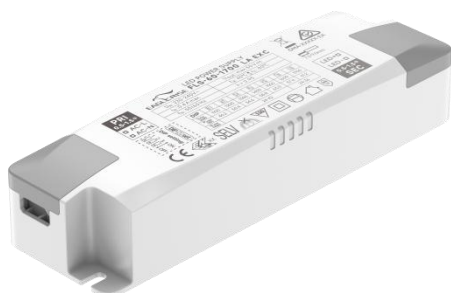


## 60W Constant Current power supply



■ Approve



### Features

- Class II, SELV, Independent
- Input Voltage: 220-240VAC
- Protections: SCP/OLP/OVP
- Power Factor: 0.85C-0.95
- Efficiency: 88%(Typ.)
- 5 years warranty
- IP20

### Applications

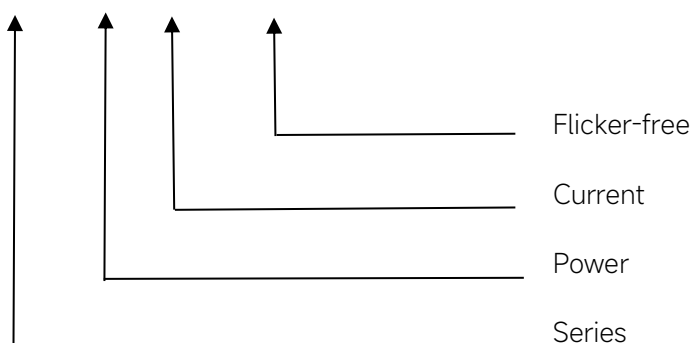
- LED panel, LED down light
- LED spot light

### ◆ Description

FLS-60-1700 LA EXC is a 60W constant current LED driver with 1100 to 1700mA output current. With it's compact dimensions from 150x 45x 30mm. It is easy to integrate in LED Panel, spot and down lights product. To ensure trouble-free operation, protection is provided against output short circuit and over Load.

### ◆ Model code

#### FLS-60-1700 LA EXC



## ◆ Specification

|             |                                                                                                                                                                                                                                                                  |                                |        |        |     |        |
|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|--------|--------|-----|--------|
| Output      | Constant Current (mA)                                                                                                                                                                                                                                            | 1100mA                         | 1200mA | 1300mA | ... | 1700mA |
|             | Voltage Range(VDC)                                                                                                                                                                                                                                               | 24-42V                         |        |        |     |        |
|             | Unload voltage Max.(VDC)                                                                                                                                                                                                                                         | 55VDC                          |        |        |     |        |
|             | Current Accuracy                                                                                                                                                                                                                                                 | ±5%                            |        |        |     |        |
|             | Output HF current ripple(≥1KHz)                                                                                                                                                                                                                                  | ±5%                            |        |        |     |        |
|             | Output LF current ripple(≤120Hz)                                                                                                                                                                                                                                 | ±5%                            |        |        |     |        |
|             | SVM                                                                                                                                                                                                                                                              | ≤0.4                           |        |        |     |        |
|             | Pst                                                                                                                                                                                                                                                              | ≤1                             |        |        |     |        |
|             | Efficiency(Typ.)                                                                                                                                                                                                                                                 | 88%@220-240VAC, full load      |        |        |     |        |
| Input       | Rated input voltage(VAC)                                                                                                                                                                                                                                         | 220-240VAC                     |        |        |     |        |
|             | Range of input voltage(VAC)                                                                                                                                                                                                                                      | 198-264VAC                     |        |        |     |        |
|             | Range of input voltage(VDC)                                                                                                                                                                                                                                      | 176-280VDC                     |        |        |     |        |
|             | Frequency(Hz)                                                                                                                                                                                                                                                    | 0/50/60 Hz                     |        |        |     |        |
|             | Displacement factor                                                                                                                                                                                                                                              | ≥0.9                           |        |        |     |        |
|             | Power Factor                                                                                                                                                                                                                                                     | 0.85C-0.95                     |        |        |     |        |
|             | Input Current max                                                                                                                                                                                                                                                | 0.4A                           |        |        |     |        |
|             | Start-up time                                                                                                                                                                                                                                                    | < 0.5S                         |        |        |     |        |
|             | No Load Power                                                                                                                                                                                                                                                    | ≤0.5W                          |        |        |     |        |
|             | THD (Typ.)                                                                                                                                                                                                                                                       | <10%@220-240VAC, full load     |        |        |     |        |
| Protection  | Over Load Protection                                                                                                                                                                                                                                             | 103-130%                       |        |        |     |        |
|             |                                                                                                                                                                                                                                                                  | YES/Auto Resume                |        |        |     |        |
|             | Over Voltage Protection                                                                                                                                                                                                                                          | 50VDC                          |        |        |     |        |
|             |                                                                                                                                                                                                                                                                  | YES/Auto Resume                |        |        |     |        |
|             | Short circuit Protection                                                                                                                                                                                                                                         | YES/Auto Resume                |        |        |     |        |
|             | Over Temperature Protection                                                                                                                                                                                                                                      | YES/Auto Resume                |        |        |     |        |
| Environment | Operating Temperature                                                                                                                                                                                                                                            | -20°C~+45°C                    |        |        |     |        |
|             | Humidity                                                                                                                                                                                                                                                         | 20%-90%RH                      |        |        |     |        |
|             | Tc                                                                                                                                                                                                                                                               | 80°C                           |        |        |     |        |
|             | Storage Temperature                                                                                                                                                                                                                                              | -25°C~+60°C                    |        |        |     |        |
|             | Life time                                                                                                                                                                                                                                                        | > 50000h@Tc=80°C               |        |        |     |        |
| Surface     | Dimension                                                                                                                                                                                                                                                        | 150x45x30mm                    |        |        |     |        |
| standards   | EN 61347-1,EN 61347-2-13; IEC 61347-1,IEC 61347-2-13; GB 19510.1,GB 19510.14; EN 62384; EN IEC 55015,EN IEC 61000-3-2,EN 61000-3-3; GB/T 17743,GB 17625.1; 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°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. |                                |        |        |     |        |

