



## ■ Features :

- Universal AC input / Full range
- High efficiency up to 88.5%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in active PFC function
- Class 2 power unit
- Pass LPS
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- 2 years warranty



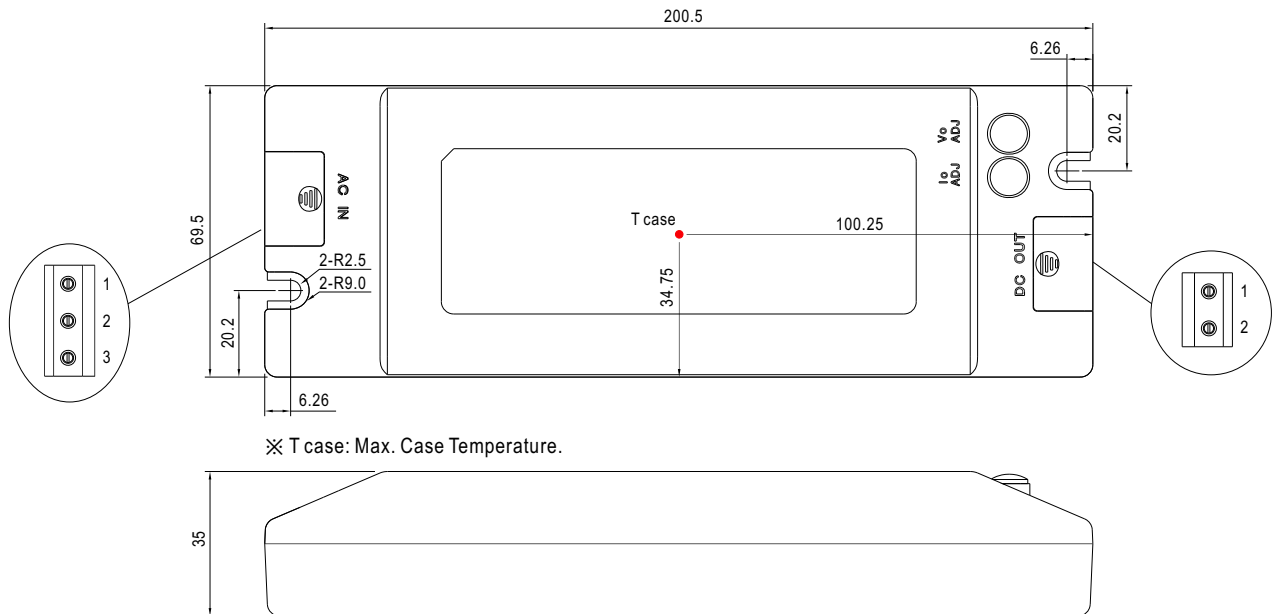
## SPECIFICATION

| MODEL        |                                               | PLC-100-12                                                                                                                                                                                                                                                                           | PLC-100-15  | PLC-100-20 | PLC-100-24 | PLC-100-27  | PLC-100-36 | PLC-100-48 |
|--------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|------------|------------|-------------|------------|------------|
| OUTPUT       | DC VOLTAGE                                    | 12V                                                                                                                                                                                                                                                                                  | 15V         | 20V        | 24V        | 27V         | 36V        | 48V        |
|              | CONSTANT CURRENT REGION <small>Note.4</small> | 9 ~ 12V                                                                                                                                                                                                                                                                              | 11.25 ~ 15V | 15 ~ 20V   | 18 ~ 24V   | 20.25 ~ 27V | 27 ~ 36V   | 36 ~ 48V   |
|              | RATED CURRENT <small>Note.6</small>           | 5A                                                                                                                                                                                                                                                                                   | 5A          | 4.8A       | 4A         | 3.55A       | 2.65A      | 2A         |
|              | CURRENT RANGE <small>Note.6</small>           | 0 ~ 5A                                                                                                                                                                                                                                                                               | 0 ~ 5A      | 0 ~ 4.8A   | 0 ~ 4A     | 0 ~ 3.55A   | 0 ~ 2.65A  | 0 ~ 2A     |
|              | RATED POWER <small>Note.6</small>             | 60W                                                                                                                                                                                                                                                                                  | 75W         | 96W        | 96W        | 95.85W      | 95.4W      | 96W        |
|              | RIPPLE & NOISE (max.) <small>Note.2</small>   | 150mVp-p                                                                                                                                                                                                                                                                             | 150mVp-p    | 150mVp-p   | 150mVp-p   | 150mVp-p    | 150mVp-p   | 200mVp-p   |
|              | VOLTAGE ADJ. RANGE (Vo ADJ.)                  | 10.2 ~ 12V                                                                                                                                                                                                                                                                           | 12.8 ~ 15V  | 17 ~ 20V   | 20.4 ~ 24V | 23 ~ 27V    | 30.6 ~ 36V | 40.8 ~ 48V |
|              | CURRENT ADJ. RANGE (Io ADJ.)                  | 3.75 ~ 5A                                                                                                                                                                                                                                                                            | 3.75 ~ 5A   | 3.6 ~ 4.8A | 3 ~ 4A     | 2.6 ~ 3.55A | 2 ~ 2.65A  | 1.5 ~ 2A   |
|              | VOLTAGE TOLERANCE <small>Note.3</small>       | ±3.0%                                                                                                                                                                                                                                                                                | ±3.0%       | ±3.0%      | ±3.0%      | ±3.0%       | ±2.0%      | ±2.0%      |
|              | LINE REGULATION                               | ±1.0%                                                                                                                                                                                                                                                                                |             |            |            |             |            |            |
|              | LOAD REGULATION                               | ±2.0%                                                                                                                                                                                                                                                                                |             |            |            |             |            |            |
|              | SETUP, RISE TIME                              | 500ms, 80ms/230VAC 1200ms, 80ms/115VAC at full load                                                                                                                                                                                                                                  |             |            |            |             |            |            |
|              | HOLD UP TIME (Typ.)                           | 60ms/230VAC 16ms/115VAC at full load                                                                                                                                                                                                                                                 |             |            |            |             |            |            |
