

20W Constant Current power supply



■ Approve



Features

- Class II, SELV, independent
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP
- Power Factor : 0.95
- Efficiency : 85%
- 5 years warranty

Applications

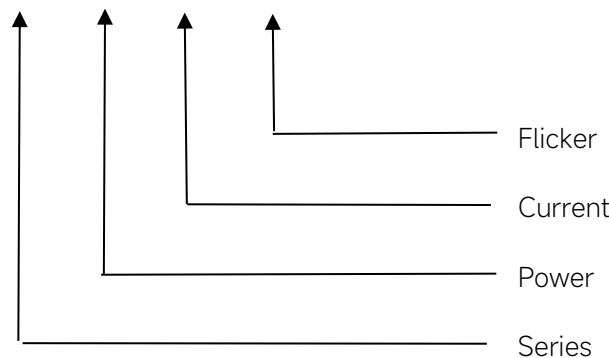
- LED panel, LED down light
- LED spot light

◆ Description

LS-20-XXX RI EXC is a 20W constant current LED driver that operates from 198-264Vac input with 350mA to 500mA output current. With it's compact dimensions from 100 x 38.2 x 25mm it is easy to integrate in LED Panel, spot and down light products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

◆ Model code

LS-20-XXX RI EXC



◆ Specification

| | Constant Current | 350mA | 400mA | 450mA | 500mA | |
|--------------------------|----------------------------------|--|------------|-------|-------|--|
| Output | Voltage Range | 40-60 | 24-42 | | | |
| | Unload voltage Max. | 72 | 59 | | | |
| | Current Accuracy | ±6% | | | | |
| | Output HF current ripple(≥1KHz) | ±5% | | | | |
| | Output LF current ripple(≤120Hz) | ±70% | ±50% | | | |
| | SVM | NA | | | | |
| | P _{st} | NA | | | | |
| | Efficiency(Typ.) | 85%@Full load,230V | | | | |
| | Input | Rated input voltage | 220-240VAC | | | |
| Range of input voltage | | 198-264VAC | | | | |
| Maximum voltage | | 300VAC@1 h maximum,unit might not operate in this abnormal condition | | | | |
| Frequency(Hz) | | 50/60 Hz | | | | |
| Displacement factor | | ≥0.7 | | | | |
| Power Factor | | 0.95@Full load,230V | | | | |
| Input Current max | | 0.16A MAX | | | | |
| Start-up time | | < 0.5S | | | | |
| No Load Power | | ≤0.5W | | | | |
| THD (Typ.) | | < 20%@Full load,230V | | | | |
| Protection | Over Load Protection | 103-120% | | | | |
| | | YES/Auto Resume | | | | |
| | Over Voltage Protection | 72VDC | 59VDC | | | |
| Short circuit Protection | YES/Auto Resume | | | | | |
| Environment | Operating Temperature | -20°C~+45°C | | | | |
| | Humidity | 20%-90%RH | | | | |
| | T _c | 80°C | | | | |
| | | 85°C@500mA | | | | |
| | Storage Temperature | -25°C~+60°C | | | | |
| | Life time | > 50000h@T _c =70°C,230VAC > 50000h@T _c =85°C,230VAC,500mA | | | | |
| Noise | ≤20dB(A)@10cm | | | | | |
| Surface | Dimension | 100X38.2X25(LXWXH)mm | | | | |
| | material | PP | | | | |
| Standards | Safety | EN61347- 1, EN61347-2- 13;EN62384 | | | | |
| | EMC | EN55015, EN61000-3-2, EN61000-3-3, EN61547;EN61000-4-5 | | | | |
| | ErP | Erp2.0 EU 2019/2020 | | | | |

