# LF-A1-050U090B

Programmable IP67 Isolated LED Driver | Constant Current

## Product family features

— THD≦10% @full load

— Rated input voltage: 100-277Vac

— Ta: -40~+60℃

— Ripple current <5%

— Output current adjustable via potentiometer

— Surge protection: DM: 4kV & CM: 6kV

— All-round protections: short-circuit, open-circuit, over-temperature

— IP67, suitable for Class I light fixtures

— 5 years guarantee

## Product family benefits

— High efficiency

— Flicker free

— Long lifetime and high reliability

— Isolated

## Typical applications

— For shoebox light, flood light, street light and tunnel light

— For street lighting

## Product parameters

— Output current 550-900mA

— Output power 24.8W-50W

— Input voltage 100-277Vac

— Output voltage 45-90Vdc

— Efficiency 90%

## Electrical data

### Input data

| | |
|---|---|
| **Rated supply voltage** | 100 ... 277V |
| **AC voltage range** | 90 ... 305V |
| **Mains frequency** | 50/60Hz |
| **Power factor** | 0.95 |
| **Efficiency** | 90% [1)] |
| **THD** | ≦10% [2)] |
| **Input current** | 0.65A Max |
| **Inrush current** | 40A [3)] |
| **Loading number on circuit breaker 10 A (B)** | 8 |
| **Loading number on circuit breaker 10 A (C)** | 14 |
| **Loading number on circuit breaker 16 A (B)** | 14 |
| **Loading number on circuit breaker 16 A (C)** | 23 |
| **Protective conductor current** | ≤3.5mA |

### Output data

| | |
|---|---|
| **Nominal output voltage** | 40... 90V |
| **Nominal output current** | 550...900mA |
| **Default output current** | 900mA±5% |
| **Linear adjustment rate** | ±5% |
| **Load adjustment rate** | ±5% |
| **Current set** | Potentiometer |
| **Maximum output power** | 50W |
| **Nominal output power** | 24.8... 50W |
| **Output ripple current (100 Hz)** | ＜5% |
| **Flicker** | According to IEEE Std 1789-2015 |
| **CIE SVM** | ≤0.4 |
| **IEC-Pst** | ≤1 |
| **Current accuracy** | ±5% |
| **Temperature tolerance** | ±10% |
| **Start-up time** | ＜0.5S |
| **Device power loss** | / |

### Safety

| | |
|---|---|
| **Withstanding voltage** | I/P-O/P：3.75kV&5mA&60S; I/P-PE：1.5kV&5mA&60S; O/P-PE：0.5kV&30mA&60S |
| **Surge capability (L-N)** | 4 kV |
| **Surge capability (L/N-Ground)** | 6 kV |
| **Insulation resistance** | I/P-O/P I/P-PE O/P-PE: ＞100MΩ@500VDC |
| **Guarantee** | 5 years[4)] |

