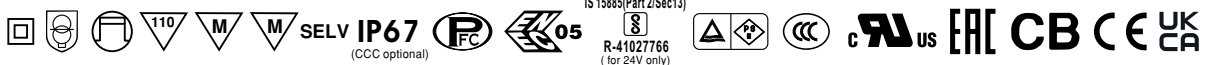




60W Constant Voltage + Constant Current LED Driver

**LPF-60** series

User's Manual



## ■ Features

- Constant Voltage + Constant Current mode output
- Plastic housing with Class II design
- Built-in active PFC function
- Class 2 power unit
- Fully encapsulated with IP67 level
- Typical lifetime > 50,000 hours
- 5 years warranty

## ■ Applications

- LED panel lighting
- LED downlight
- LED decorative lighting
- LED tunnel lighting
- Moving sign

## ■ GTIN CODE

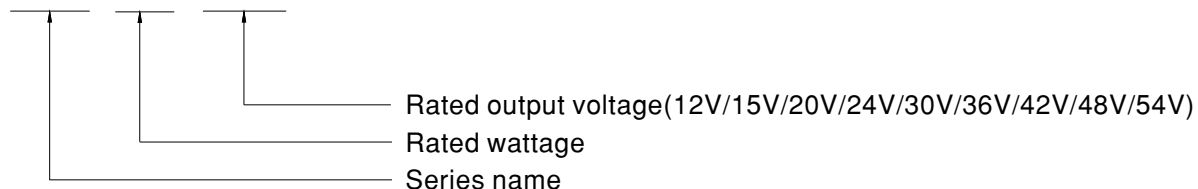
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

## ■ Description

LPF-60 series is a 60W AC/DC LED driver featuring the dual modes constant voltage and constant current output. LPF-60 operates from 90~305VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the high efficiency up to 90%, with the fanless design, the entire series is able to operate for -40°C ~ +80°C case temperature under free air convection. The entire series is rated with IP67 ingress protection level and is suitable to work for a variety of applications at dry, damp or wet locations.

## ■ Model Encoding

**LPF - 60 - 20**





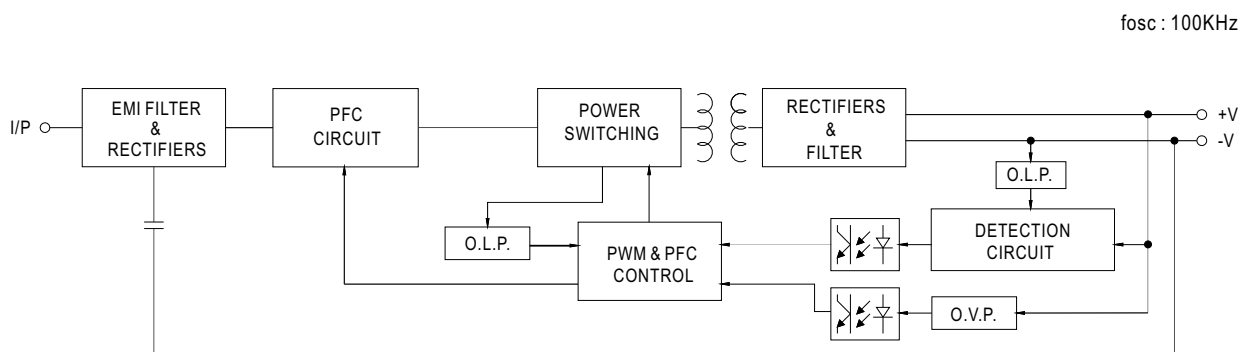
## 60W Constant Voltage + Constant Current LED Driver