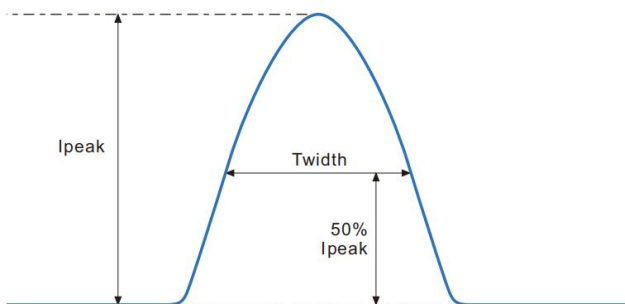
| | | |
|------|---|--------------------------------|
| | RoHS | RoHS (2011/65/EU) (EU)2015/863 |
| Note | <p>1.All parameters not specially mentioned are measured at 230VAC input , full load and 25°C of ambient temperature.</p> <p>2.Ripple & Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF & 47 uF parallel capacitor.</p> <p>3.Data are typical values obtained from test samples</p> <p>4.Switch and dimmer are not recommended to connect between this product output and luminaries.</p> | |

◆ Model list

| Number | Model number | Input | | | Output | | | |
|--------|-------------------|---------------|-------------|----------------|--------------|---------------|-----------------------|-----------|
| | | Voltage (VAC) | Current (A) | Frequency (Hz) | Current (mA) | Voltage (VDC) | Voltage No load (VDC) | Power (W) |
| 1 | *LS-20-350 RI EXC | 220-240 | 0.16 | 50/60 | 350 | 40-60 | 72 | 21 |
| 2 | LS-20-400 RI EXC | | | | 400 | 24-42 | 59 | 16.8 |
| 3 | LS-20-450 RI EXC | | | | 450 | 24-42 | 59 | 18.9 |
| 4 | *LS-20-500 RI EXC | | | | 500 | 24-42 | 59 | 21 |

◆ Inrush Current

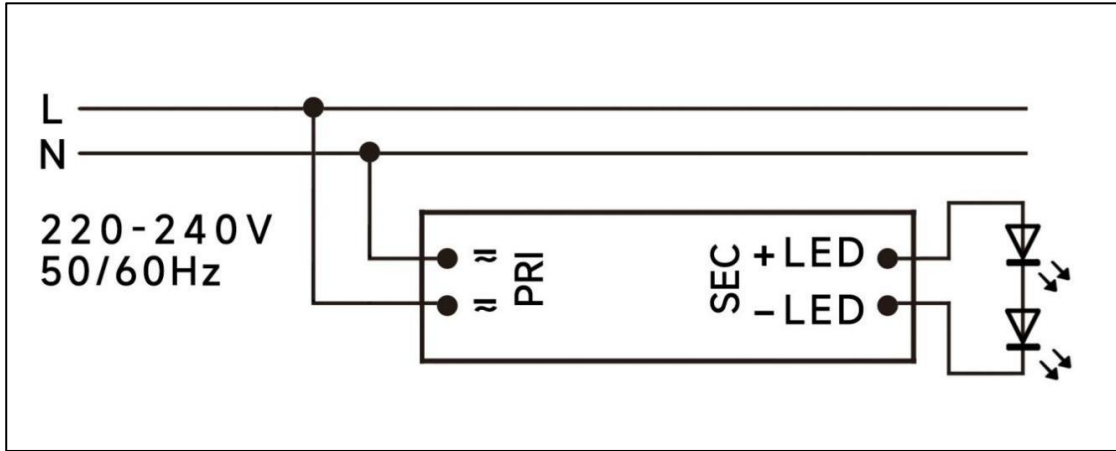
| I _{peak} | T _{width} | B10 | B16 | B20 | C10 | C16 | C20 |
|-------------------|--------------------|-------|-------|--------|-------|-------|--------|
| 4.18A | 36μs | 50pcs | 80pcs | 100pcs | 50pcs | 80pcs | 100pcs |