1) @output current 900mA, output voltage 56V

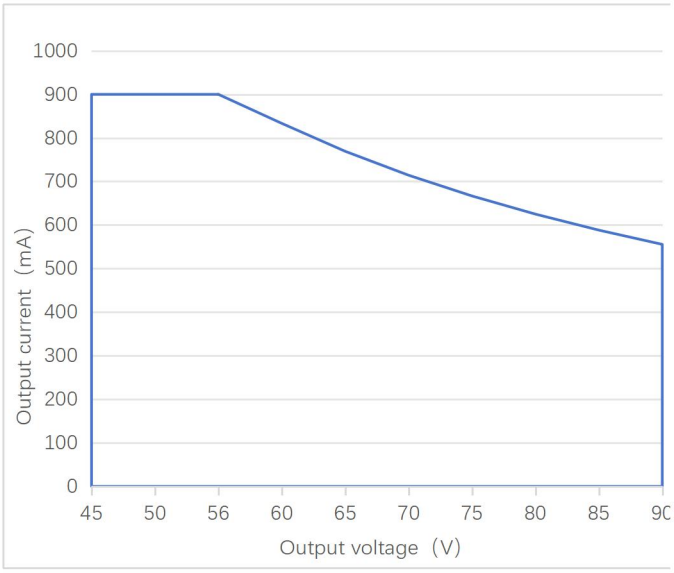
2) 60-100% full load@230Vac

3) t =250μs

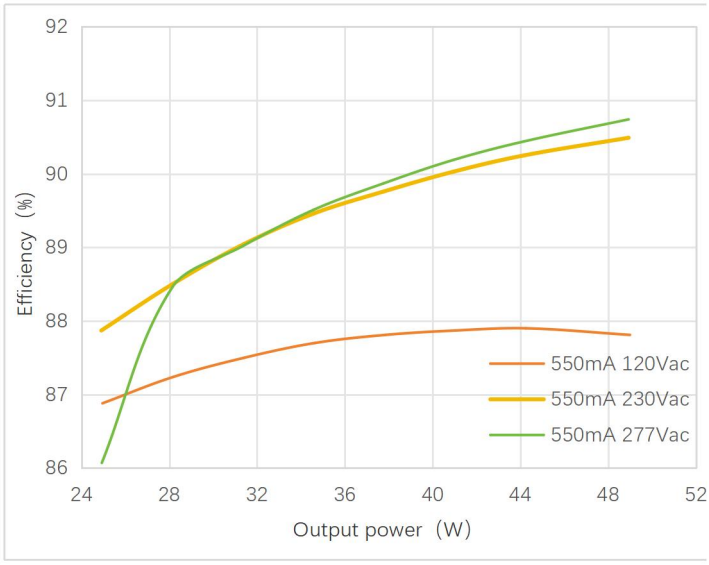
4) 5 years @Tc≤86℃

## Characteristic diagram

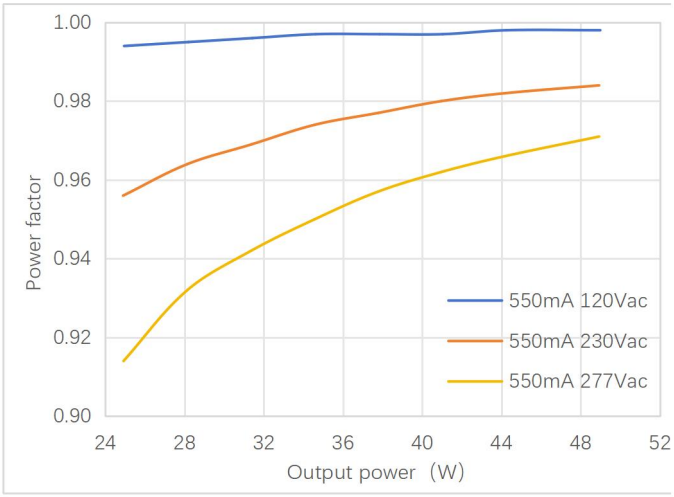
### Operating Window



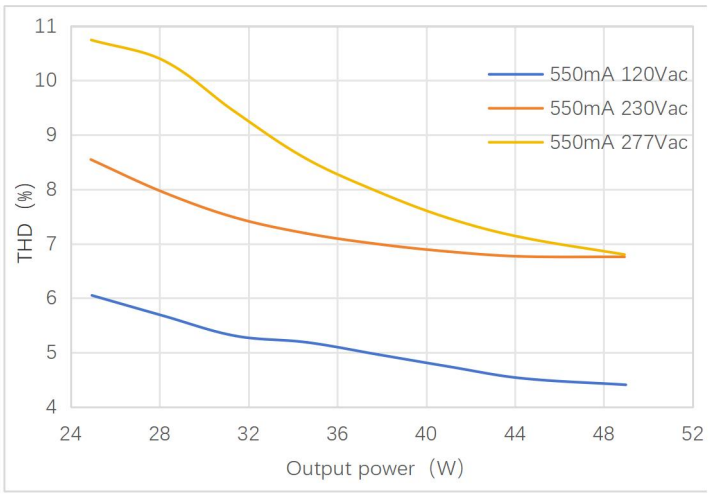

### Typical Efficiency vs Load



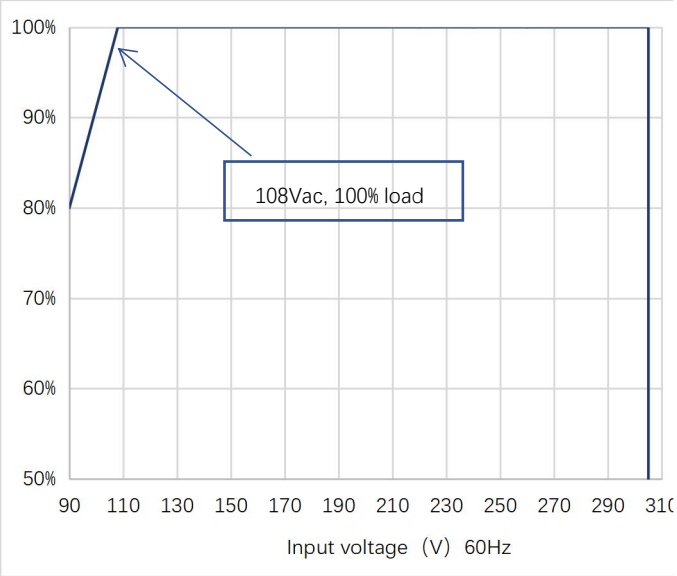

### Typical Power Factor vs Load



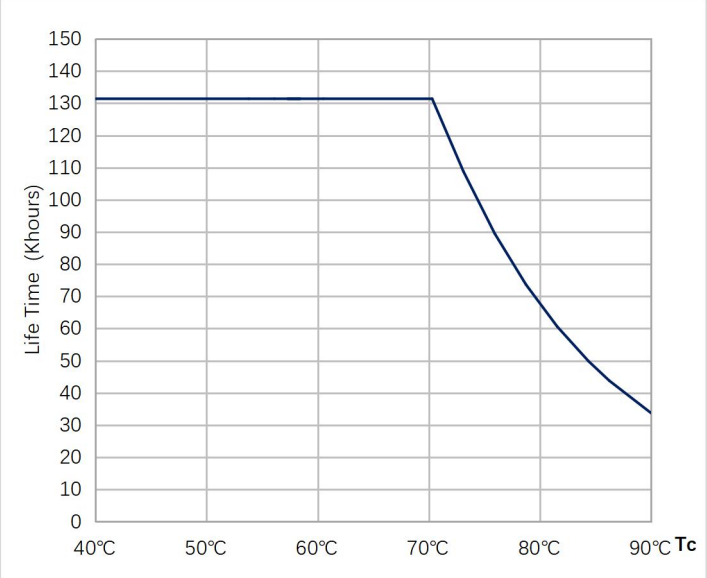

### Typical THD vs Load



**Load Derating Curve**



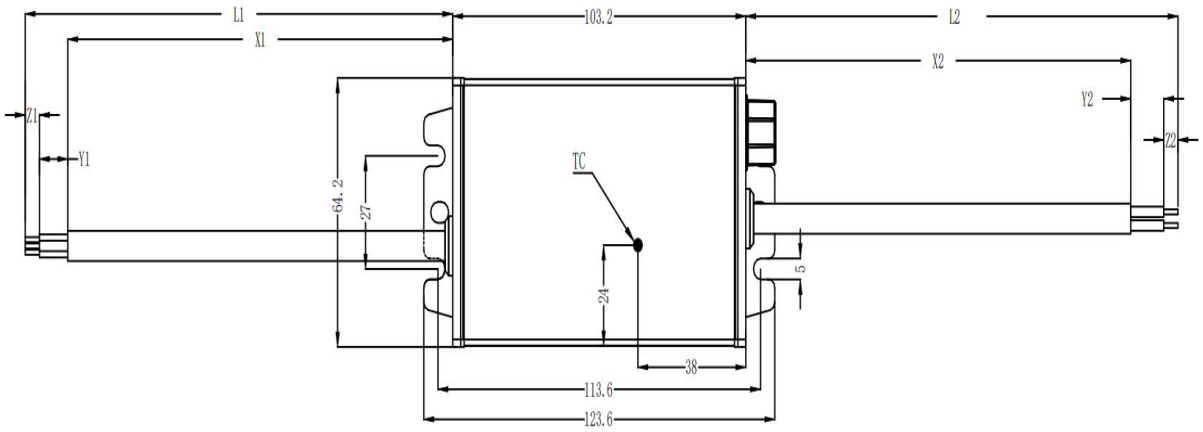

**Lifespan**




## Instructions for adjusting current via potentiometer

| Parameter | Min. | Typ. | Max. | Note |
|---|---|---|---|---|
| **Output current setting range** | 550mA | 900mA | 900mA | Total output power ≤50W |

## Dimensions




| | |
|---|---|
| **Mounting hole spacing length** | 113.6mm |
| **Product weight** | 420g |
| **Wire type, input side** | 3*1.0mm² Φ8.2±1mm |
| **Wire type, output side** | 2*1.0mm² Φ7.7±1mm |
| **Wire color, input side** | AC-L Brown; AC-N Blue; PE Yellow&green |
| **Wire color, output side** | LED+ Brown; LED- Blue |
| **Wire peeled length, input side (X1)** | 50±5mm |
| **Wire peeled length, output side (X2)** | 36±5mm |
| **Wire length, input side (L1)** | 285±10mm |
| **Wire length, output side (L2)** | 230±10mm |
| **Wire tinned length, input side (Y1)** | 10±2mm |
| **Wire tinned length, output side (Y2)** | 8±1.5mm |
| **Length (l)** | 123.6±1mm |
| **Width (w)** | 64.2±0.5mm |
| **Height (h)** | 31.5±0.5mm |