## ◆ Parameter

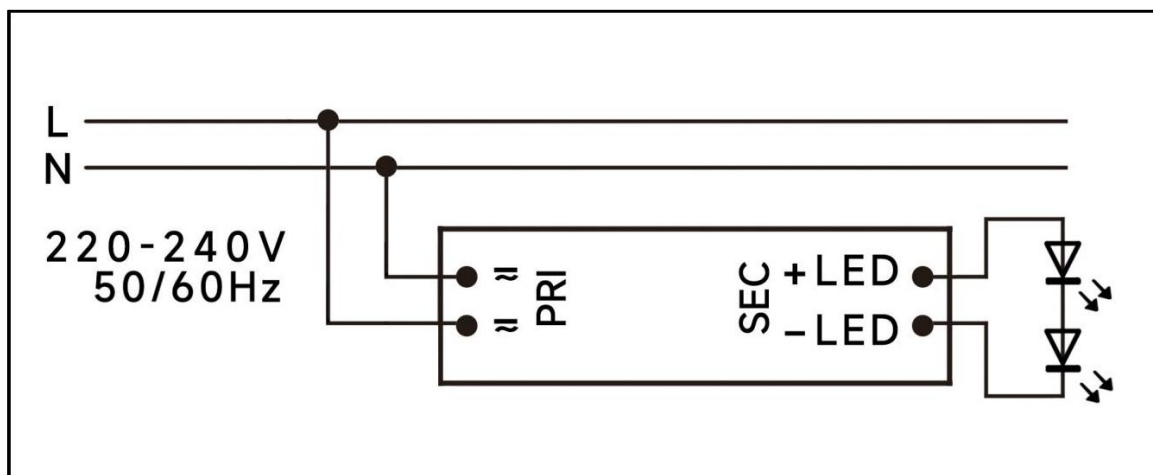
| Number | Output          |                  |                             |              | Switch position |    |    |
|--------|-----------------|------------------|-----------------------------|--------------|-----------------|----|----|
|        | Current<br>(mA) | Voltage<br>(VDC) | Voltage<br>No load<br>(VDC) | Power<br>(W) | 1               | 2  | 3  |
| 1      | 1100mA          | 24-42            | 55                          | 46.2         | --              | -- | -- |
| 2      | 1200mA          |                  |                             | 50.4         | ON              | -- | -- |
| 3      | 1300mA          |                  |                             | 54.6         | --              | ON | -- |
| 4      | 1400mA          |                  |                             | 58.8         | --              | -- | ON |
| 5      | 1500mA          |                  |                             | 63           | ON              | -- | ON |
| 6      | 1600mA          | 24-36            | 55                          | 57.6         | --              | ON | ON |
| 7      | 1700mA          | 24-36            |                             | 61.2         | ON              | ON | ON |

