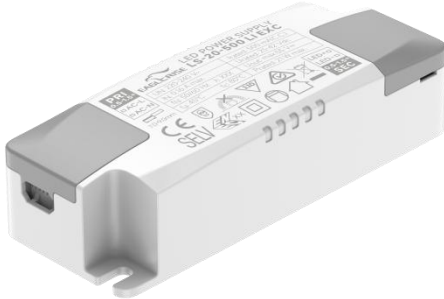


## 20W Constant Current power supply



■ Approve



### Features

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

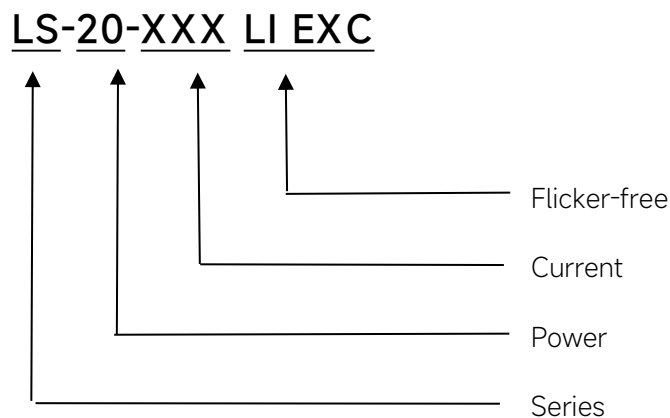
### Applications

- LED panel, LED down light  
LED spot light

### ◆ Description

LS-20-XXX LI EXC is a 20W constant current LED driver that operates from 198-264Vac input with 350mA to 700mA 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



## ◆ Specification

|             |                                                                                                                                                                                                                                                                  |                                |       |       |       |       |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-------|-------|-------|-------|
| Output      | Constant Current                                                                                                                                                                                                                                                 | 350mA                          | 400mA | 450mA | ..... | 700mA |
|             | Voltage Range                                                                                                                                                                                                                                                    | 40-60                          | 25-42 | 25-42 | ..... | 18-30 |
|             | Unload voltage Max.                                                                                                                                                                                                                                              | 75                             | 55    |       | ..... | 45    |
|             | Current Accuracy                                                                                                                                                                                                                                                 | ±5%                            |       |       |       |       |
|             | Output HF current ripple(≥1KHz)                                                                                                                                                                                                                                  | ±5%                            |       |       |       |       |
|             | Output LF current ripple(≤120Hz)                                                                                                                                                                                                                                 | ±5%                            |       |       |       |       |
|             | SVM                                                                                                                                                                                                                                                              | ≤0.4                           |       |       |       |       |
|             | P <sub>st</sub>                                                                                                                                                                                                                                                  | ≤1                             |       |       |       |       |
|             | Efficiency(Typ.)                                                                                                                                                                                                                                                 | 85%                            |       |       |       |       |
| Input       | Rated input voltage                                                                                                                                                                                                                                              | 220-240VAC                     |       |       |       |       |
|             | Range of input voltage                                                                                                                                                                                                                                           | 198-264VAC                     |       |       |       |       |
|             | Frequency(Hz)                                                                                                                                                                                                                                                    | 50/60 Hz                       |       |       |       |       |
|             | Displacement factor                                                                                                                                                                                                                                              | ≥0.7                           |       |       |       |       |
|             | Power Factor                                                                                                                                                                                                                                                     | 0.95                           |       |       |       |       |
|             | Input Current max                                                                                                                                                                                                                                                | 0.16A MAX                      |       |       |       |       |
|             | Start-up time                                                                                                                                                                                                                                                    | < 0.5S                         |       |       |       |       |
|             | No Load Power                                                                                                                                                                                                                                                    | ≤0.5W                          |       |       |       |       |
|             | THD (Typ.)                                                                                                                                                                                                                                                       | < 20%                          |       |       |       |       |
| Protection  | Over Load Protection                                                                                                                                                                                                                                             | 103-120%                       |       |       |       |       |
|             |                                                                                                                                                                                                                                                                  | YES/Auto Resume                |       |       |       |       |
|             | Over Voltage Protection                                                                                                                                                                                                                                          | 75VDC                          | 55VDC |       | ..... | 45VDC |
|             |                                                                                                                                                                                                                                                                  | YES/Auto Resume                |       |       |       |       |
| Environment | Short circuit Protection                                                                                                                                                                                                                                         | YES/Auto Resume                |       |       |       |       |
|             | Operating Temperature                                                                                                                                                                                                                                            | -20°C~+45°C                    |       |       |       |       |
|             | Humidity                                                                                                                                                                                                                                                         | 20%-90%RH                      |       |       |       |       |
|             | Tc                                                                                                                                                                                                                                                               | 80°C                           |       |       |       |       |
|             | Storage Temperature                                                                                                                                                                                                                                              | -25°C~+60°C                    |       |       |       |       |
| Surface     | Life time                                                                                                                                                                                                                                                        | > 50000h@Tc=70°C,230VAC        |       |       |       |       |
|             | Dimension                                                                                                                                                                                                                                                        | 100X38.2X25(LXWXH)mm           |       |       |       |       |
| standards   | EN 61347-1; EN61347-2-13; EN62384                                                                                                                                                                                                                                |                                |       |       |       |       |
| 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°C 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. |                                |       |       |       |       |

