

## Features

- Flicker free
- High efficiency; high PF
- IP20
- Suitable for Class I light fixtures



## Applications

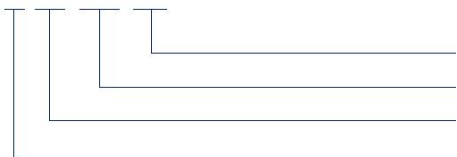
· Indoor office lighting · decorative lighting · commercial lighting

## Descriptions

LC-CMR020YS is a 20W constant current LED driver. Its input voltage ranges from 220 to 240Vac and output current is adjustable from 200 to 350mA via DIP switch with every 50mA as a step. It is suitable for Class I light fixtures, including tri-proof light, linear light, etc.

## Product Model

LC - C MR 020 YS



- Y: complies with certifications; S: serial number
- 020: output power: 20W
- MR: indoor metal casing tri-proof light
- C: non-isolated design

■ Electrical Characteristics

| Model                      |                                       | LC-CMR020YS                                                                                                                                                                  |       |       |       |     |
|----------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-----|
| Output                     | Output Voltage                        | 25-57Vdc                                                                                                                                                                     |       |       |       |     |
|                            | Output Current                        | Adjustable via DIP switch (optional)                                                                                                                                         |       |       |       |     |
|                            |                                       | 200mA                                                                                                                                                                        | 250mA | 300mA | 350mA |     |
|                            | Ripple Current (<100Hz)               | ±5%                                                                                                                                                                          |       |       |       |     |
|                            | Flicker Index                         | Complies with IEEE Std 1789-2015                                                                                                                                             |       |       |       |     |
|                            | CIE SVM                               | ≤0.4                                                                                                                                                                         |       |       |       |     |
|                            | IEC-Pst                               | ≤1                                                                                                                                                                           |       |       |       |     |
|                            | Current Tolerance                     | ±7%                                                                                                                                                                          |       |       |       |     |
|                            | Temperature Drift                     | ±10%                                                                                                                                                                         |       |       |       |     |
|                            | Start-up Time                         | <0.5S                                                                                                                                                                        |       |       |       |     |
| Input                      | Input Voltage                         | 220-240Vac                                                                                                                                                                   |       |       |       |     |
|                            | Input Voltage Range                   | 198-264Vac                                                                                                                                                                   |       |       |       |     |
|                            | DC Input Voltage                      | 180-264Vdc <sup>①</sup>                                                                                                                                                      |       |       |       |     |
|                            | Input Frequency                       | 0/50/60Hz                                                                                                                                                                    |       |       |       |     |
|                            | Input Current                         | 0.15A max.                                                                                                                                                                   |       |       |       |     |
|                            | PF                                    | ≥0.9                                                                                                                                                                         |       |       |       |     |
|                            | THD                                   | ≤20%                                                                                                                                                                         |       |       |       |     |
|                            | Efficiency                            | ≥85%                                                                                                                                                                         |       |       |       |     |
|                            | Inrush Current                        | ≤19A <sup>②</sup>                                                                                                                                                            |       |       |       |     |
|                            | Loading Quantities of Circuit Breaker | Model                                                                                                                                                                        | B10   | C10   | B16   | C16 |
|                            |                                       | Quantity (pcs)                                                                                                                                                               | 30    | 49    | 48    | 81  |
|                            | Leakage Current                       | <0.7mA                                                                                                                                                                       |       |       |       |     |
| Protection Characteristics | Open Circuit                          | ≤150Vdc                                                                                                                                                                      |       |       |       |     |
|                            | Short Circuit                         | Auto-recovery                                                                                                                                                                |       |       |       |     |
|                            | Overload                              | If the maximum load is exceeded by a defined internal limit, the LED Driver turns off the LED output. The driver will recover automatically once the overload is eliminated. |       |       |       |     |