| INPUT        | VOLTAGE RANGE <small>Note.5</small>           | 90 ~ 264VAC 127 ~ 370VDC                                                                                                                                                                                                                                                             |             |            |            |             |            |            |
|              | FREQUENCY RANGE                               | 47 ~ 63Hz                                                                                                                                                                                                                                                                            |             |            |            |             |            |            |
|              | POWER FACTOR (Typ.)                           | PF>0.95/115VAC, PF>0.95/230VAC at full load (Please refer to "Power Factor Characteristic" curve)                                                                                                                                                                                    |             |            |            |             |            |            |
|              | TOTAL HARMONIC DISTORTION                     | THD< 20% when output loading≥75% at 115VAC/230VAC input                                                                                                                                                                                                                              |             |            |            |             |            |            |
|              | EFFICIENCY (Typ.)                             | 83%                                                                                                                                                                                                                                                                                  | 85%         | 88.5%      | 88.5%      | 88%         | 88%        | 88.5%      |
|              | AC CURRENT (Typ.)                             | 12V:0.8A/115VAC 0.4A/230VAC 15V:0.9A/115VAC 0.45A/230VAC 20V ~ 48V:1.1A/115VAC 0.55A/230VAC                                                                                                                                                                                          |             |            |            |             |            |            |
|              | INRUSH CURRENT (Typ.)                         | COLD START 40A(twidth=950μs measured at 50% Ipeak) at 230VAC                                                                                                                                                                                                                         |             |            |            |             |            |            |
|              | MAX. No. of PSUs on 16A CIRCUIT BREAKER       | 3 units (circuit breaker of type B) / 5 units (circuit breaker of type C) at 230VAC                                                                                                                                                                                                  |             |            |            |             |            |            |
| PROTECTION   | OVER CURRENT (Typ.) <small>Note.4</small>     | 95 ~ 102%<br>Protection type : Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                                                    |             |            |            |             |            |            |
|              | OVER VOLTAGE                                  | 13 ~ 16V                                                                                                                                                                                                                                                                             | 16.5 ~ 20V  | 22 ~ 27V   | 27 ~ 34V   | 30 ~ 36V    | 39 ~ 48V   | 52 ~ 64V   |
|              | OVER TEMPERATURE                              | Shut down o/p voltage, re-power on to recover                                                                                                                                                                                                                                        |             |            |            |             |            |            |
|              | WORKING TEMP.                                 | -30 ~ +50°C (Refer to "Derating Curve")                                                                                                                                                                                                                                              |             |            |            |             |            |            |
| ENVIRONMENT  | WORKING HUMIDITY                              | 20 ~ 95% RH non-condensing                                                                                                                                                                                                                                                           |             |            |            |             |            |            |
|              | STORAGE TEMP., HUMIDITY                       | -40 ~ +80°C, 10 ~ 95% RH                                                                                                                                                                                                                                                             |             |            |            |             |            |            |
|              | TEMP. COEFFICIENT                             | ±0.03%/°C (0 ~ 50°C)                                                                                                                                                                                                                                                                 |             |            |            |             |            |            |
|              | VIBRATION                                     | 10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                                                                                                                                              |             |            |            |             |            |            |