\* Factory default

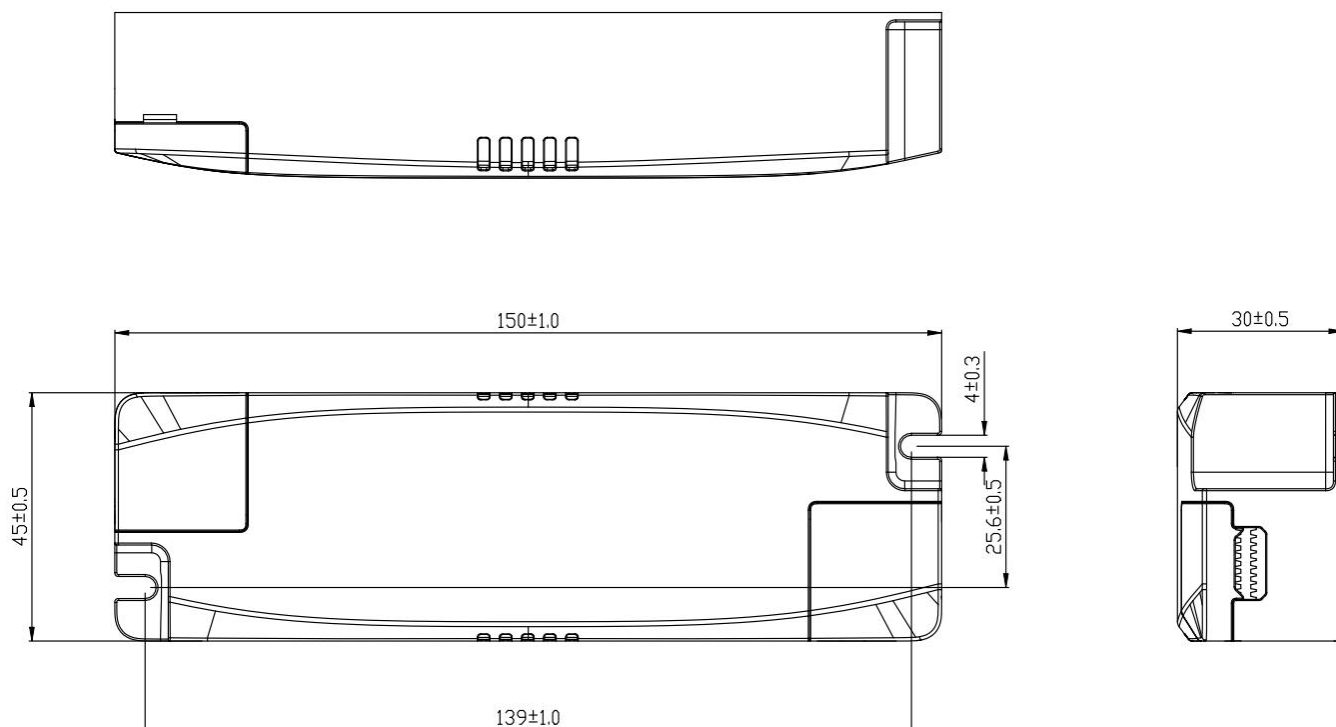
## ◆ Circuit Breaker

| $I_{peak}$ | Twidth      | B10  | B16   | B20   | C10   | C16   | C20   |
|------------|-------------|------|-------|-------|-------|-------|-------|
| 45.8A      | 222 $\mu$ s | 8pcs | 12pcs | 16pcs | 13pcs | 21pcs | 26pcs |