## ■ Electrical Characteristics

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environment Descriptions</b> | Operating Temperature                                                                                                                                                                                                                                                                                                                                                                                             | -30°C - +60°C                                                                                                                                                                                                                                                                                                                                                                                         |
|                                 | Operating Humidity                                                                                                                                                                                                                                                                                                                                                                                                | 10-95%RH (no condensation)                                                                                                                                                                                                                                                                                                                                                                            |
|                                 | Storage Temperature/ Humidity                                                                                                                                                                                                                                                                                                                                                                                     | -30°C - +80°C (6 months in Class I environment); 10-95%RH (no condensation)                                                                                                                                                                                                                                                                                                                           |
|                                 | Atmospheric Pressure                                                                                                                                                                                                                                                                                                                                                                                              | 86-106kPa                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Inrush Level</b>             | L-N                                                                                                                                                                                                                                                                                                                                                                                                               | 1kV                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Safety &amp; EMC</b>         | Certifications                                                                                                                                                                                                                                                                                                                                                                                                    | ENEC, CE, CB, RCM, UKCA, EL, CCC                                                                                                                                                                                                                                                                                                                                                                      |
|                                 | Withstand Voltage                                                                                                                                                                                                                                                                                                                                                                                                 | I/P-PG: 1.5kV&5mA&60S                                                                                                                                                                                                                                                                                                                                                                                 |
|                                 | Insulation Resistance                                                                                                                                                                                                                                                                                                                                                                                             | I/P-PG O/P-PG: >100MΩ@500VDC                                                                                                                                                                                                                                                                                                                                                                          |
|                                 | Safety Standards                                                                                                                                                                                                                                                                                                                                                                                                  | ENEC:EN 61347-2-13:2014/A1:2017, EN 61347-1:2015/A1:2021, EN IEC62384:2020<br>CE-LVD:EN 61347-2-13:2014/A1:2017, EN 61347-1:2015/A1:2021<br>CB:IEC61347-1:2015, IEC61347-1:2015/AMD1:2017, IEC61347-2-13:2014<br>IEC61347-2-13:2014/AMD1:2016<br>UKCA-LVD:EN 61347-1:2015/A1:2021, EN 61347-2-13:2014/A1:2017, EN 62493:2015<br>EL:EN IEC 61347-2-13 Annex J<br>CCC:GB 19510.1-2009, GB 19510.14-2009 |
|                                 | EMI                                                                                                                                                                                                                                                                                                                                                                                                               | CE-EMC/RCM:EN55015, EN61000-3-2, EN61000-3-3<br>UKCA-EMC:EN IEC 55015:2019/A11:2020, EN 61547:2009, EN IEC 61000-3-2:2019/A1:2021, EN 61000-3-3:2013/A2:2021<br>EL:EN IEC 61347-2-13 Annex J<br>CCC:GB/T17743, GB17625.1, GB17625.2                                                                                                                                                                   |
|                                 | EMS                                                                                                                                                                                                                                                                                                                                                                                                               | CE-EMC/RCM: EN61000-4-2,3,4,5,6,11<br>CCC:GB/T17626.2,3,4,5,6,11                                                                                                                                                                                                                                                                                                                                      |
| <b>Other Parameters</b>         | IP Rating                                                                                                                                                                                                                                                                                                                                                                                                         | IP20                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                 | RoHS                                                                                                                                                                                                                                                                                                                                                                                                              | RoHS 2.0 (EU) 2015/863                                                                                                                                                                                                                                                                                                                                                                                |
|                                 | Tc Max                                                                                                                                                                                                                                                                                                                                                                                                            | 80°C                                                                                                                                                                                                                                                                                                                                                                                                  |
|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Test Equipment</b>           | 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: EEC SE7440, flicker tester (flicker-free coefficient test): Everfine LFA-3000, etc. |                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Test Remark</b>              | If there are no special remarks, the above parameters are tested at the ambient temperature of 25°C, humidity of 50%, maximum output power and input voltage of 230Vac/50Hz.                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                       |