| SAFETY & EMC | SAFETY STANDARDS <small>Note.7</small>        | UL1310, TUV EN60950-1, EN61347-1, EN61347-2-13, GB19510.14, GB19510.1, CAN/CSA C22.2 No. 223-M91(except for 48V), J61347-1, J61347-2-13 approved                                                                                                                                     |             |            |            |             |            |            |
|              | WITHSTAND VOLTAGE                             | I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC                                                                                                                                                                                                                                         |             |            |            |             |            |            |
|              | ISOLATION RESISTANCE                          | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25°C/ 70% RH                                                                                                                                                                                                                            |             |            |            |             |            |            |
|              | EMC EMISSION                                  | Compliance to EN55015, GB17743, GB17625.1, EN61000-3-2,-3, Class C (≥70% load) ; EN61000-3-3                                                                                                                                                                                         |             |            |            |             |            |            |
| OTHERS       | EMC IMMUNITY                                  | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level, (surge 4KV), criteria A                                                                                                                                                                              |             |            |            |             |            |            |
|              | MTBF                                          | 297.9Khrs min. MIL-HDBK-217F (25°C)                                                                                                                                                                                                                                                  |             |            |            |             |            |            |
|              | DIMENSION                                     | 200.5*69.5*35mm (L*W*H)                                                                                                                                                                                                                                                              |             |            |            |             |            |            |
| NOTE         | PACKING                                       | 0.52Kg; 25pcs/14Kg/0.65CUFT                                                                                                                                                                                                                                                          |             |            |            |             |            |            |
|              |                                               | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.                                                                                                                                                                  |             |            |            |             |            |            |
|              |                                               | 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.                                                                                                                                             |             |            |            |             |            |            |
|              |                                               | 3. Tolerance : includes set up tolerance, line regulation and load regulation.                                                                                                                                                                                                       |             |            |            |             |            |            |
|              |                                               | 4. Please refer to "DRIVING METHODS OF LED MODULE".                                                                                                                                                                                                                                  |             |            |            |             |            |            |
|              |                                               | 5. Derating may be needed under low input voltage. Please check the static characteristics for more details.                                                                                                                                                                         |             |            |            |             |            |            |
|              |                                               | 6. This is the maximum possible output current and power. Over load protection may be activated slightly below this level to comply with the requirement of UL1310 class 2.                                                                                                          |             |            |            |             |            |            |
|              |                                               | 7. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18.                                                                                                                                                                                       |             |            |            |             |            |            |
|              |                                               | 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. |             |            |            |             |            |            |
|              |                                               | 9. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.                                                                                                    |             |            |            |             |            |            |

