



## ■ Features :

- Universal AC input / Full range (up to 305VAC)
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC function
- Cooling by free air convection
- Fully isolated plastic case
- Fully encapsulated with IP67 level (Note.6)
- Class II power unit, no FG
- Class 2 power unit
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 3 years warranty

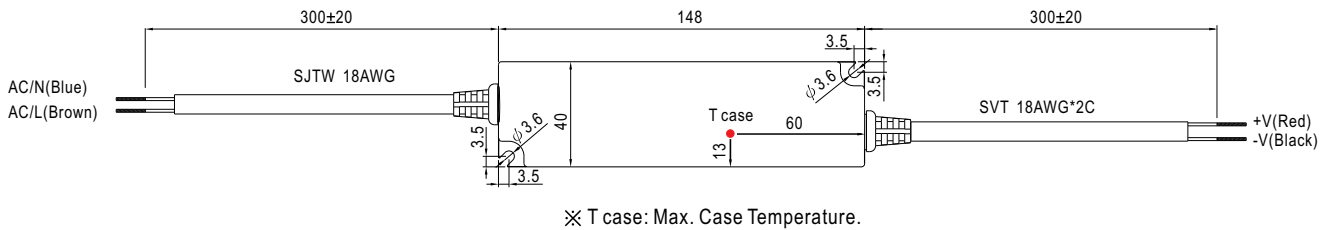


## SPECIFICATION

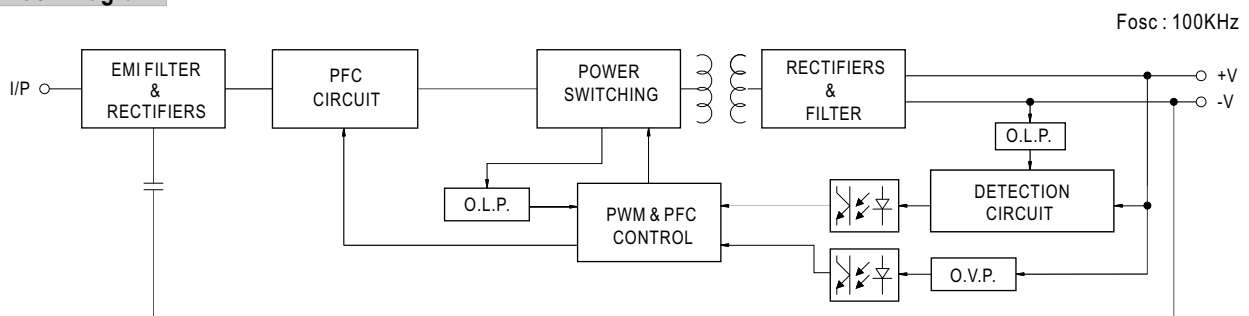
| MODEL                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 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.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6 ~ 12V                                                                                                                                                                                     | 7.5 ~ 15V                              | 10 ~ 20V  | 12 ~ 24V  | 15 ~ 30V  | 18 ~ 36V  | 21 ~ 42V  | 24 ~ 48V  | 27 ~ 54V  |  |
|                         | RATED CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 2.1A                                                                                                                                                                                        | 1.67A                                  | 1.25A     | 1.05A     | 0.84A     | 0.7A      | 0.6A      | 0.53A     | 0.47A     |  |
|                         | RATED POWER                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 25.2W                                                                                                                                                                                       | 25.05W                                 | 25W       | 25.2W     | 25.2W     | 25.2W     | 25.2W     | 25.44W    | 25.38W    |  |
|                         | RIPPLE & NOISE (max.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 150mVp-p                                                                                                                                                                                    | 150mVp-p                               | 150mVp-p  | 150mVp-p  | 200mVp-p  | 250mVp-p  | 250mVp-p  | 250mVp-p  | 350mVp-p  |  |
|                         | VOLTAGE TOLERANCE <small>Note.3</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.7</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1500ms, 80ms / 115VAC at full load    1500ms, 80ms / 230VAC                                                                                                                                 |                                        |           |           |           |           |           |           |           |  |
| HOLD UP TIME (Typ.)     | 16ms at full load    230VAC /115VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                             |                                        |           |           |           |           |           |           |           |  |
| INPUT                   | VOLTAGE RANGE <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 90 ~ 305VAC    127 ~ 431VDC                                                                                                                                                                 |                                        |           |           |           |           |           |           |           |  |
|                         | FREQUENCY RANGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 47 ~ 63Hz                                                                                                                                                                                   |                                        |           |           |           |           |           |           |           |  |
|                         | POWER FACTOR (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve)                                                                           |                                        |           |           |           |           |           |           |           |  |
|                         | EFFICIENCY (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 84%                                                                                                                                                                                         | 85%                                    | 86%       | 86%       | 86%       | 86%       | 86%       | 87%       | 86.5%     |  |