## ■ Electrical Characteristics

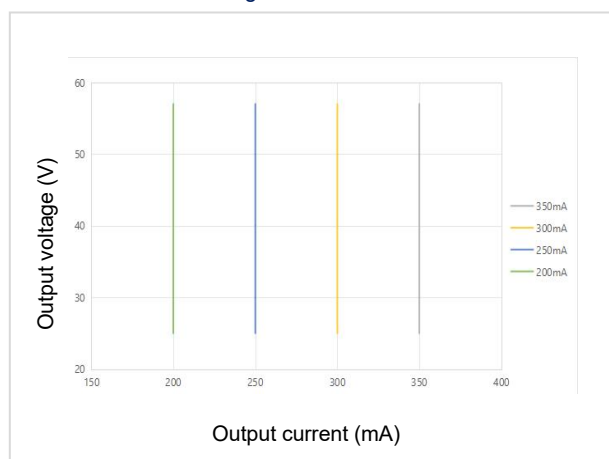
|                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Additional Remarks</b></p> | <ol style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>3. The test conditions of the circuit breaker configuration quantity are the same as those of the inrush current.</li> <li>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.</li> <li>5. It is well-advised that the withstanding voltage of LEDs and aluminum substrates &gt;3kV.</li> <li>6. It is recommended to install double-pole switch at AC input terminal. If user uses the single-pole switch, make sure to connect it to wire L (live wire), otherwise the afterglow of light fixture would be incurred after the AC is disconnected.</li> <li>7. There exists stray capacitance between LED light fixture and aluminum substrate, and the light fixture will have transient slight brightness the moment the mains is connected and the aluminum substrate is connected to the earth (the whole light fixture connected to the earth). This is of no abnormalities for a non-isolated LED driver. And if the above issue needs to be avoided, please replace the non-isolated with the isolated.</li> </ol> |
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Notice:

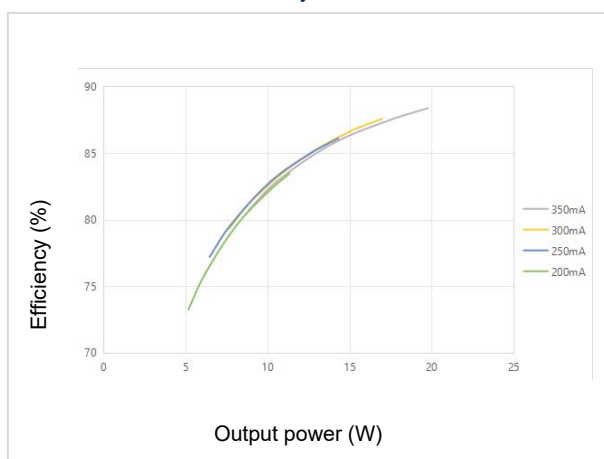
- ① DC input is only for emergency with the maximum using time of 90 mins
- ② @150uS

