



## ■ 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>50000 hours
- 5 years warranty

## ■ Applications

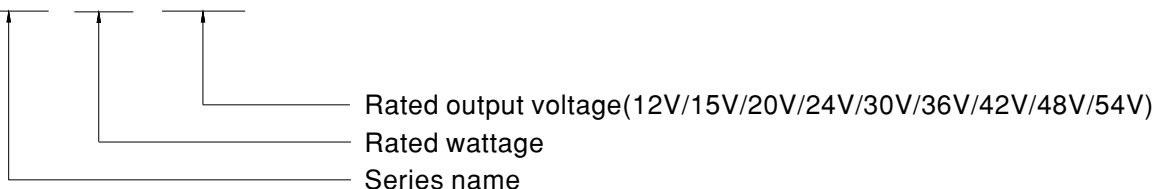
- LED panel lighting
- LED downlight
- LED decorative lighting
- LED tunnel lighting
- Moving sign

## ■ Description

LPF-25 series is a 25W AC/DC LED driver featuring the dual modes constant voltage and constant current output. LPF-25 operates from 90~305VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the efficiency up to 87%, with the fanless design, the entire series is able to operate for -35°C ~ +70°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 - 25 - 24**





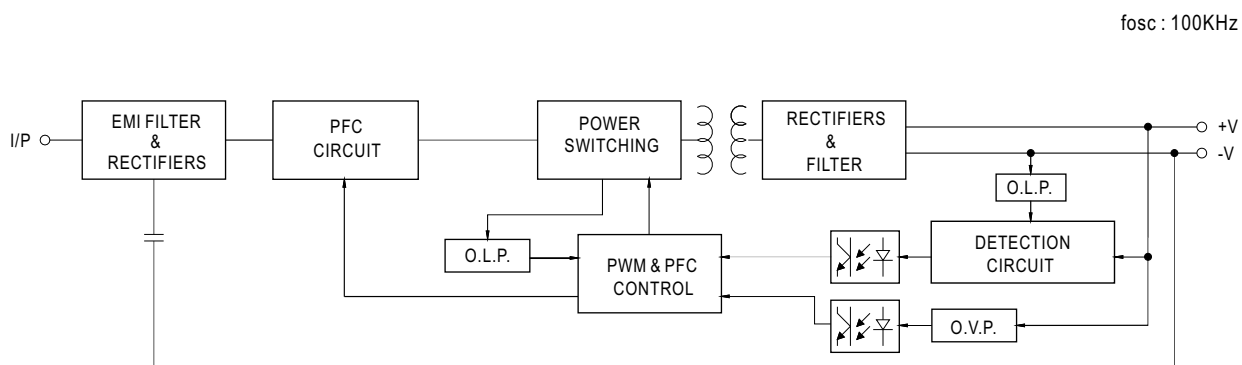
## 25W Constant Voltage + Constant Current LED Driver