|                         | AC CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 0.4A / 115VAC    0.2A / 230VAC                                                                                                                                                              |                                        |           |           |           |           |           |           |           |  |
|                         | INRUSH CURRENT (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | COLD START 50A/230VAC                                                                                                                                                                       |                                        |           |           |           |           |           |           |           |  |
|                         | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <0.75mA / 240VAC                                                                                                                                                                            |                                        |           |           |           |           |           |           |           |  |
| PROTECTION              | OVER CURRENT <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 95 ~ 108%<br>Protection type : 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<br>Protection type : Shut down and latch off o/p voltage, re-power on to recover |                                        |           |           |           |           |           |           |           |  |
|                         | OVER TEMPERATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 95J    5J(    TSW1) Detect on U2<br>Protection type : Shut down o/p voltage, recover automatically after temperature goes down                                                              |                                        |           |           |           |           |           |           |           |  |
|                         | ENVIRONMENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | WORKING TEMP.                                                                                                                                                                               | -40 ~ +70℃ (Refer to "Derating Curve") |           |           |           |           |           |           |           |  |
| 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.6</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | UL8750, CSA C22.2 No. 250.0-08 (except for 48V, 54V),EN61347-1, EN61347-2-13 independent, 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Compliance to EN55015; EN61000-3-2 Class C (≥ 50% load) ; EN61000-3-3                                                                                                                       |                                        |           |           |           |           |           |           |           |  |
|                         | EMC IMMUNITY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547,light industry level(surge 2KV), criteria A                                                                                                 |                                        |           |           |           |           |           |           |           |  |
| 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 load and 25℃ of ambient temperature.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>4. Constant current operation region is within 50% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design.<br>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.<br>6. Suitable for indoor use or outdoor use without direct sunlight exposure.Please avoid immerse in the water over 30 minutes.<br>7. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.<br>8. The power supply 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. |                                                                                                                                                                                             |                                        |           |           |           |           |           |           |           |  |