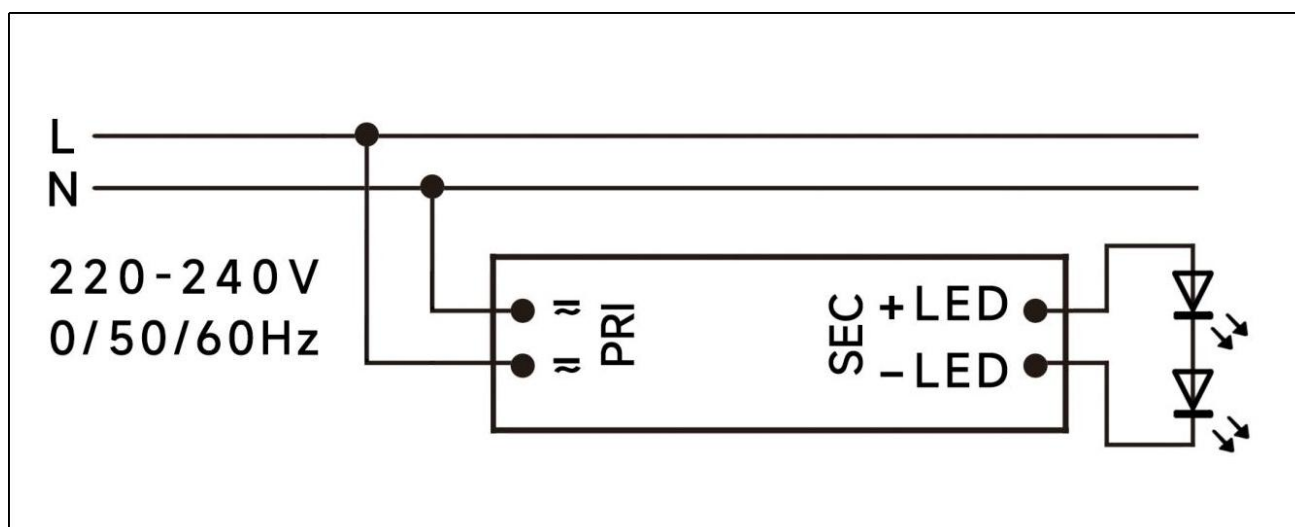
## ◆ Model list

| 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 LI EXC | 220-240       | 0.16        | 50/60          | 350          | 40-60         | 75                    | 21        |
| 2      | LS-20-400 LI EXC  |               |             |                | 400          | 25-42         | 55                    | 16.8      |
| 3      | LS-20-450 LI EXC  |               |             |                | 450          | 25-42         | 55                    | 18.9      |
| 4      | *LS-20-500 LI EXC |               |             |                | 500          | 25-42         | 55                    | 21        |
| 5      | LS-20-550 LI EXC  |               |             |                | 550          | 25-40         | 55                    | 22        |
| 6      | LS-20-600 LI EXC  |               |             |                | 600          | 25-40         | 55                    | 24        |
| 7      | *LS-20-700 LI EXC |               |             |                | 700          | 18-30         | 45                    | 21        |