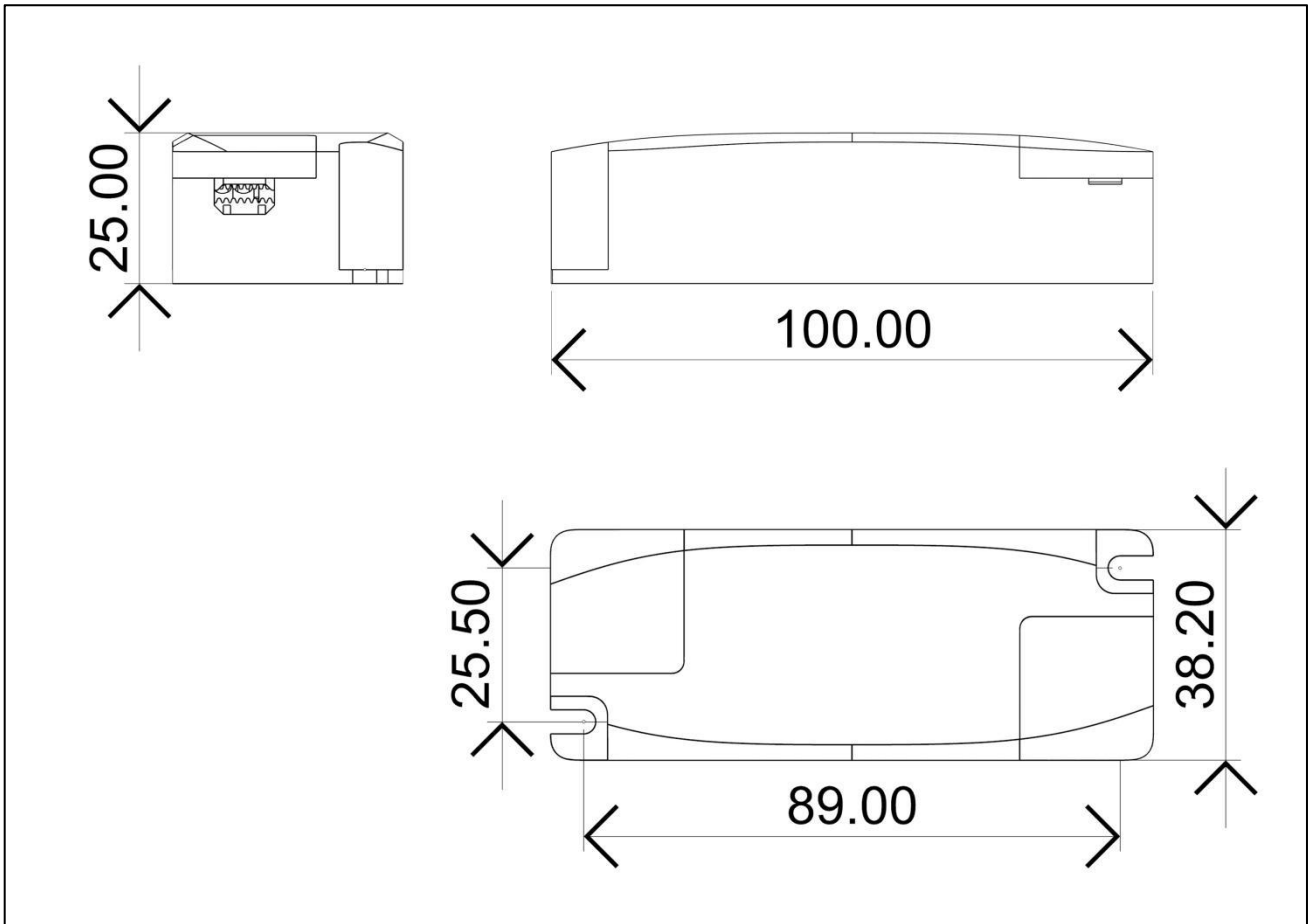
Remarks:

- 1.The number of drives mounted under different MCBs in the table is the maximum value. Please do not exceed this number during installation.
- 2.Different brands and models of miniature circuit breakers, the number of drives mounted will be slightly different.

