

## 20W Constant Voltage-LS Series



### Features

- Class II, SELV, independent
- Input Voltage 220-240VAC
- Protections: SCP/OLP/OVP/OTP
- Power Factor 0.85C
- Efficiency  $\geq 80\%$
- 5 years warranty
- 

### Applications

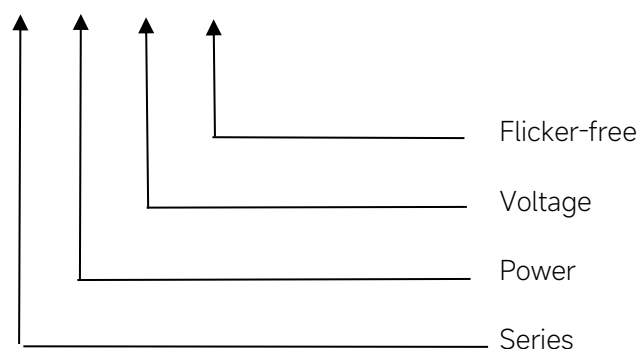
- LED strips

### ◆ Description

LS-20-XX MI is a 20W constant voltage LED driver that operates from 198-264Vac input with 12V or 24V output voltage. With it's compact dimensions from 115 x 45 x 28 mm it is easy to integrate in LED strips products. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