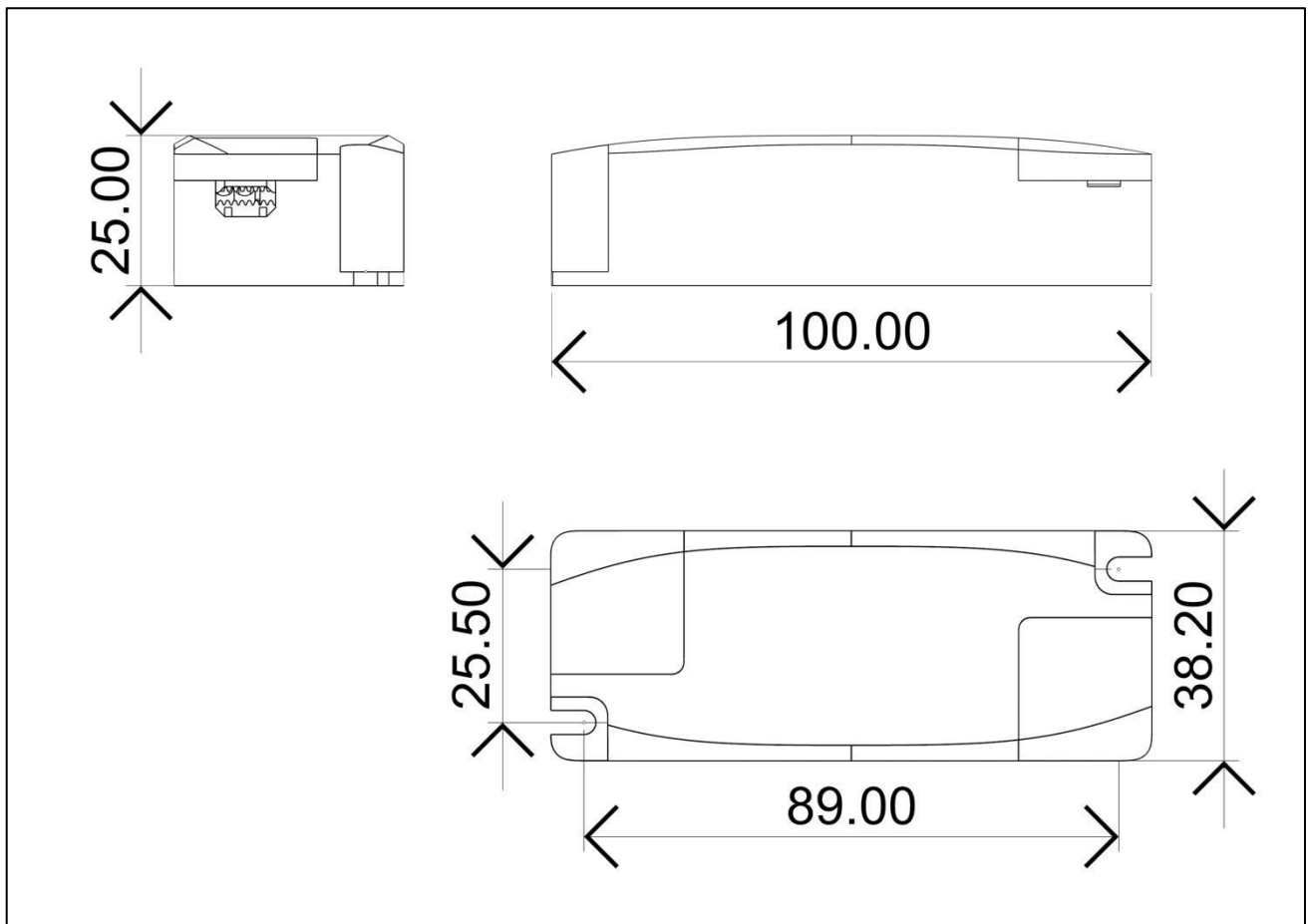
## ◆ Circuit Breaker

| I <sub>peak</sub> | T <sub>width</sub> | B10   | B16   | B20    | C10   | C16   | C20    |
|-------------------|--------------------|-------|-------|--------|-------|-------|--------|
| 11.9A             | 134μs              | 50pcs | 80pcs | 100pcs | 50pcs | 80pcs | 100pcs |

