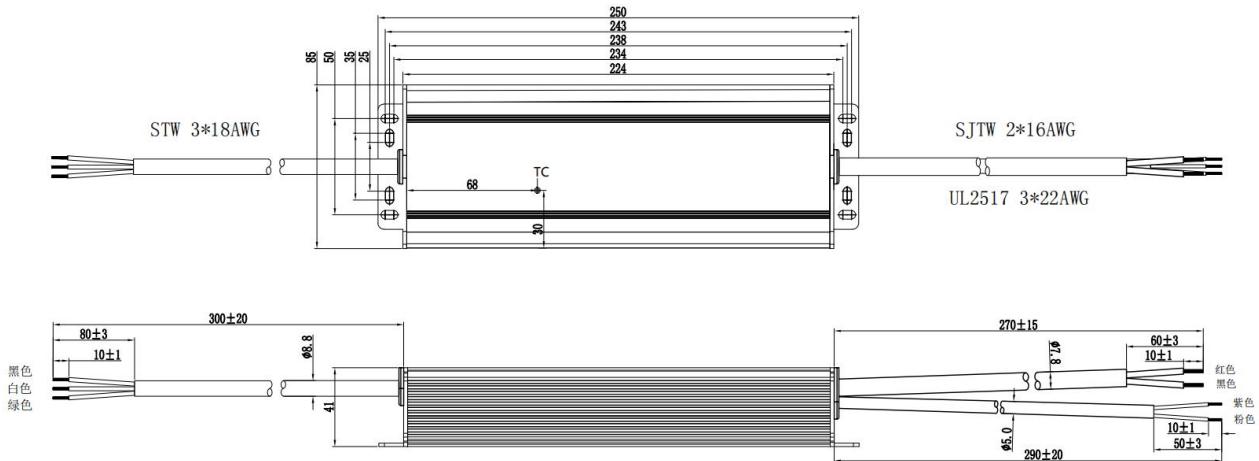
Life vs. Tc P5



Dimensional Drawing (unit: mm)12V

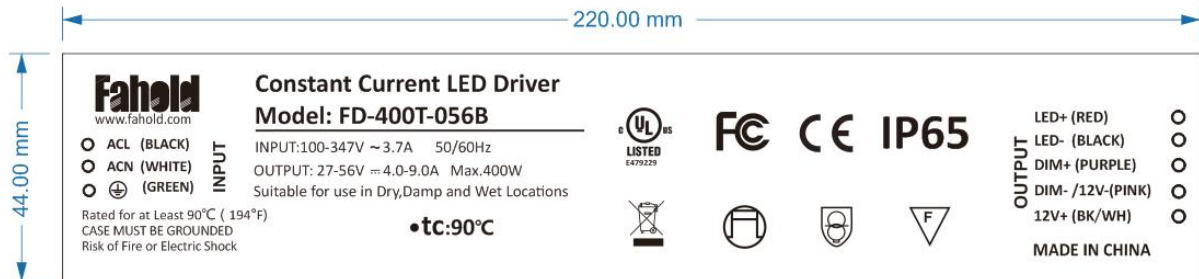


Dimensional Drawing (unit: mm)

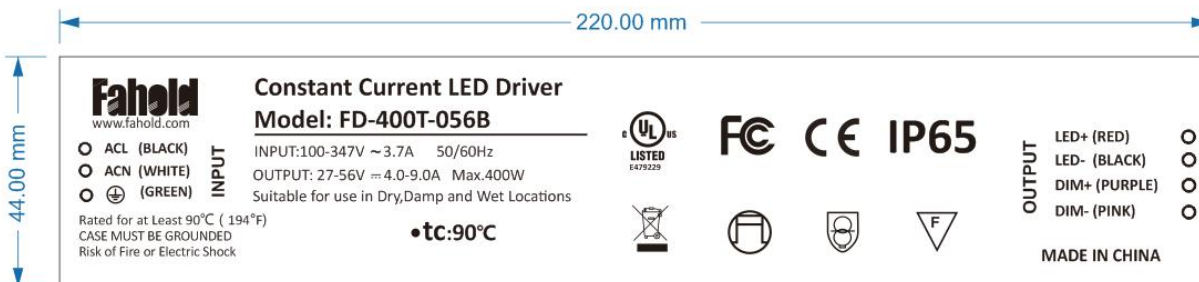


- Input Wire UL 600V 18#, Black-L,White-N, Green-PE
- Output Wire UL 300V 16#, Red_LED+,Black_LED-
- Dimming Wire UL 300V 22#, Purple_DIM+, Pink_DIM-
- Auxiliary Wire UL 300V 22#, Black roll white_ +12V