◆ Wiring diagram



Preliminary

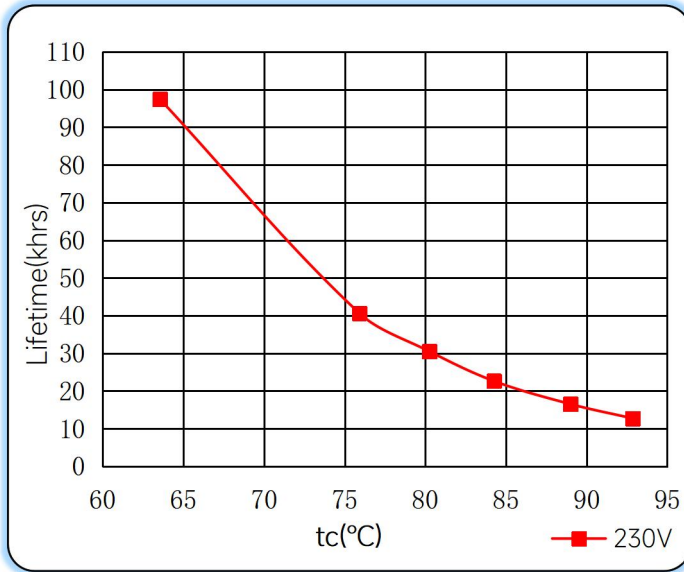
◆ 2D diagram

◆ Wiring & Connections

| | Specification item | Value (Unit) |
|--------|---------------------------|---------------------------|
| Input | Input wire cross-section | 0.5...1.5 mm ² |
| | Input wire gauge. | 16...20 AWG |
| | Input wire strip length | 7...9mm |
| Output | Output wire cross-section | 0.5...1.5 mm ² |
| | Output wire gauge. | 16...20 AWG |
| | Output wire strip length | 7...9mm |

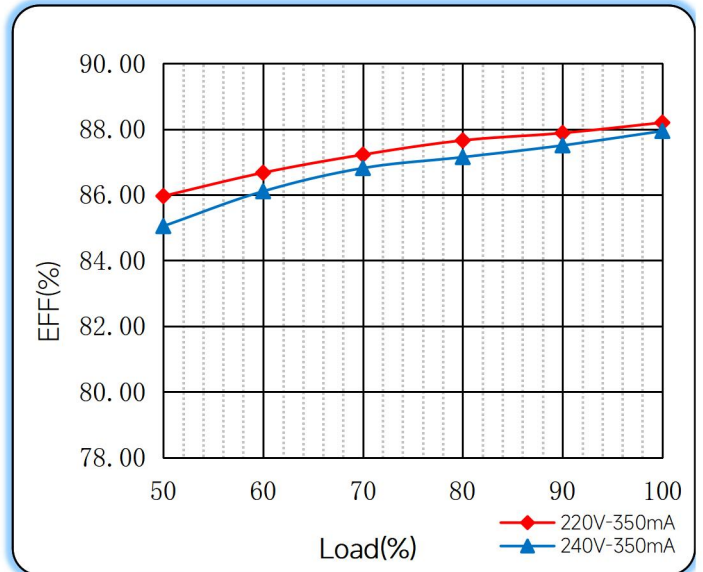
Note: Solid wire is risky to use on an angled terminal. Stranded wire is recommended for this kind of use.