## LPF-60 series

## SPECIFICATION

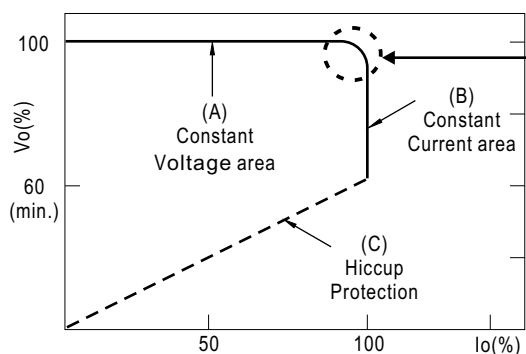
| MODEL        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | LPF-60-12                                                                                                                                                                                                                            | LPF-60-15  | LPF-60-20 | LPF-60-24  | LPF-60-30 | LPF-60-36  | LPF-60-42  | LPF-60-48  | LPF-60-54  |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|-----------|------------|------------|------------|------------|
| OUTPUT       | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 12V                                                                                                                                                                                                                                  | 15V        | 20V       | 24V        | 30V       | 36V        | 42V        | 48V        | 54V        |
|              | CONSTANT CURRENT REGION <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 7.2 ~ 12V                                                                                                                                                                                                                            | 9 ~ 15V    | 12 ~ 20V  | 14.4 ~ 24V | 18 ~ 30V  | 21.6 ~ 36V | 25.2 ~ 42V | 28.8 ~ 48V | 32.4 ~ 54V |
|              | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 5A                                                                                                                                                                                                                                   | 4A         | 3A        | 2.5A       | 2A        | 1.67A      | 1.43A      | 1.25A      | 1.12A      |
|              | RATED POWER <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 60W                                                                                                                                                                                                                                  | 60W        | 60W       | 60W        | 60W       | 60.12W     | 60.06W     | 60W        | 60.48W     |
|              | RIPPLE & NOISE (max.) <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 150mVp-p                                                                                                                                                                                                                             | 150mVp-p   | 150mVp-p  | 150mVp-p   | 200mVp-p  | 250mVp-p   | 250mVp-p   | 250mVp-p   | 350mVp-p   |
|              | VOLTAGE TOLERANCE <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ±4.0%                                                                                                                                                                                                                                | ±4.0%      | ±4.0%     | ±4.0%      | ±4.0%     | ±4.0%      | ±4.0%      | ±4.0%      | ±4.0%      |
|              | LINE REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±0.5%                                                                                                                                                                                                                                | ±0.5%      | ±0.5%     | ±0.5%      | ±0.5%     | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%      |
|              | LOAD REGULATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ±2.0%                                                                                                                                                                                                                                | ±1.5%      | ±1.0%     | ±0.5%      | ±0.5%     | ±0.5%      | ±0.5%      | ±0.5%      | ±0.5%      |
|              | SETUP, RISE TIME <small>Note.6</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1000ms, 80ms / 115VAC    500ms, 80ms / 230VAC                                                                                                                                                                                        |            |           |            |           |            |            |            |            |
|              | HOLD UP TIME (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 16ms/230VAC    16ms/115VAC                                                                                                                                                                                                           |            |           |            |           |            |            |            |            |
| INPUT        | VOLTAGE RANGE <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 90 ~ 305VAC    127 ~ 431VDC<br>(Please refer to "STATIC CHARACTERISTIC" section)                                                                                                                                                     |            |           |            |           |            |            |            |            |
|              | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 47 ~ 63Hz                                                                                                                                                                                                                            |            |           |            |           |            |            |            |            |
|              | POWER FACTOR                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | PF ≥ 0.97/115VAC, PF ≥ 0.95/230VAC, PF ≥ 0.92/277VAC@full load<br>(Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)                                                                                                       |            |           |            |           |            |            |            |            |
|              | TOTAL HARMONIC DISTORTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | THD< 20% (@load≥60%/115VC,230VAC; @load≥75%/277VAC)<br>(Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)                                                                                                                    |            |           |            |           |            |            |            |            |
|              | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 86%                                                                                                                                                                                                                                  | 87%        | 88%       | 89%        | 90%       | 90%        | 90%        | 90%        | 90%        |
|              | AC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.8A / 115VAC    0.4A / 230VAC    0.32A/277VAC                                                                                                                                                                                       |            |           |            |           |            |            |            |            |
|              | INRUSH CURRENT(Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | COLD START 55A(twidth=270μs measured at 50% Ipeak) at 230VAC; Per NEMA 410                                                                                                                                                           |            |           |            |           |            |            |            |            |
|              | MAX. No. of PSUs on 16A CIRCUIT BREAKER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 8 units (circuit breaker of type B) / 14 units (circuit breaker of type C) at 230VAC                                                                                                                                                 |            |           |            |           |            |            |            |            |
|              | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <0.75mA / 240VAC                                                                                                                                                                                                                     |            |           |            |           |            |            |            |            |