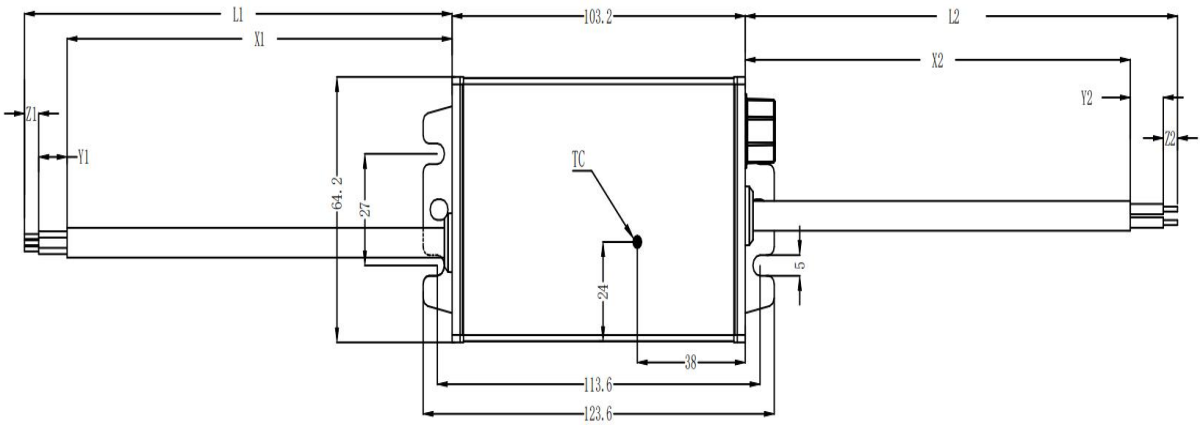
## Colors & materials

| | |
|---|---|
| **Casing material** | Metal |
| **Casing color** | Silver gray |

## Temperature & operating conditions

| | |
|---|---|
| **Ambient temperature range** | -40℃ - +60℃ |
| **Maximum temperature at Tc test point** | 90℃ |
| **Temperature range at storage** | -40℃ - +80℃ (6 months in Class I environment) |
| **Humidity range at storage** | 10-90%RH (no condensation) |
| **Humidity during operation** | 20-90%RH |
| **RoHS** | RoHS 2.0（EU）2015/863 |

## Tc test point




Note: this diagram is a front view and Tc point is on the front side of the driver.

## Capabilities

| | |
|---|---|
| **Dimmable** | _ |
| **Overheating protection** | When Tc is 95℃±5℃, it will reduce the current and auto-recover when the Tc decreases to 85℃±5℃. |
| **Overload protection** | _ |
| **Short-circuit protection** | Hiccup mode (Auto-recovery) |
| **No load protection** | ＜105V |
| **Max. cable length to lamp/LED module** | _ |
| **Suitable for fixtures with prot. class** | I |
| **Control interface** | _ |
| **Number of channels** | 1 channel |

## Programming

| | |
|---|---|
| **Programmer** | _ |
| **DALI control software** | _ |
| **APP** | _ |

## Certificates & standards

| | |
|---|---|
| **Approval marks – approval** | FCC, UL, ENEC, CB, CE, RCM |
| **Standards** | IEC/EN 61347-2-13, IEC/EN 61347-1, IEC/EN 62493<br>IEC/EN 62384<br>AS 61347.1, AS 61347.2.13<br>UL 8750 CSA C22.2#250.13<br>FCC Part 15B |
| **EMC** | GB 17625.1-2022, GB/T 17743-2021<br>EN 55015, EN 61547, EN 61000-3-2,3 |
| **Group pulse** | 5kV (Class B) |
| **Ring-wave interference** | 5kV (Class B) |
| **ESD** | Air 8kV, touch 4kV |
| **Type of protection** | IP67 |

## Logistical data

| Product | Packaging unit (Pieces/Unit) | Dimensions (L*W*H) | Volume | Gross weight |
|---|---|---|---|---|
| LF-A1-050U090B | 24 | 440mm*370mm*167mm | 27.19dm³ | 13kg±5% |

## Test equipment & condition

| | |
|---|---|
| **Test Equipment** | AC power source: CHROMA6530, digital power meter: CHROMA66205, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber, lightning surge generator: Everfine EMS61000-5B, rapid group pulse generator: Everfine EMS61000-4A, spectroanalyzer: KH3935, hi-pot tester: EEC SE7440, flicker tester (flicker-free coefficient test): Everfine LFA-3000, etc. |

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 230Vac/50Hz.

## Additional information

1. It is recommended that user install the over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety.

2. 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.

3. The test conditions of circuit breaker configuration quantity should be consistent with the ones of surge current.

4. 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.

5. Use a straight/Phillips screwdriver to adjust the current of the LED driver; otherwise, the potentiometer may be damaged. (Use a screwdriver with the tool head, tool body, and tool handle with good insulation, or a screwdriver with 2mm tool head, and the torque should not exceed 500g.cm)

6. When using the LED driver, please pay attention that the total output power not exceed the maximum rated output power, otherwise the warranty service of LED driver would be failed.

7. 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.

## Transportation & storage

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 of LED driver as much as possible.

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.

## Disclaimer

Subject to change without notice. Errors and omission excepted. Always make sure to use the most recent release.

Lifud Technology Co., Ltd. reserves the right to interpret any contents of this specification.