◆ **Curve for LS-20-350 RI EXC, I_o=350mA**

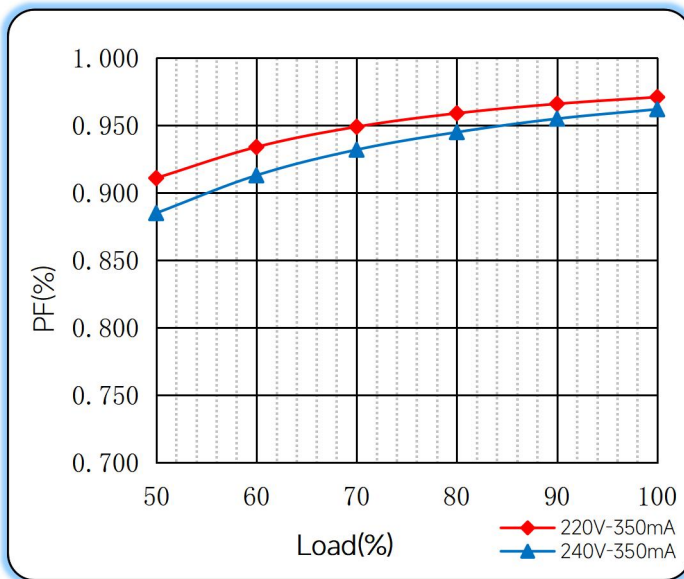
Lifetime vs. Temperature Curve



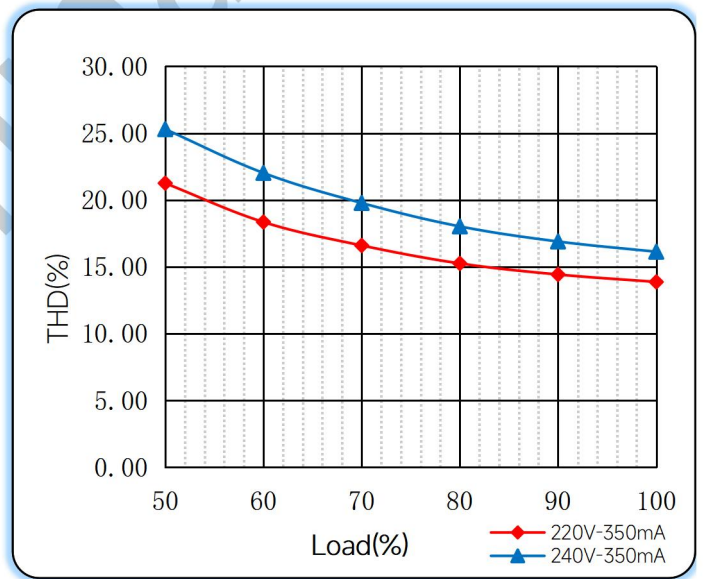
Efficiency vs. Load



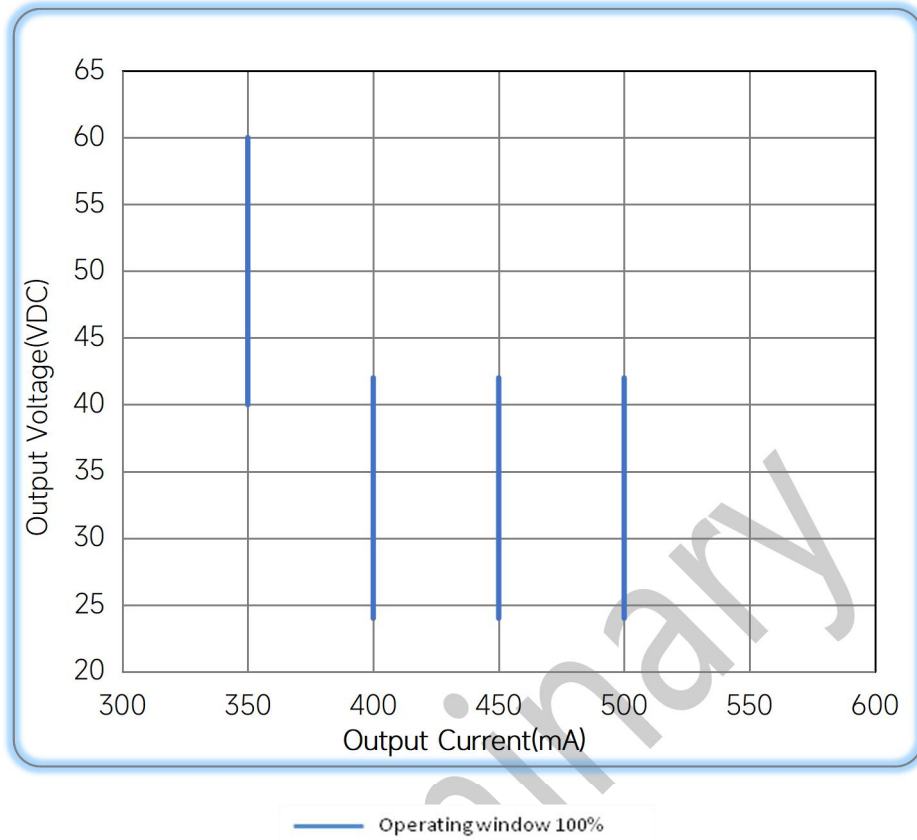
Power Factor Characteristics



THD vs. Load



◆ **Operating window**



◆ **Revision Updates**

| ITEM | BEFORE | AFTER | VERSION | DATE |
|--------------------------|------------|------------|---------|------------|
| Initial | | | A | 2023/08/23 |
| update | | | B | 2023/11/17 |
| Output LF current ripple | ±50%@350mA | ±70%@350mA | C | 2024/01/12 |

Remark: The final interpretation of the contents of the specification belongs to Eaglerise Electric & Electronic (China) Co., Ltd.

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