## LPF-25 series

### SPECIFICATION

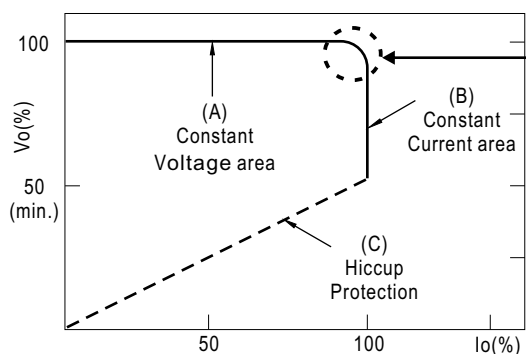
| MODEL               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | LPF-25-12                                                                                                                                                                                          | LPF-25-15  | LPF-25-20 | LPF-25-24  | LPF-25-30  | LPF-25-36  | LPF-25-42  | LPF-25-48  | LPF-25-54  |  |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|------------|------------|------------|------------|------------|--|
| OUTPUT              | DC VOLTAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 12V                                                                                                                                                                                                | 15V        | 20V       | 24V        | 30V        | 36V        | 42V        | 48V        | 54V        |  |
|                     | CONSTANT CURRENT REGION <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 6.6 ~ 12V                                                                                                                                                                                          | 8.25 ~ 15V | 11 ~ 20V  | 13.2 ~ 24V | 16.5 ~ 30V | 19.8 ~ 36V | 23.1 ~ 42V | 26.4 ~ 48V | 29.7 ~ 54V |  |
|                     | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 2.1A                                                                                                                                                                                               | 1.67A      | 1.25A     | 1.05A      | 0.84A      | 0.7A       | 0.6A       | 0.53A      | 0.47A      |  |
|                     | RATED POWER <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 25.2W                                                                                                                                                                                              | 25.05W     | 25W       | 25.2W      | 25.2W      | 25.2W      | 25.2W      | 25.44W     | 25.38W     |  |
|                     | 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>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 1500ms, 80ms / 115VAC    500ms, 80ms / 230VAC                                                                                                                                                      |            |           |            |            |            |            |            |            |  |
| HOLD UP TIME (Typ.) | 16ms/115VAC    16ms/230VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                    |            |           |            |            |            |            |            |            |  |
| 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.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 84%                                                                                                                                                                                                | 85%        | 86%       | 86%        | 86%        | 86%        | 86%        | 87%        | 86.5%      |  |
|                     | AC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 0.4A / 115VAC    0.25A / 230VAC    0.2A/277VAC                                                                                                                                                     |            |           |            |            |            |            |            |            |  |
|                     | INRUSH CURRENT(Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | COLD START 50A(twidth=200μs measured at 50% Ipeak) at 230VAC; Per NEMA 410                                                                                                                         |            |           |            |            |            |            |            |            |  |
|                     | MAX. No. of PSUs on 16A CIRCUIT BREAKER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 12 units (circuit breaker of type B) / 21 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 ~ 18V                                                                                                                                                                                           | 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, recovers automatically after temperature goes down                                                                                                                          |            |           |            |            |            |            |            |            |  |
| ENVIRONMENT         | WORKING TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Tcase=-35 ~ +70℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)                                                                                                                           |            |           |            |            |            |            |            |            |  |
|                     | MAX. CASE TEMP.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Tcase=+70℃                                                                                                                                                                                         |            |           |            |            |            |            |            |            |  |
|                     | 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 EN61347-1, EN61347-2-13 independent, EN62384,J61347-1,J61347-2-13, EAC TP TC 004,GB19510.1,GB19510.14,IP67 approved ;Design refer to UL60950-1, TUV EN60950-1 |            |           |            |            |            |            |            |            |  |
|                     | 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 EN55015,EN61000-3-2 Class C (@load ≥ 50%) ; EN61000-3-3,GB17743 and GB17625.1,EAC TP TC 020                                                                                          |            |           |            |            |            |            |            |            |  |
|                     | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity Line-Line 2KV),EAC TP TC 020                                                                                 |            |           |            |            |            |            |            |            |  |
| OTHERS              | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 473.4Khrs min.    MIL-HDBK-217F (25℃)                                                                                                                                                              |            |           |            |            |            |            |            |            |  |
|                     | DIMENSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 148*40*32mm (L*W*H)                                                                                                                                                                                |            |           |            |            |            |            |            |            |  |
|                     | PACKING                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.36Kg; 40pcs/ 15.4Kg/1.02CUFT                                                                                                                                                                     |            |           |            |            |            |            |            |            |  |
| NOTE                | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.<br>2. Please refer to "DRIVING METHODS OF LED MODULE".<br>3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>4. Tolerance : includes set up tolerance, line regulation and load regulation.<br>5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.<br>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.<br>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>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.<br>9. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 70℃ or less.<br>10. Please refer to the warranty statement on MEAN WELL's website at <a href="http://www.meanwell.com">http://www.meanwell.com</a><br>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).<br>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> |                                                                                                                                                                                                    |            |           |            |            |            |            |            |            |  |