### ◆ Model cod

LS-20-XX MI



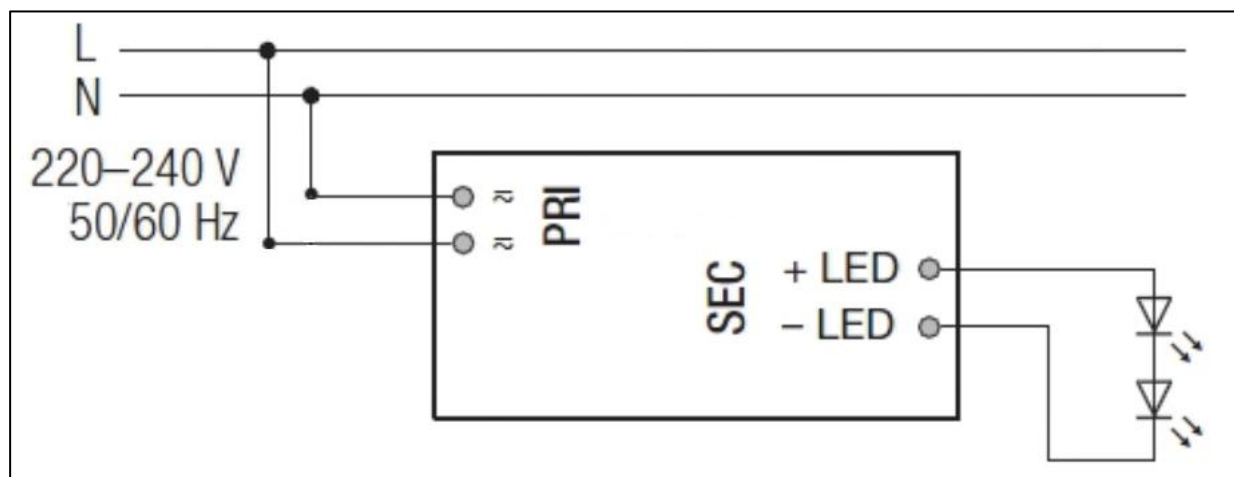
## ◆ Specification

|             |                                                                                                                                                                                                                                                                 |                                |           |
|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----------|
| Output      | Constant Voltage                                                                                                                                                                                                                                                | 12VDC                          | 24VDC     |
|             | Current Range                                                                                                                                                                                                                                                   | 0-1.67A                        | 0-0.83A   |
|             | Voltage Accuracy                                                                                                                                                                                                                                                | ±5%                            |           |
|             | Output HF current ripple(≥1KHz)                                                                                                                                                                                                                                 | ±5%                            |           |
|             | Output LF current ripple(≤120Hz)                                                                                                                                                                                                                                | ±5%                            |           |
|             | SVM                                                                                                                                                                                                                                                             | ≤0.8                           |           |
|             | Pst                                                                                                                                                                                                                                                             | ≤1                             |           |
|             | Efficiency(Typ.)                                                                                                                                                                                                                                                | 80%                            |           |
| Input       | Rated input voltage                                                                                                                                                                                                                                             | 220-240VAC                     |           |
|             | Range of input voltage                                                                                                                                                                                                                                          | 198-264VAC                     |           |
|             | Rated input voltage(DC)                                                                                                                                                                                                                                         | 198-254VDC                     |           |
|             | Frequency(Hz)                                                                                                                                                                                                                                                   | 0/50/60 Hz                     |           |
|             | Displacement factor                                                                                                                                                                                                                                             | ≥0.9                           |           |
|             | Power Factor                                                                                                                                                                                                                                                    | 0.85C                          |           |
|             | Input Current max                                                                                                                                                                                                                                               | 0.18A                          |           |
|             | Start-up time                                                                                                                                                                                                                                                   | < 0.5S                         |           |
|             | No Load Power                                                                                                                                                                                                                                                   | ≤0.5W                          |           |
|             | THD (Typ.)                                                                                                                                                                                                                                                      | < 44%                          |           |
| Protection  | Over Load Protection                                                                                                                                                                                                                                            | 105-150%                       |           |
|             |                                                                                                                                                                                                                                                                 | YES/Auto Resume                |           |
|             | Over Voltage Protection                                                                                                                                                                                                                                         | > 12.6VDC                      | > 25.2VDC |
|             |                                                                                                                                                                                                                                                                 | YES/Auto Resume                |           |
|             | Short circuit Protection                                                                                                                                                                                                                                        | YES/Auto Resume                |           |
|             | Over Temperature Protection                                                                                                                                                                                                                                     | YES/Auto Resume                |           |
| Environment | Operating Temperature                                                                                                                                                                                                                                           | -20℃~+45℃                      |           |
|             | Humidity                                                                                                                                                                                                                                                        | 20%-90%RH                      |           |
|             | Tc                                                                                                                                                                                                                                                              | 75℃                            |           |
|             | Storage Temperature                                                                                                                                                                                                                                             | -20℃~+60℃                      |           |
|             | Life time                                                                                                                                                                                                                                                       | > 50000h@Tc=70℃                |           |
| Surface     | Dimension                                                                                                                                                                                                                                                       | 115 x 45 x 28(LXWXH)mm         |           |
| standards   | EN 61347-1; EN61347-2-13; EN62384; EN55015; EN61000-3-2 ; EN61000-3-3; EN 61547;                                                                                                                                                                                |                                |           |
| Others      | ErP                                                                                                                                                                                                                                                             | EU 2019/2020                   |           |
|             | RoHS                                                                                                                                                                                                                                                            | RoHS (2011/65/EU) (EU)2015/863 |           |
| Note        | 1.All parameters NOT specially mentioned are measured at 230VAC input , full load and 25℃ of ambient temperature.<br>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. |                                |           |

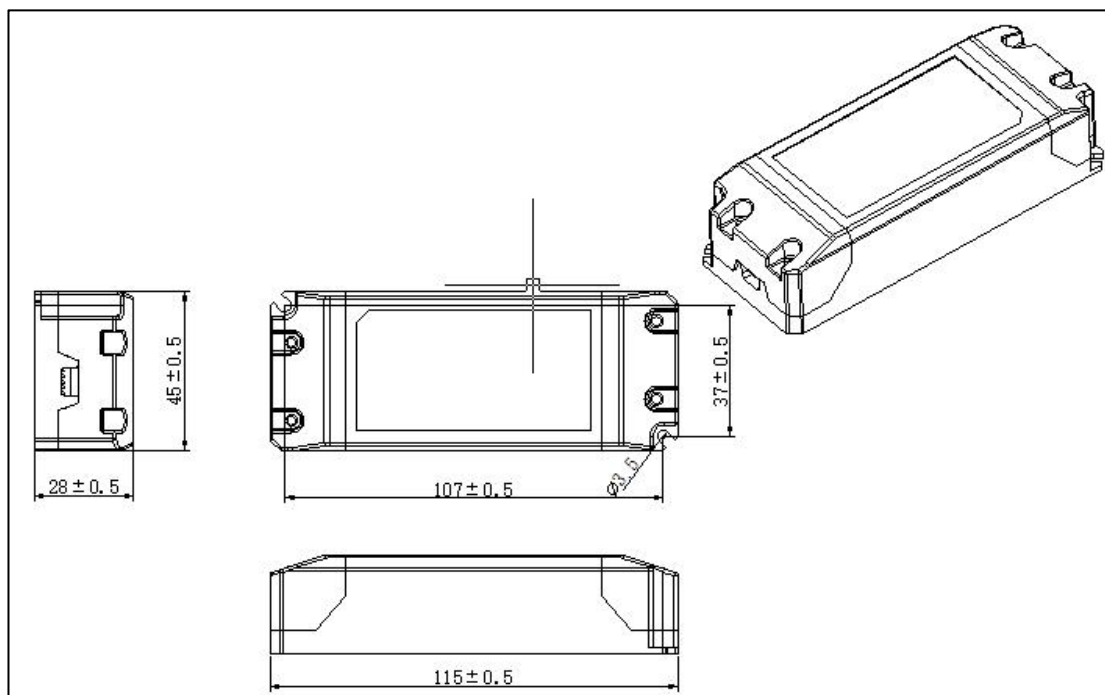
## ◆ Circuit Breaker

| $I_{peak}$ | $T_{width}$ | B10   | B16   | B20   | C10   | C16   | C20   |
|------------|-------------|-------|-------|-------|-------|-------|-------|
| 10A        | 95 $\mu$ s  | 44pcs | 71pcs | 88pcs | 41pcs | 71pcs | 88pcs |