LABEL-With 12V



LABEL



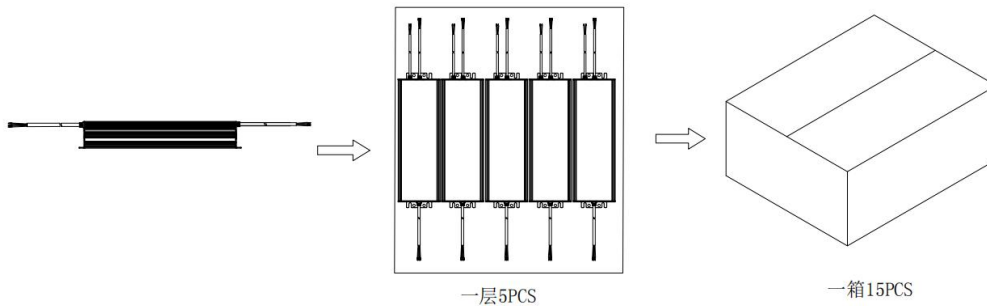
Installation considerations

1. Lightning protection level meets IEC61000-4-5 standard requirement. If you use the lightning prone area or the are with a complex power grid environment ,we suggest that you should equipped with professional lightning protection module on the led driver AC input terminal.

Package,Transportation & Storage

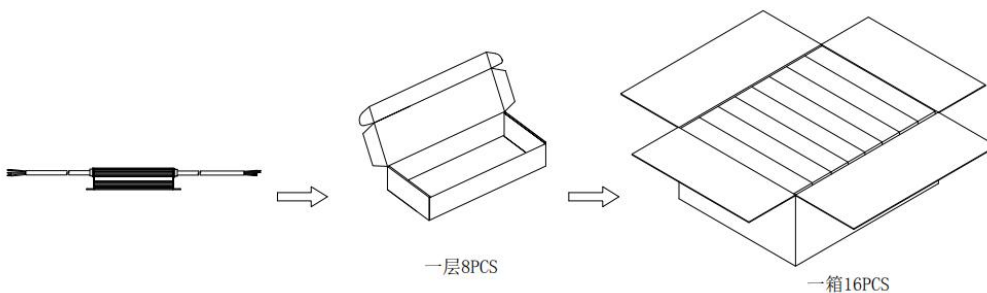
1.Package

Mode 1 (default factory mode)



| | |
|--------------------------|----------------------------------|
| Packing case size | 400mmx330mmx148mm (L×W×H) |
| Quantity | 5PCS/Tier; 3Tier/Box; 15 PCS/Box |
| Weight | 1500g±5%/PCS; 23.3Kg±5%/Box |

Mode 2 (Aircraft box)



| | |
|--------------------------|----------------------------------|
| Packing case size | 425mmx310mmx225mm (L×W×H) |
| Quantity | 8PCS/Tier; 2Tier/Box; 16 PCS/Box |
| Weight | 1500g±5%/PCS; 25.7Kg±5%/Box |

2. Transportation

Packaging is designed suitable for transportation by truck, ship, and plane. The products should be shielded from sunshine, and loaded and unloaded carefully.

3. Storage

The product storage meet the standard of the GB 3873—83.

Product should be re-checked over 1 year and than will be used after they are qualified.

Disclaimer:

The content of this manual is made according to the existing information of the product. Due to the product version upgrade or other reasons, the content of the manual may be changed. Our company reserves the right to improve the product without prior notice, and reserves the right of final explanation for the performance description of the company's products. Our company is committed to improving the quality of products and constantly upgrading and optimizing the products.

Products Installation and Using should Note:

- Do not connect alternating current to DC output side and dimming side.
- Application do not exceed the power 400W.
- Do not use the Driver in parallel on the same lamp.
- This product is a constant current LED Driver, and only suitable for LED lamps and lanterns.

Safety and Attentions

In order to reduce the risk of personal injury, electric shock, fire, and power supply damage, please read the following specifications carefully and follow these rules to prevent danger.

- Do not install the Driver in the area with inflammable and explosive materials to avoid explosion and fire.
- Please do not disassemble the Driver and replace the components without permission, so as to avoid electric shock.

ECN History

| Rev | Description of Change | | Changed Date | Notes |
|-----|-----------------------|-------|--------------|-------|
| | Before | After | | |
| 00 | Original Release | --- | 2022/03/26 | |
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