## ■ BLOCK DIAGRAM



## ■ DRIVING METHODS OF LED MODULE

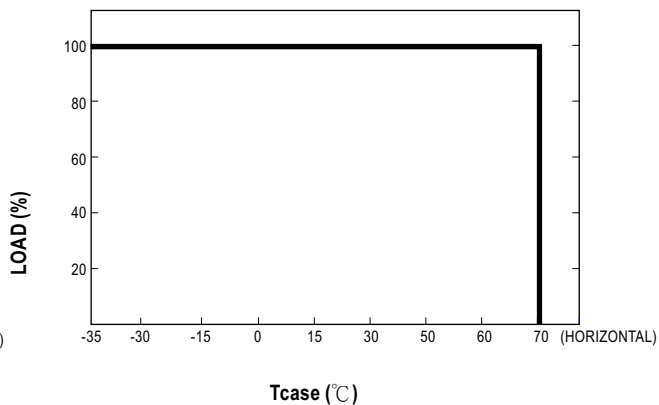
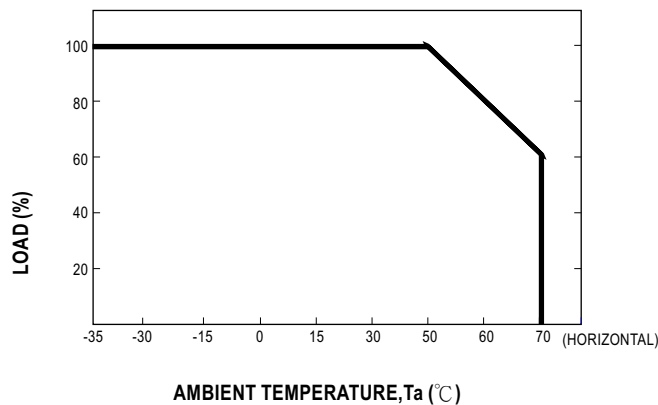
※ This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.



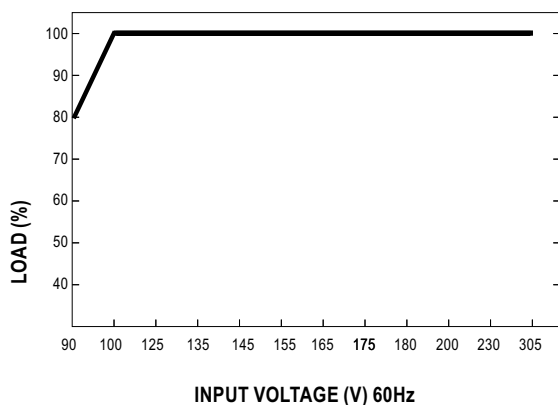
Typical output current normalized by rated current (%)

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



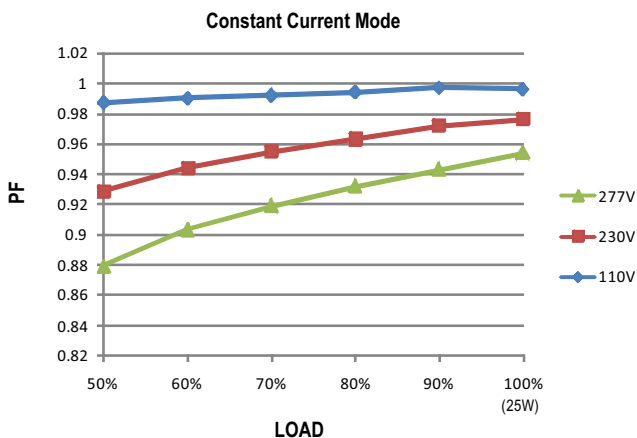
### ■ STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