## ◆ Wiring diagram



## ◆ 2D diagram

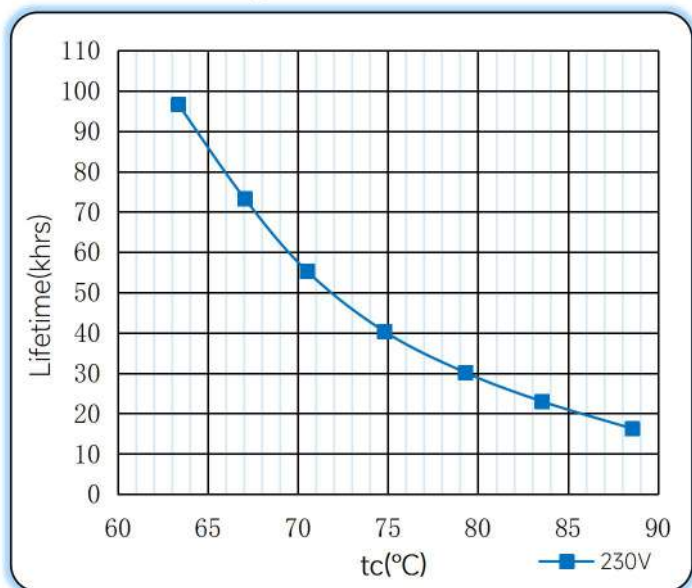


## ◆ Wiring & Connections

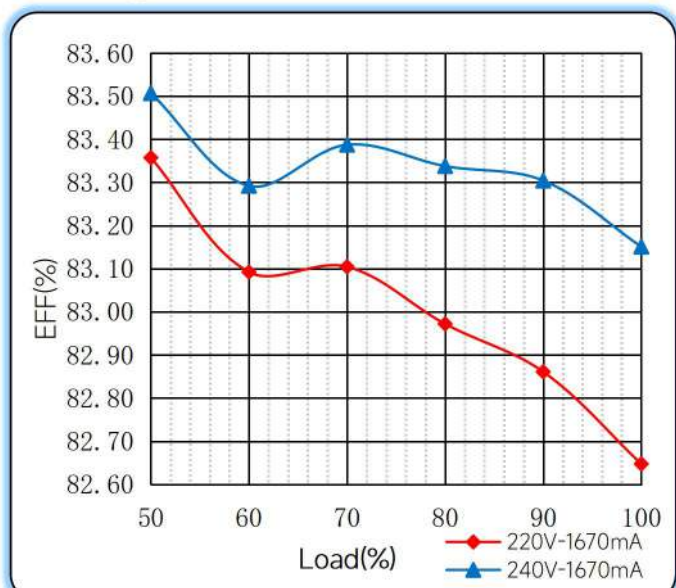
| Specification item |                           | Value (Unit )             |
|--------------------|---------------------------|---------------------------|
| Input              | Input wire cross-section  | 0.5...1.5 mm <sup>2</sup> |
|                    | Input wire gauge.         | 16...20 AWG 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

