

## Product Description

LF-FMR020YS is a 20W non-isolated flicker-free constant current LED driver. It has a metal casing, high power factor and high efficiency. The rated input voltage range is 220-240Vac. The output voltage range is 25-57Vdc. The output current can be adjusted via the DIP switch from 200-350mA, in steps of 50mA.

## Features

- EU standard, metal casing
- High performance, high efficiency, high power factor
- 5-year warranty (Please refer to the warranty condition.)
- Suitable for Class I light fixtures



## Applications

- Indoor office lighting
- Decorative lighting
- Commercial lighting



## Product Naming

LF - FMR 020 YS



Y: conforms to certifications; S: serial number

020: output power of 20W

F: non-isolated design; MR: LED driver for tri-proof light

## Electrical Characteristics

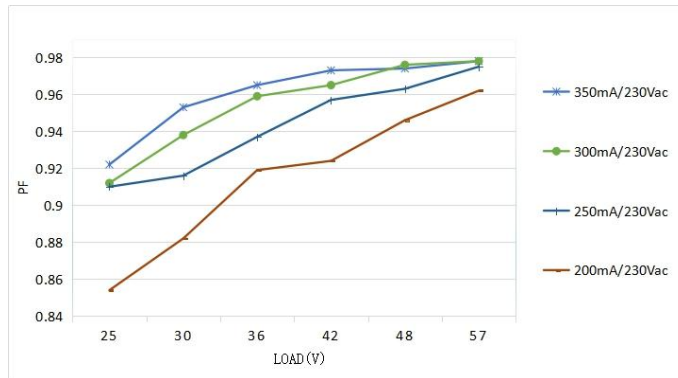
| Model                      |   | LF-FMR020YS                            |       |       |       |     |
|----------------------------|---|--|-------|-------|-------|-----|
| Output                     | Output Voltage                                      | 25-57Vdc                               |       |       |       |     |
|                            | Output Current                                      | Adjustable via the DIP switch          |       |       |       |     |
|                            |   | 200mA                                  | 250mA | 300mA | 350mA |     |
|                            | Modulation Depth                                    | Conforms to the standard of IEEE1789   |       |       |       |     |
|                            | CIE SVM   | ≤0.4                                   |       |       |       |     |
|                            | IEC-Pst   | ≤1.0                                   |       |       |       |     |
|                            | Current Tolerance                                   | ±7%                                    |       |       |       |     |
|                            | Temperature Drift                                   | ±10%                                   |       |       |       |     |
|                            | Start-up Time                                       | <0.5S@230Vac                           |       |       |       |     |
| Input                      | AC Input Voltage                                    | 220-240Vac (voltage limit: 198-264Vac) |       |       |       |     |
|                            | DC Input Voltage                                    | 180-264Vdc                             |       |       |       |     |
|                            | Input Frequency                                     | 47Hz-63Hz                              |       |       |       |     |
|                            | Input Current                                       | 0.12A                                  |       |       |       |     |
|                            | Power Factor  | >0.9@230Vac                            |       |       |       |     |
|                            | THD   | <20%                                   |       |       |       |     |
|                            | Efficiency  | ≥82%                                   | ≥84%  | ≥85%  | ≥85%  |     |
|                            | Inrush Current                                      | ≤14A & 150uS @230Vac (Max)             |       |       |       |     |
|                            | Leakage Current                                     | ≤0.7mA                                 |       |       |       |     |
|                            | Load Quantity of What a Circuit Breaker can Support | Circuit Breaker Model                  | B10   | C10   | B16   | C16 |
|                            |   | Quantity (pcs)                         | 40    | 67    | 65    | 108 |
| Protection Characteristics | Open Circuit Protection                             | <150Vdc @input voltage220-240Vac       |       |       |       |     |
|                            |   | <450Vdc @input voltage180-264Vdc       |       |       |       |     |
|                            | Short Circuit Protection                            | Hiccup mode (auto-recovery)            |       |       |       |     |