## ◆ Wiring diagram



## ◆ 2D diagram

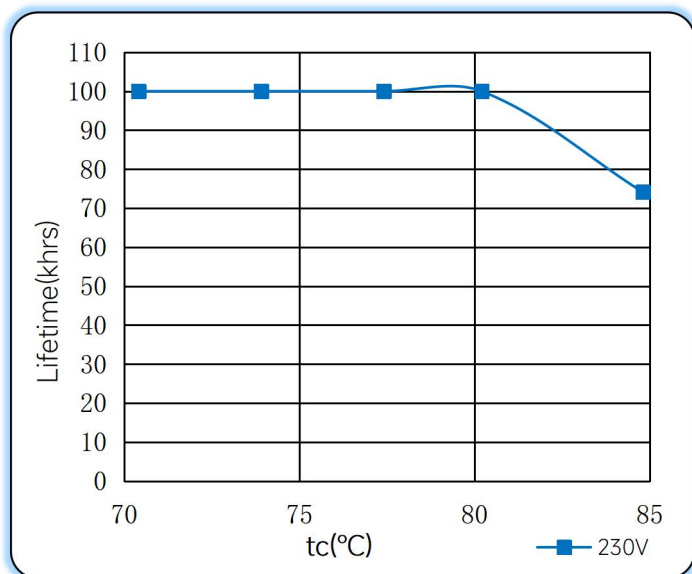


## ◆ Wiring & Connections

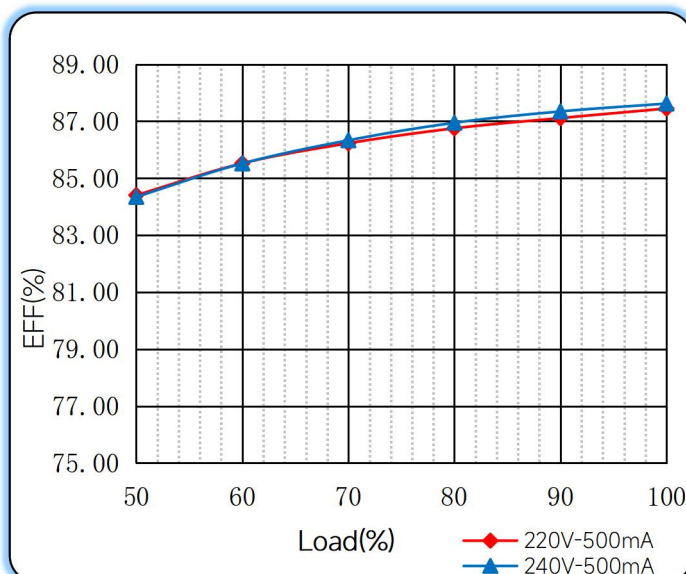
| Specification item |                           | Value (Unit ) |
|--------------------|---------------------------|---------------|
| Input              | Input wire cross-section  | 0.5...1.5 mm2 |
|                    | Input wire gauge.         | 16...20 AWG   |
|                    | Input wire strip length   | 7...9mm       |
| Output             | Output wire cross-section | 0.5...1.5 mm2 |
|                    | Output wire gauge.        | 16...20 AWG   |
|                    | Output wire strip length  | 7...9mm       |