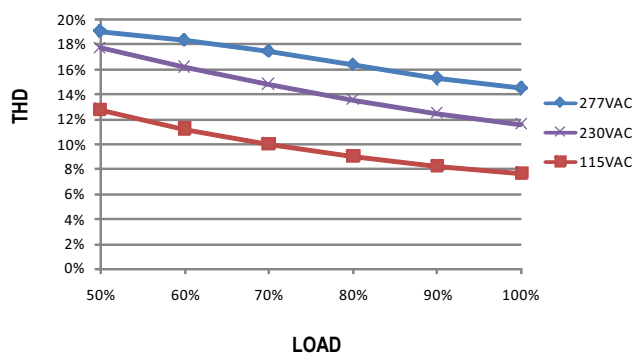
### ■ POWER FACTOR (PF) CHARACTERISTIC

※  $T_{case}$  at 60°C



### ■ TOTAL HARMONIC DISTORTION (THD)

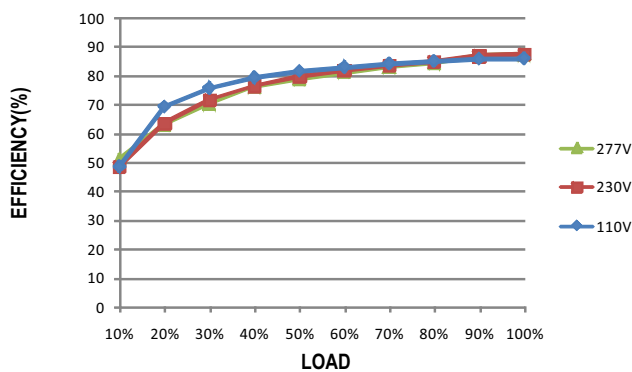
※ 48V Model,  $T_{case}$  at 60°C



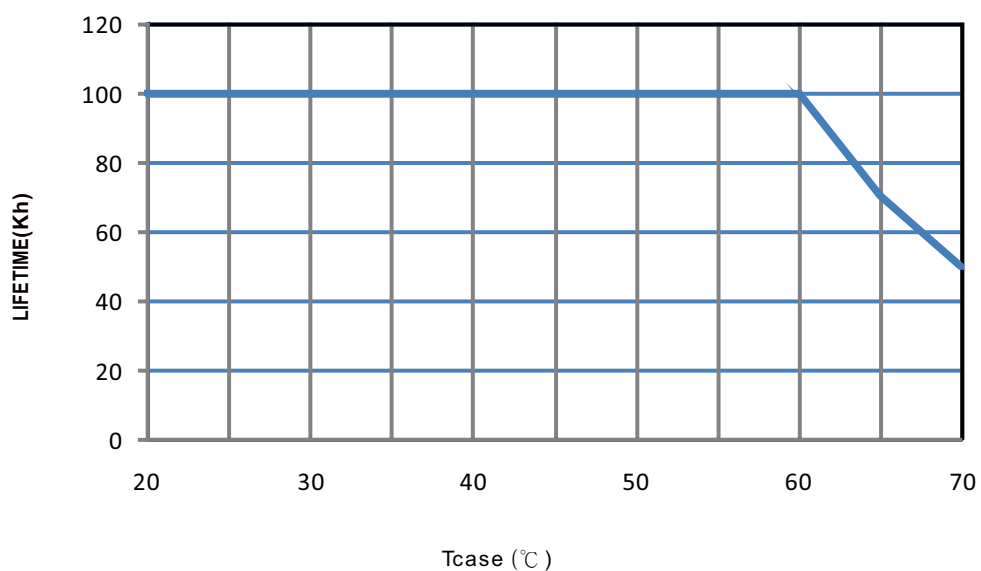
### ■ EFFICIENCY vs LOAD

LPF-25 series possess superior working efficiency that up to 87% can be reached in field applications.

※ 48V Model,  $T_{case}$  at 60°C

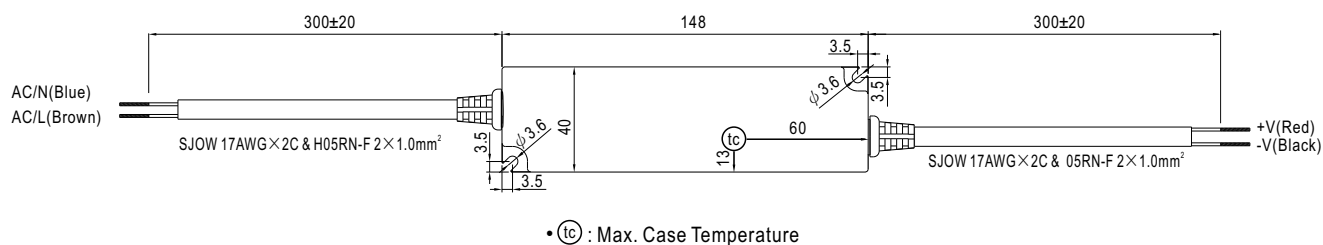


■ LIFE TIME



## ■ MECHANICAL SPECIFICATION

CASE NO.: LPF-16A      Unit:mm



### ■ Recommend Mounting Direction



## ■ INSTALLATION MANUAL

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