# ◆ Curve for LS-20-12 MI

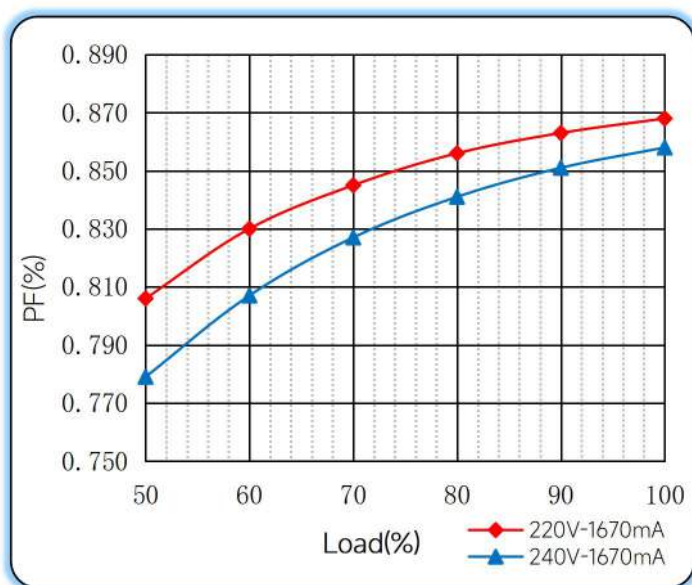
Lifetime vs. Temperature Curve



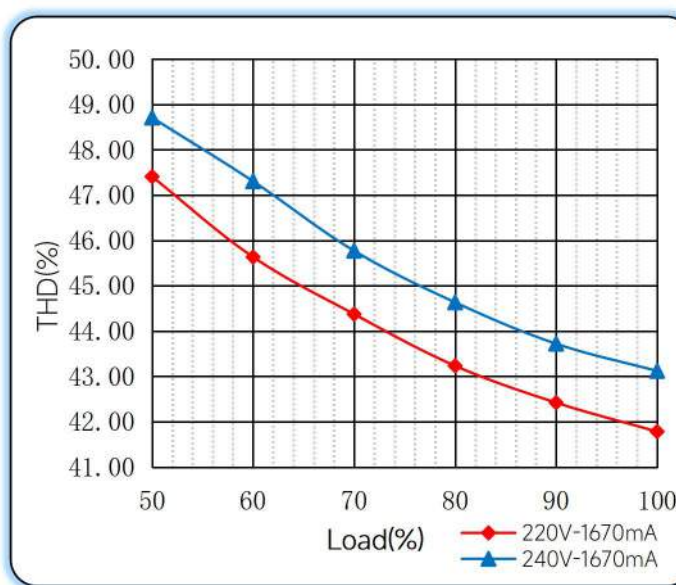
Efficiency vs. Load



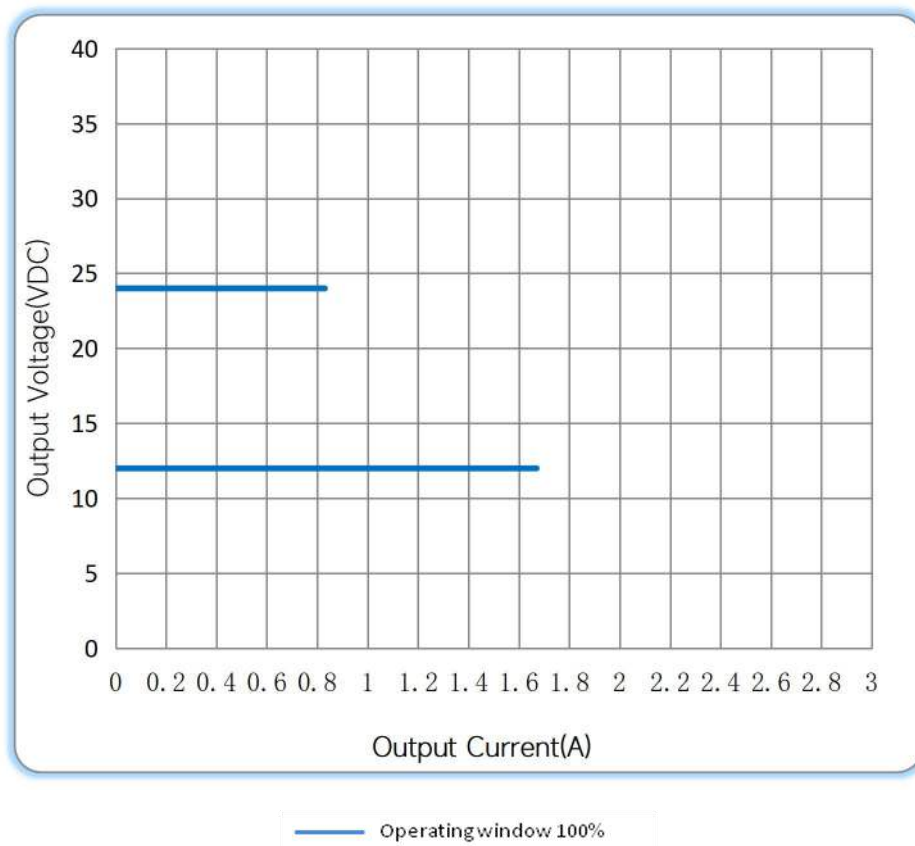
Power Factor Characteristics



THD vs. Load



## ◆ Operating window



## ◆ Revision Updates

| ITEM    | BEFORE | AFTER | VERSION | DATE       |
|---------|--------|-------|---------|------------|
| Initial |        |       | A       | 2022/05/15 |
|         |        |       |         |            |

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Manual