# ◆ Curve for LS-20-500 LI EXC, $I_o=500mA$

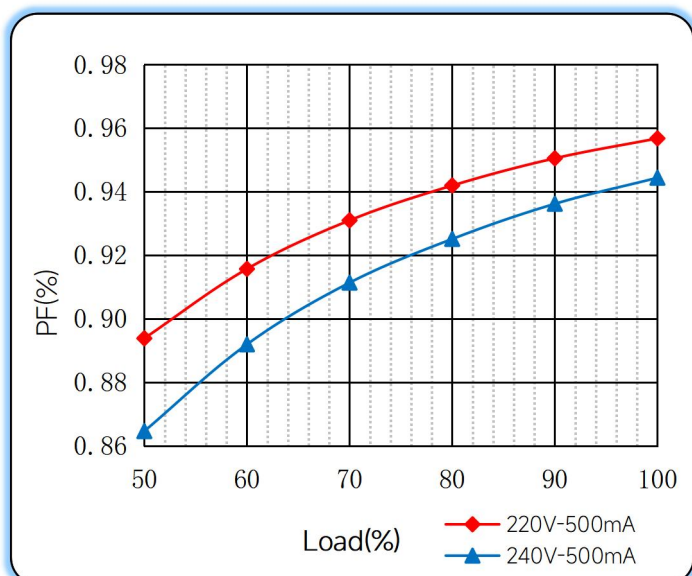
Lifetime vs. Temperature Curve



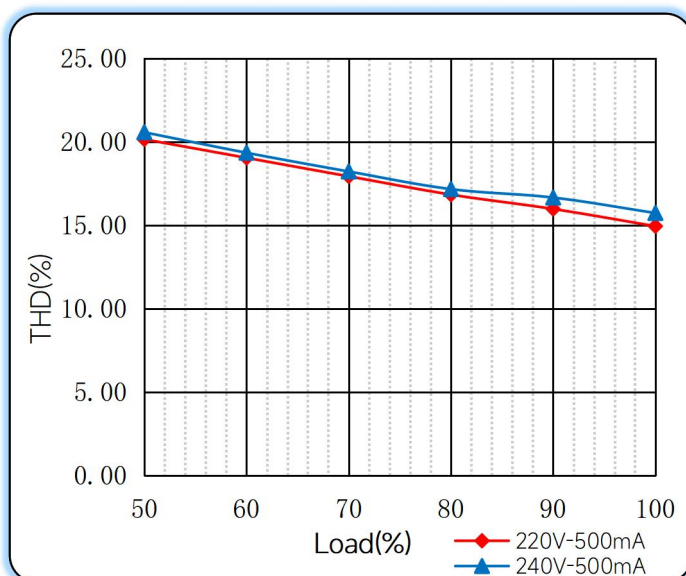
Efficiency vs. Load



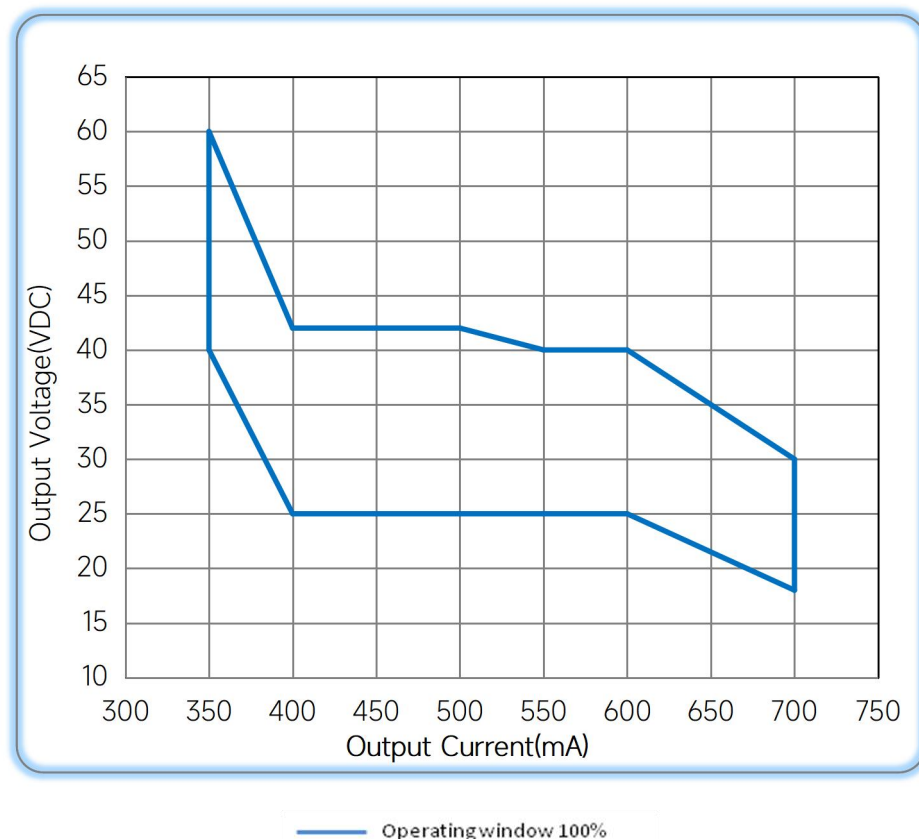
Power Factor Characteristics



THD vs. Load



## ◆ Operating window



## ◆ Revision Updates

| ITEM    | BEFORE | AFTER | VERSION | DATE       |
|---------|--------|-------|---------|------------|
| Initial |        |       | A       | 2022/08/08 |
|         |        |       |         |            |

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Manual