## ■ Product Characteristic Curves

Working Window Curve

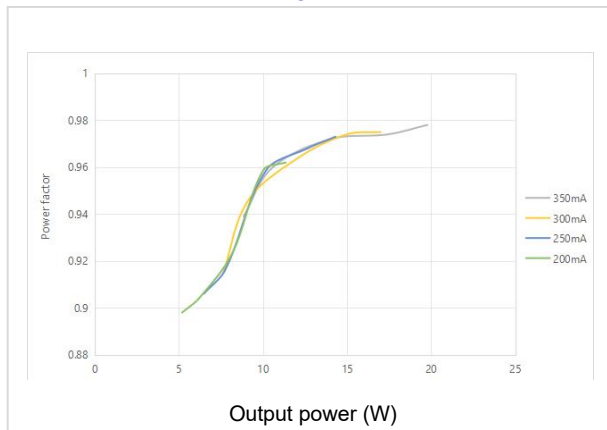


Efficiency Curve

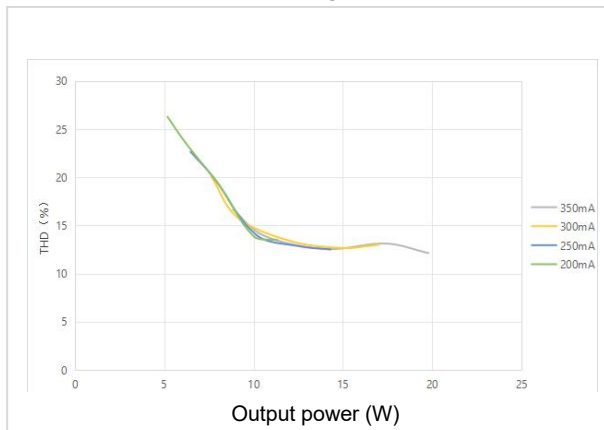


## ■ Product Characteristic Curves

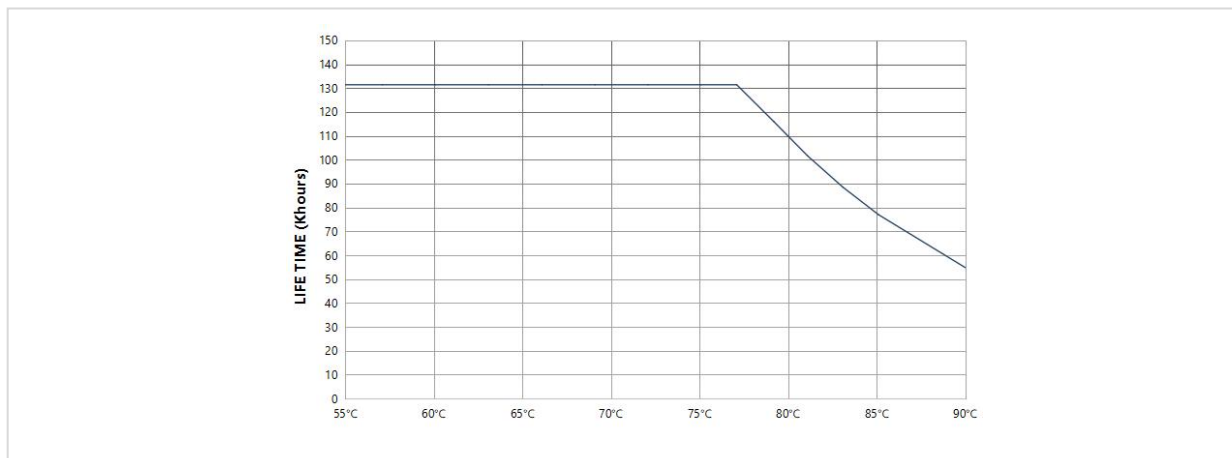
PF Curve



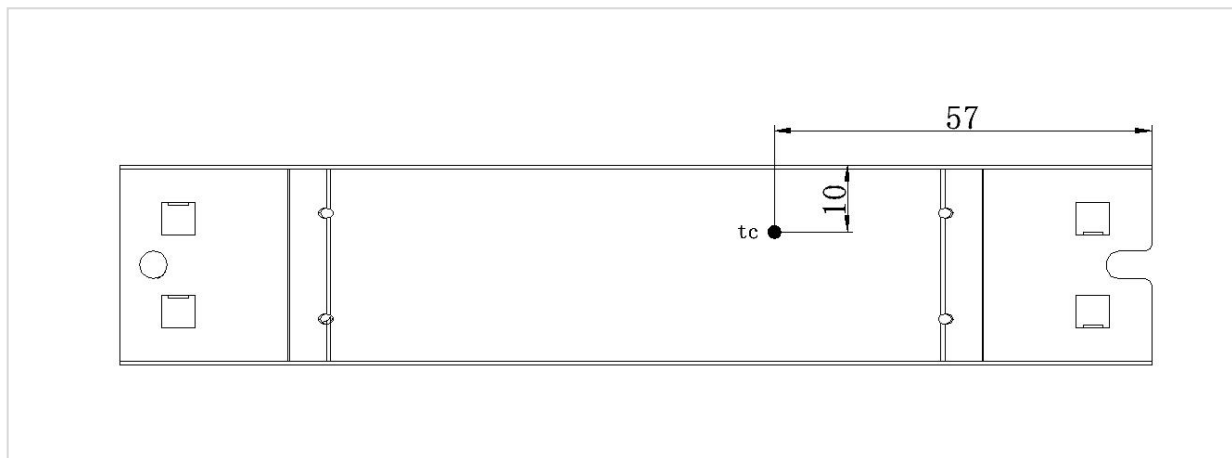
THD Curve



Lifetime Curve



Tc Point Testing Diagram



## ■ Product Definitions

### Product Terminal

| INPUT                                                                             |                       | OUTPUT |                                         |
|-----------------------------------------------------------------------------------|-----------------------|--------|-----------------------------------------|
| AC-L                                                                              | AC live wire input    | LED+   | Positive electrode output of LED driver |
| AC-N                                                                              | AC neutral wire input | LED-   | Negative electrode output of LED driver |
|  | Earth wire            |        |                                         |