## ◆ Wiring diagram



## ◆ 2D diagram

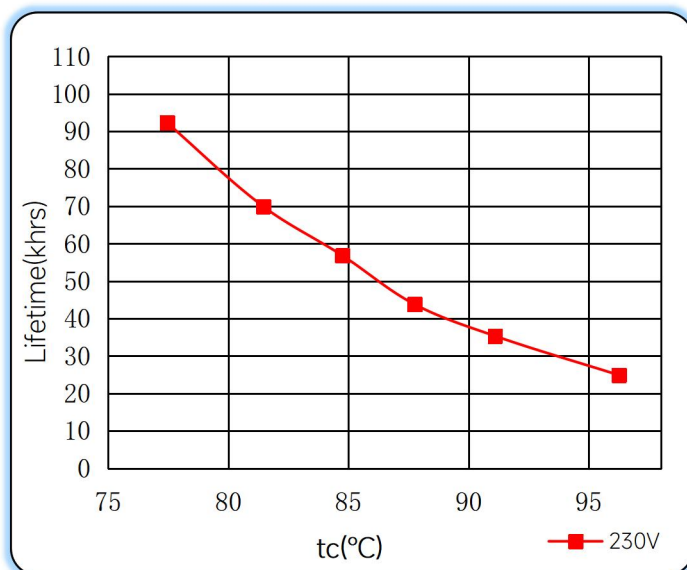


## ◆ Wiring & Connections

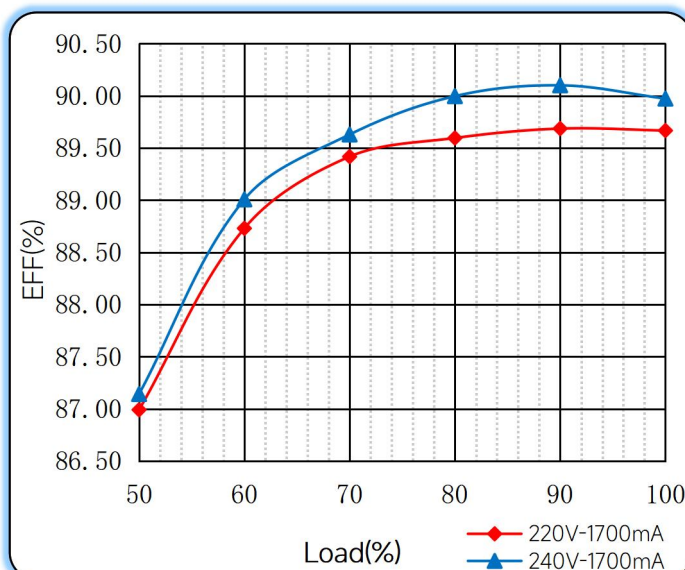
| Specification item |                           | Value (Unit )             |
|--------------------|---------------------------|---------------------------|
| Input              | Input wire cross-section  | 0.5...1.5 mm <sup>2</sup> |
|                    | Input wire gauge.         | 16...20 AWG               |
|                    | 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 FLS-60-1700 LA EXC, $I_o=1700\text{mA}$