|  |   |  |
|--|---|--|
| Environment Description                  | Working Temperature   | -30°C~+50°C  |
|  | Working Humidity  | 20-90%RH (no condensation)   |
|  | Storage Temperature/<br>Humidity  | -30°C~+80°C (six months under class I environment);<br>10-90%RH (no condensation)  |
|  | Atmospheric Pressure  | 86KPa~106KPa   |
| Safety and Electromagnetic Compatibility | Certification   | ENEC, CE, CB, RCM, CCC, SAA, EL  |
|  | Withstanding Voltage  | I/P-FG: 1.6KV 5mA 60S  |
|  | Insulation Resistance   | I/P-FG O/P-FG: >100MΩ@500VDC   |
|  | Safety Standard   | ENEC: EN61347-1:2015, EN 61347-2-13: 2014/A1: 2017, EN62384: 2016/A1: 2009<br>CE-LVD: EN 61347-2-13: 2014/A1: 2017, EN 61347-1: 2015, EN 62493: 2015<br>CB: IEC 61347-1: 2015, IEC61347-2-3: 2014, IEC61347-2-13: 2014/AMD1: 2016<br>RCM: AS 61347.2-13: 2018<br>EL: IEC 61347-2-13:2014 Annex J<br>CCC: GB19510.1-2009, GB19510.14-2009 |
|  | EMI   | CE-EMC/RCM: EN55015, EN61000-3-2, EN61000-3-3<br>CCC: GB/T17743, GB17625.1, GB17625.2  |
|  | EMS   | CE-EMC/RCM: EN61000-4-2, 3, 4, 5 (lightning strike L-N: 1KV, L/N-PG: 2KV), 6, 11<br>CCC: GB/T17626.2, 3, 4, 5 (lightning strike L-N: 1KV, L/N-PG: 2KV), 6, 11  |
| Others                                   | IP Rating   | IP20   |
|  | RoHS  | RoHS 2.0 (EU) 2015/863   |
|  | Warranty  | 5 yrs (Tc≤70°C)  |
| Test Equipment                           | AC power source: CHROMA6530, digital power meter: CHROMA66202, 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: TH9201B, flicker-free tester (flicker-free coefficient tester) 60N-01, etc. |  |

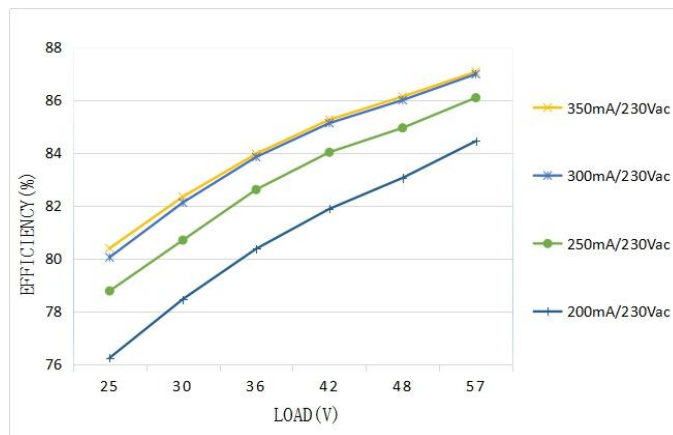
|         |  |
|---------|--|
| Remarks | <ol style="list-style-type: none"> <li>1. It is recommended that customer should install overvoltage and undervoltage protection devices and surge protection devices in the power supply circuits of the light fixtures to ensure safety before connecting to electricity.</li> <br/> <li>2. As an accessory, the LED driver is not the only factor determining the EMC performance of the LED light fixture. The structure and the wiring of the light fixture are also relevant. Thus it's strongly recommended the LED light fixture manufacturer re-confirms the EMC of the whole LED light fixture.</li> <br/> <li>3. The test conditions of the circuit breaker configuration quantity are the same as that of the inrush current test.</li> <br/> <li>4. Unless otherwise stated, the parameters of the power factor, harmonic and efficiency were test results under the ambient temperature of 25°C, humidity of 50%, input voltage of 230Vac/50Hz and full load.</li> </ol> |
|---------|--|

### Product Characteristic Curves

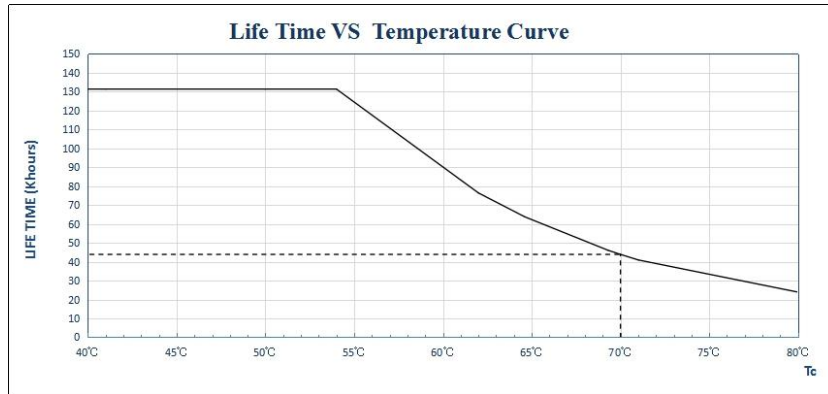
#### PF Curve



#### Efficiency Curve



**Lifetime Curve**



**Definition of the Driver’s Terminals**

**INPUT**

|      |                 |
|------|-----------------|
| AC-L | AC live wire    |
| AC-N | AC neutral wire |
|      | Grounding wire  |