### Product DIP Switch

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

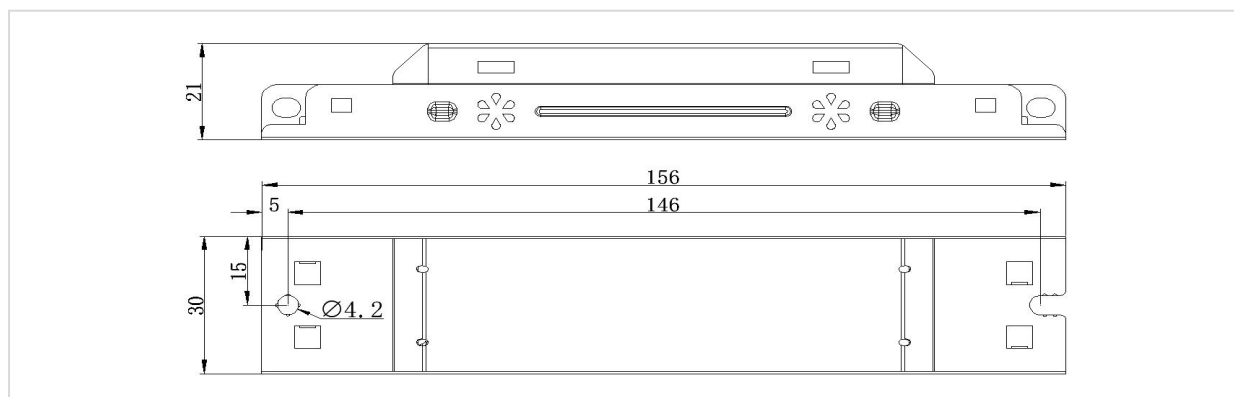
Remark: “-”: shift OFF. “\*”: default current. This table is only for DIP version. DIP when power on is NOT allowed. Please disconnect the AC power before DIP.

## ■ Structure & Dimensions (unit: mm)

### Product Dimensions

| Model       | Overall Appearance (L*W*H) | Distance Between 2 Positioning Holes (L) | Diameter of Positioning Hole (D) |
|-------------|----------------------------|------------------------------------------|----------------------------------|
| LC-CMR020YS | 156*30*21mm (±0.5mm)       | 146mm (±0.2mm)                           | 4.2mm                            |

### Structure Diagram

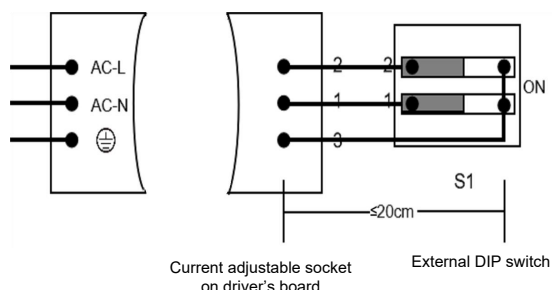


## ■ Product Definitions

### Remark of External DIP Switch

- Pin pitch of 3PIN terminal for user's external DIP switch at driver's output port: 2.54mm;
- PIN3: common terminal;
- Max. distance between output 3pin terminal and user's external DIP switch: 20cm (if it exceeds 20cm, the current tolerance would be inaccurate)

### Wiring Diagram of External DIP Switch



## ■ Packaging Specifications

| Model       | LC-CMR020YS                            |
|-------------|----------------------------------------|
| Carton Size | 385*285*210mm (L*W*H)                  |
| Quantity    | 12 pcs/layer; 7 layers/ctn; 84 pcs/ctn |
| Weight      | 0.09 kg ± 5%/pc; 8.48 kg ± 5%/ctn      |

## ■ Transportation and 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 of 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 LC 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 LC warranty service.

Remark: LC reserves the right to interpret any contents of this specification.