## Mechanical Specification

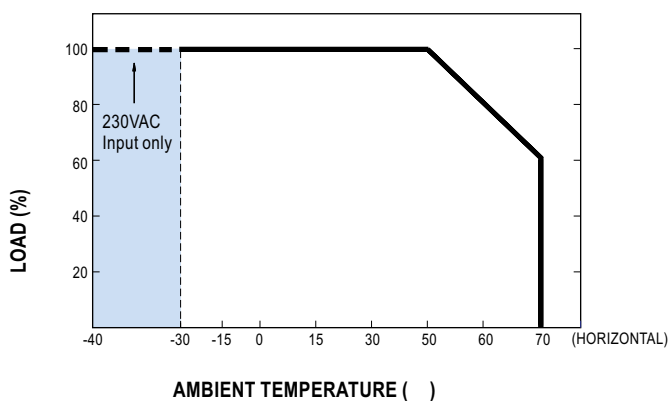
Case No.: LPF-16A Unit:mm



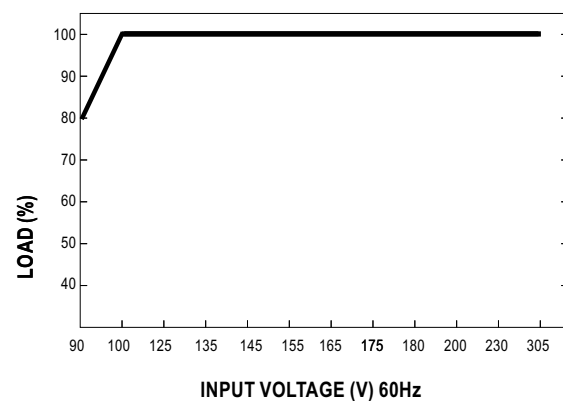
## Block Diagram



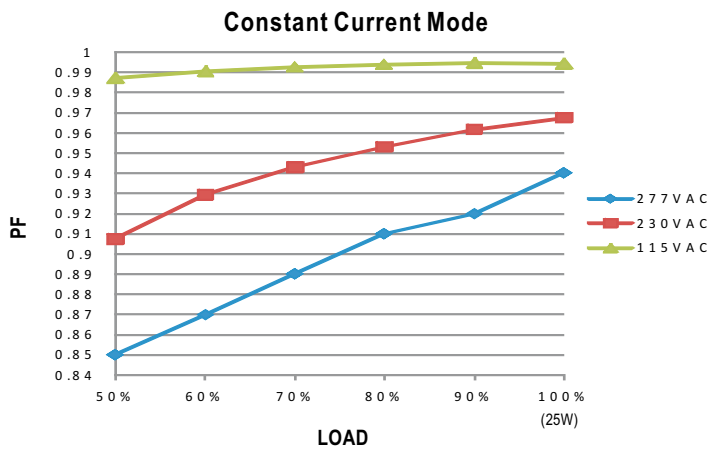
## Derating Curve



## Static Characteristics

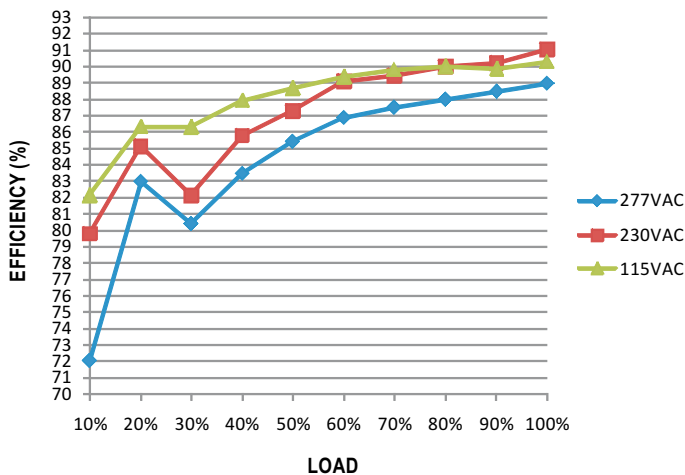


### Power Factor Characteristic



### EFFICIENCY vs LOAD (48V Model)

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

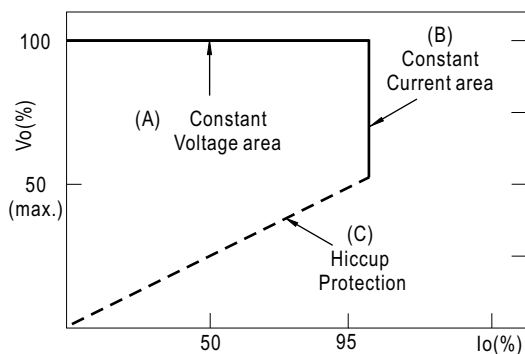


### DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B)).



Typical LED power supply I-V curve