| PROTECTION   | OVER CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 95 ~ 108%<br>Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                      |            |           |            |           |            |            |            |            |
|              | SHORT CIRCUIT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                 |            |           |            |           |            |            |            |            |
|              | OVER VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 15 ~ 17V                                                                                                                                                                                                                             | 17.5 ~ 21V | 23 ~ 27V  | 28 ~ 35V   | 34 ~ 40V  | 41 ~ 49V   | 46 ~ 54V   | 54 ~ 63V   | 59 ~ 66V   |
|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Shut down and latch off o/p voltage, re-power on to recover                                                                                                                                                                          |            |           |            |           |            |            |            |            |
|              | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Shut down o/p voltage, re-power on to recover                                                                                                                                                                                        |            |           |            |           |            |            |            |            |
| ENVIRONMENT  | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Tcase=-40 ~ +80℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)                                                                                                                                                              |            |           |            |           |            |            |            |            |
|              | MAX. CASE TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Tcase=+80℃                                                                                                                                                                                                                           |            |           |            |           |            |            |            |            |
|              | WORKING HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 20 ~ 95% RH non-condensing                                                                                                                                                                                                           |            |           |            |           |            |            |            |            |
|              | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | -40 ~ +80℃, 10 ~ 95% RH                                                                                                                                                                                                              |            |           |            |           |            |            |            |            |
|              | TEMP. COEFFICIENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | ±0.03%/℃ (0 ~ 50℃)                                                                                                                                                                                                                   |            |           |            |           |            |            |            |            |
|              | VIBRATION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                                                                                              |            |           |            |           |            |            |            |            |
| SAFETY & EMC | SAFETY STANDARDS <small>Note.8</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UL8750, CSA C22.2 No. 250.0-08, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384, IP67, J61347-1, J61347-2-13, BIS IS15885(for 24V only), EAC TP TC 004,GB19510.1,GB19510.14 approved ; design refer to UL60950-1 |            |           |            |           |            |            |            |            |
|              | WITHSTAND VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | I/P-O/P:3.75KVAC                                                                                                                                                                                                                     |            |           |            |           |            |            |            |            |
|              | ISOLATION RESISTANCE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                                                                                                                                            |            |           |            |           |            |            |            |            |
|              | EMC EMISSION <small>Note.8</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to BS EN/EN55015,BS EN/EN61000-3-2 Class C (@load ≥ 60%) ; BS EN/EN61000-3-3, GB/T 17743 , GB17625.1, EAC TP TC 020                                                                                                       |            |           |            |           |            |            |            |            |
| OTHERS       | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11; BS EN/EN61547, light industry level (surge immunity Line-Line 2KV), EAC TP TC 020                                                                                                      |            |           |            |           |            |            |            |            |
|              | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 3786.9K hrs min.    Telcordia SR-332 (Bellcore) ;    440.6Khrs min.    MIL-HDBK-217F (25℃)                                                                                                                                           |            |           |            |           |            |            |            |            |
|              | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 162.5*43*32mm (L*W*H)                                                                                                                                                                                                                |            |           |            |           |            |            |            |            |
|              | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.45Kg; 32pcs/15.4Kg/0.93CUFT                                                                                                                                                                                                        |            |           |            |           |            |            |            |            |
| NOTE         | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.</p> <p>2. Please refer to "DRIVING METHODS OF LED MODULE".</p> <p>3. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</p> <p>4. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</p> <p>6. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.</p> <p>7. The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.<br/>(as available on <a href="https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf">https://www.meanwell.com/Upload/PDF/EMI_statement_en.pdf</a>)</p> <p>8. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without permanently connected to the mains.</p> <p>9. This series meets the typical life expectancy of &gt;50,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 70℃ or less.</p> <p>10. Please refer to the warranty statement on MEAN WELL's website at <a href="http://www.meanwell.com">http://www.meanwell.com</a></p> <p>11. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>12. For any application note and IP water proof function installation caution, please refer our user manual before using.<br/><a href="https://www.meanwell.com/Upload/PDF/LED_EN.pdf">https://www.meanwell.com/Upload/PDF/LED_EN.pdf</a></p> <p>※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a></p> |                                                                                                                                                                                                                                      |            |           |            |           |            |            |            |            |