**OUTPUT**

|      |  |
|------|--|
| LED+ | The driver’s positive electrode output |
| LED- | The driver’s negative electrode output |

**Definition of the Driver’s DIP Switch**

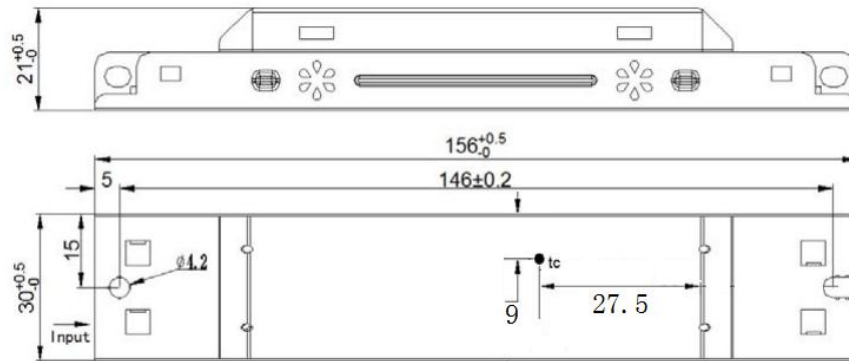
| I rated (CC) | 1  | 2  |
|--------------|----|----|
| 200mA        | -  | -  |
| 250mA        | ON | -  |
| 300mA        | -  | ON |
| 350mA        | ON | ON |

Note: “-” represents the OFF shift.

### Label

|  |                          |   |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
|--|--------------------------|---|--|---|---|-------|---|---|-------|----|---|-------|---|----|-------|----|----|-------------------------------------|
| <b>Lifud</b> ® LED Driver(LED控制装置) Model:LF-FMR020YS |                          | Preparation for input and output  |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
| <b>INPUT</b><br>AC-L<br>AC-N<br><br>0.75-1.5 □       | Un: 180-264V ==          | In: 0.044-0.150A  | For LED modules only<br>www.lifud.com<br>Made in China<br>(中国制造) |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
|  | Un: 220-240V ~           | In: 0.12A   |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
|  | Fn: 50/60Hz              | PF: 0.9C  |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
|  | Output Voltage:25-57V == | P rated: 19.9W(Max)   |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
| ta: 50°C   | tc: 80°C                 | <table border="1"> <tr> <td>Rated(CC)</td> <td>1</td> <td>2</td> </tr> <tr> <td>200mA</td> <td>-</td> <td>-</td> </tr> <tr> <td>250mA</td> <td>on</td> <td>-</td> </tr> <tr> <td>300mA</td> <td>-</td> <td>on</td> </tr> <tr> <td>350mA</td> <td>on</td> <td>on</td> </tr> </table> | Rated(CC)  | 1 | 2 | 200mA | - | - | 250mA | on | - | 300mA | - | on | 350mA | on | on | OUTPUT<br>LED+<br>LED-<br>0.5-1.0 □ |
| Rated(CC)  | 1                        | 2   |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
| 200mA  | -                        | -   |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
| 250mA  | on                       | -   |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
| 300mA  | -                        | on  |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
| 350mA  | on                       | on  |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |
|  |                          | Input voltage U out<br>180-264V == 450V ==<br>220-240V ~ 150V ==  |  |   |   |       |   |   |       |    |   |       |   |    |       |    |    |                                     |

### Structures & Dimensions (Unit:



### Package Specifications

|          |  |
|----------|--|
| Model    | LF-FMR020YS                            |
| Box Size | 385*285*210mm (L*W*H)                  |
| Quantity | 12 pcs/layer; 6 layers/ctn; 72 pcs/ctn |
| Weight   | 0.093 kg/pc; 6.76 kg/ctn               |

## Transportation & Storage

### ■ Transportation

- Suitable transportation means: vehicles, boats and aircraft.
- During transportation, there should be awnings for rain protection and sun protection. Civilized loading and unloading are required. There should be no severe vibration or impact.

### ■ Storage

- Storage in accordance with the provisions of the Class I environment. For products which have been stored for more than six months, they mustn't be used until they pass the re-inspection.

## Attention

- Please use this product according to its specifications otherwise there may be malfunction.
- Use light fixtures that have not been certified or are not compatible with the LED drivers may cause fire or other hazards.
- Man-made damage, any use beyond the specification and non-original-factory modification are not covered by warranty.

Remark: The final interpretation right of the contents of this data sheet belongs to Lifud Technology Co., Ltd.