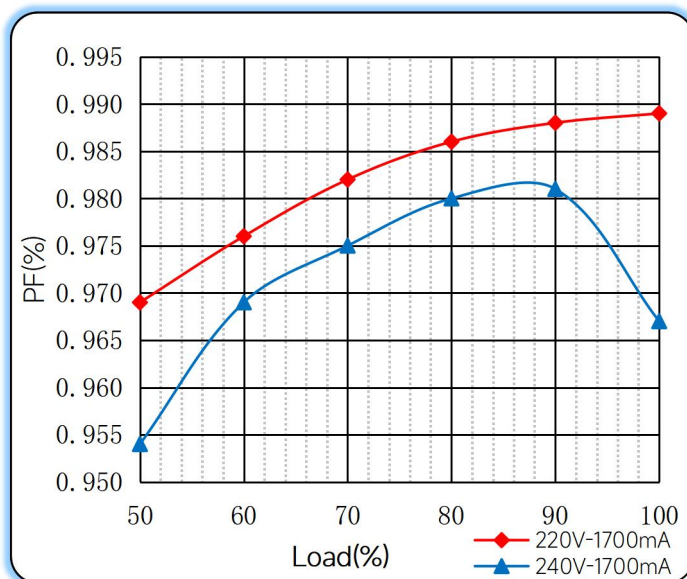
### Lifetime vs. Temperature Curve



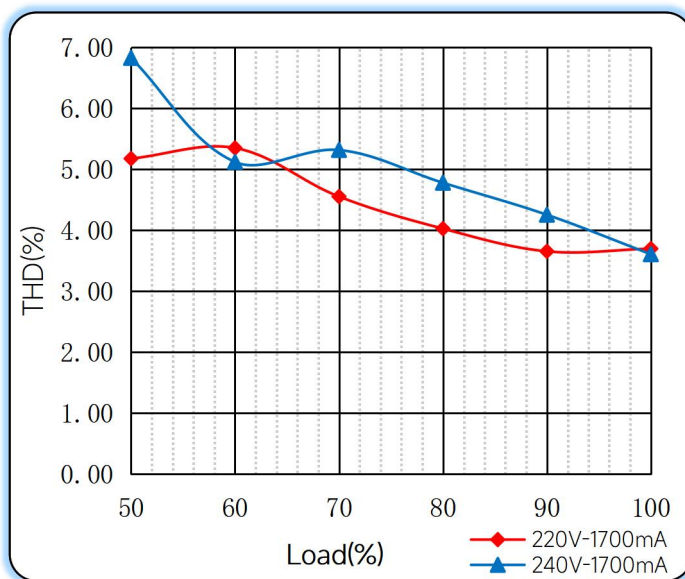
### Efficiency vs. Load



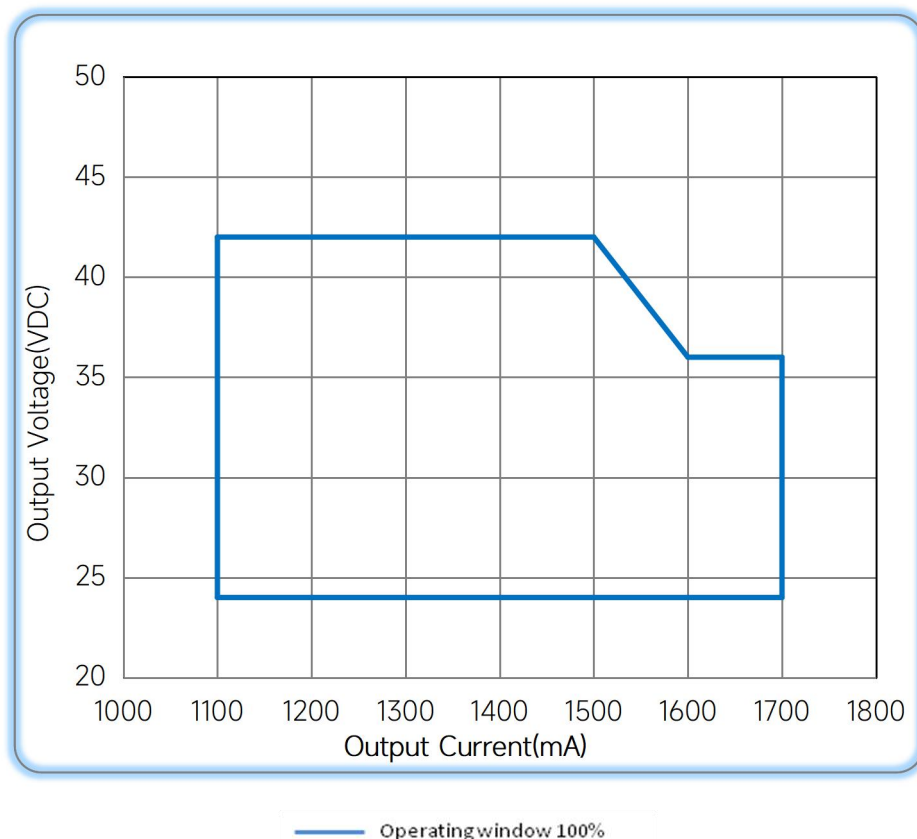
### Power Factor Characteristics



### THD vs. Load



## ◆ Operating window



## ◆ Revision Updates

| ITEM                     | BEFORE             | AFTER              | VERSION | DATE       |
|--------------------------|--------------------|--------------------|---------|------------|
| Initial                  |                    |                    | A       | 2022/05/15 |
| Curve                    |                    | Added              | B       | 2022/11/30 |
| Name                     | FLS-60-1700 LD ECO | FLS-60-1700 LA EXC | C       | 2022/12/10 |
| Unload voltage Max.(VDC) | 50VDC              | 55VDC              | D       | 2023/04/07 |

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