## ■ BLOCK DIAGRAM



## ■ DRIVING METHODS OF LED MODULE

※ This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.

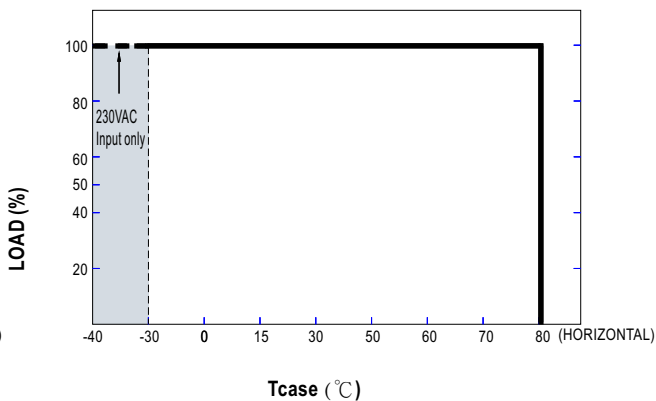
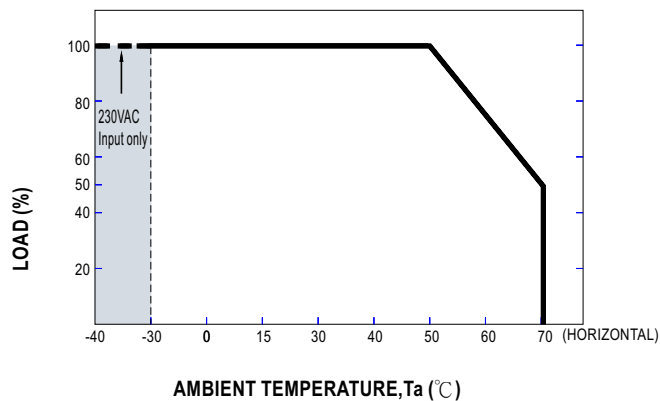


Typical output current normalized by rated current (%)

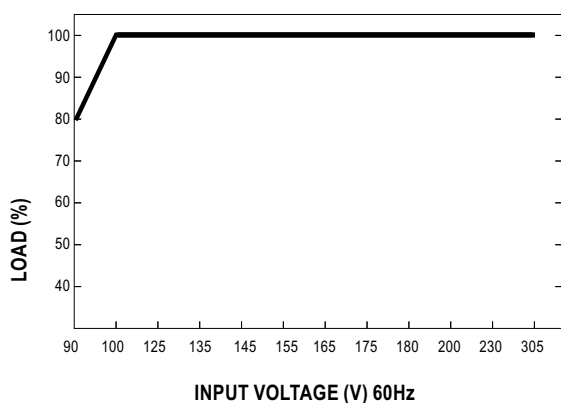
In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Should there be any compatibility issues, please contact MEAN WELL.

### ■ OUTPUT LOAD vs TEMPERATURE



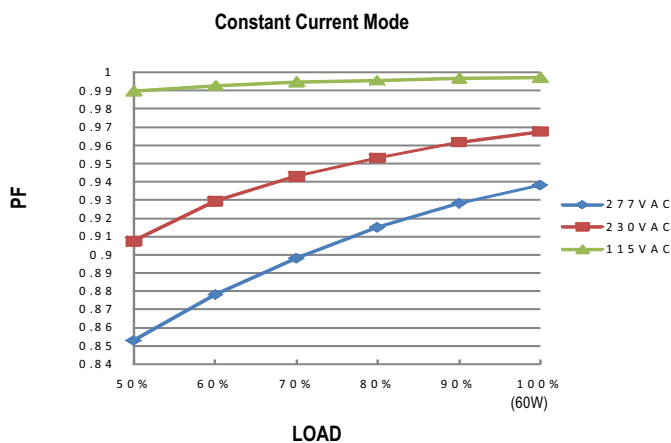
### ■ STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

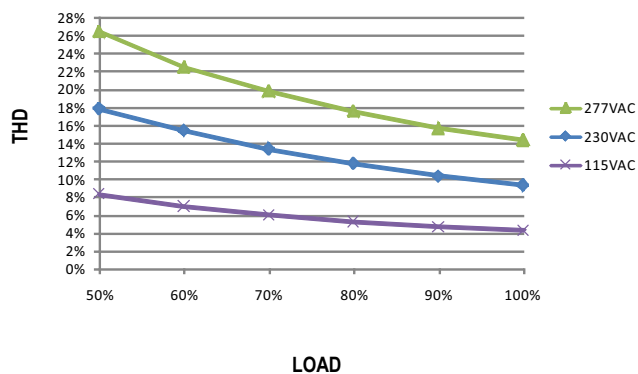
### ■ POWER FACTOR (PF) CHARACTERISTIC

※  $T_{case}$  at 70°C



### ■ TOTAL HARMONIC DISTORTION (THD)

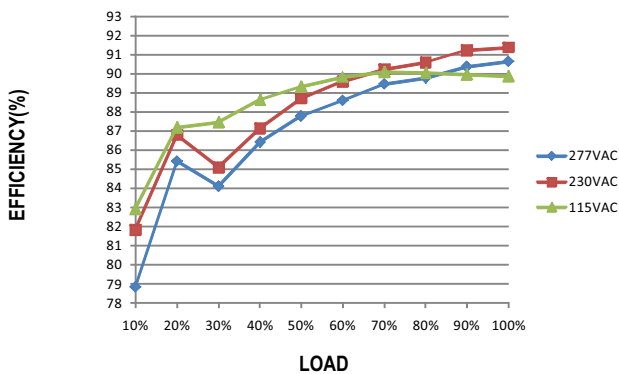
※ 48V Model,  $T_{case}$  at 70°C



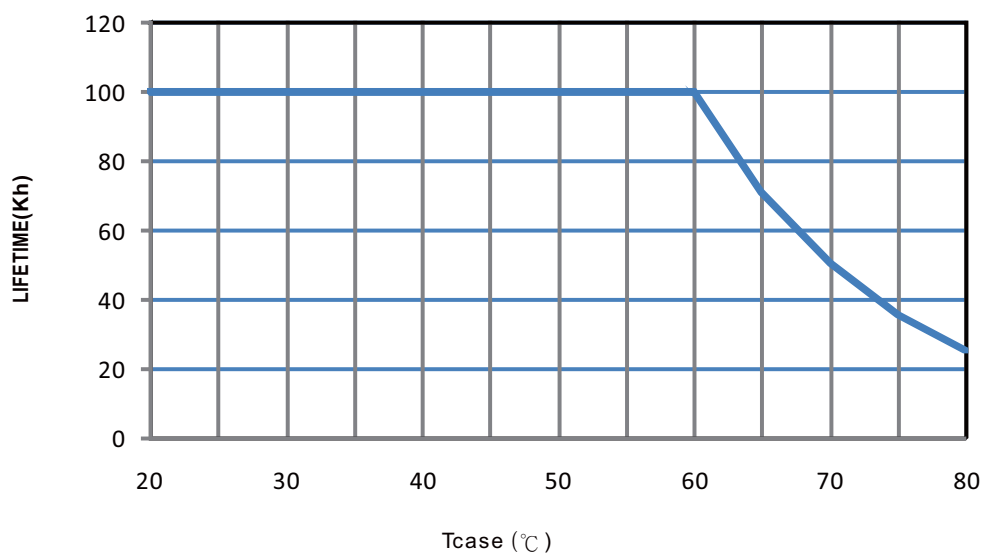
### ■ EFFICIENCY vs LOAD

LPF-60 series possess superior working efficiency that up to 90% can be reached in field applications.

※ 48V Model,  $T_{case}$  at 70°C

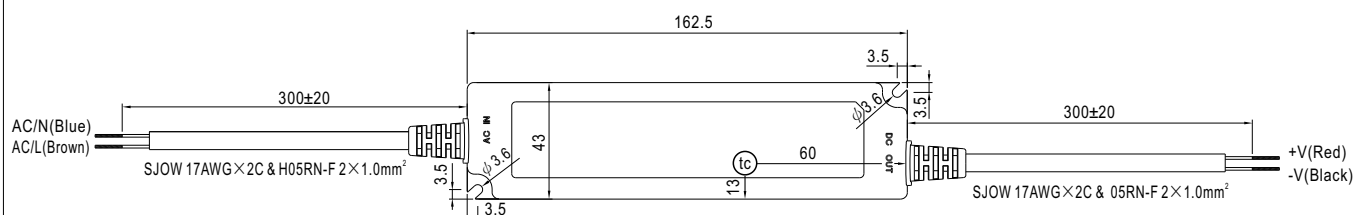


■ LIFE TIME

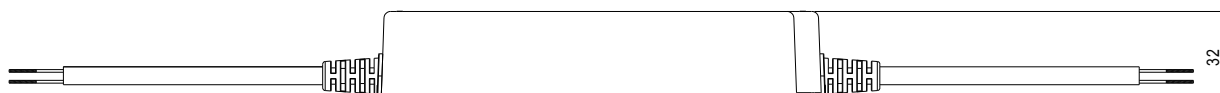


## MECHANICAL SPECIFICATION

CASE NO.: LPF-60B Unit:mm Tolerance:±1



• (tc) : Max. Case Temperature



## Recommend Mounting Direction



## INSTALLATION MANUAL

Please refer to : <http://www.meanwell.com/manual.html>

 [www.simpex.ch](http://www.simpex.ch)

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