## Mechanical Specification

Case No.981A

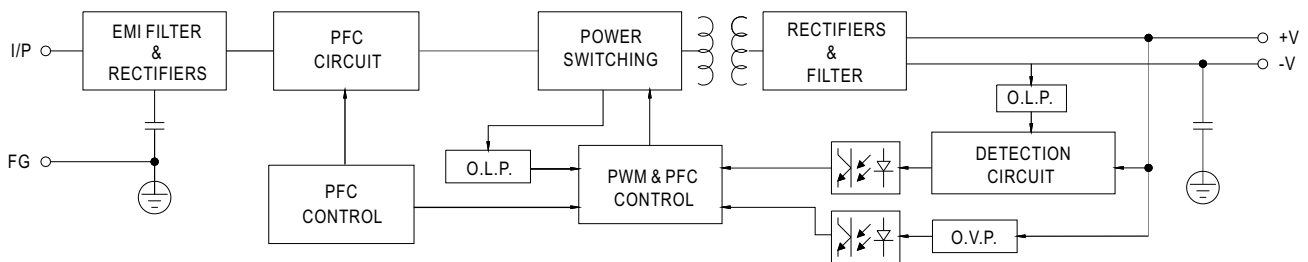
Unit:mm



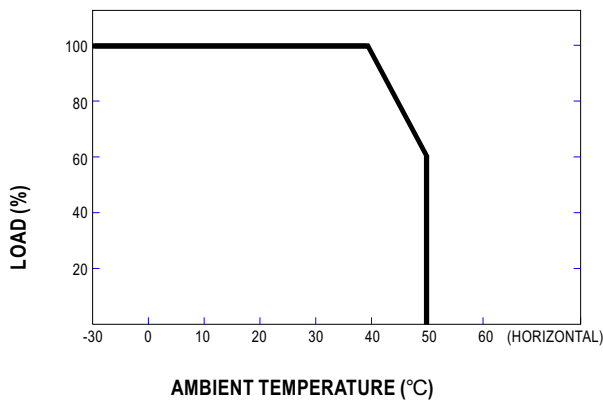
※ T case: Max. Case Temperature.

## Block Diagram

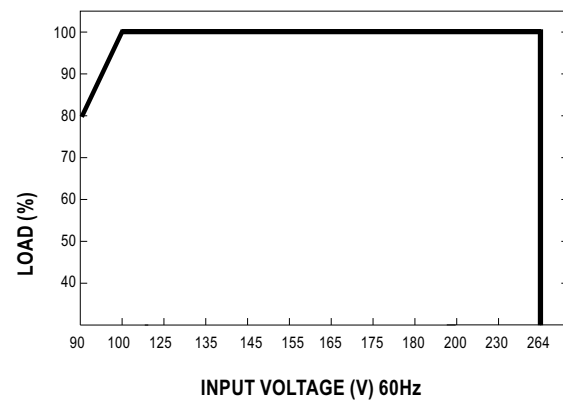
Fosc: 100KHz



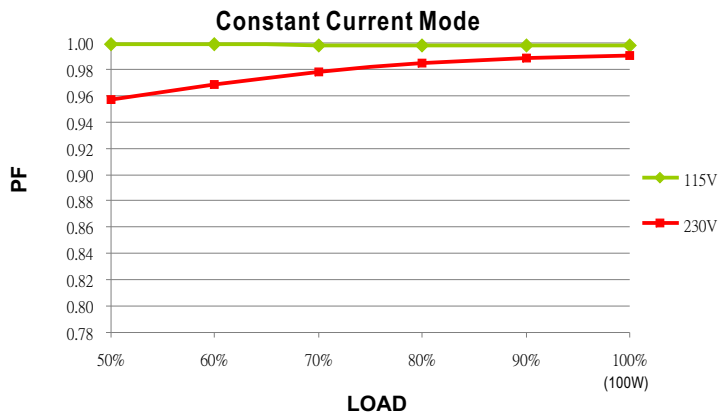
## Derating Curve



## Static Characteristics

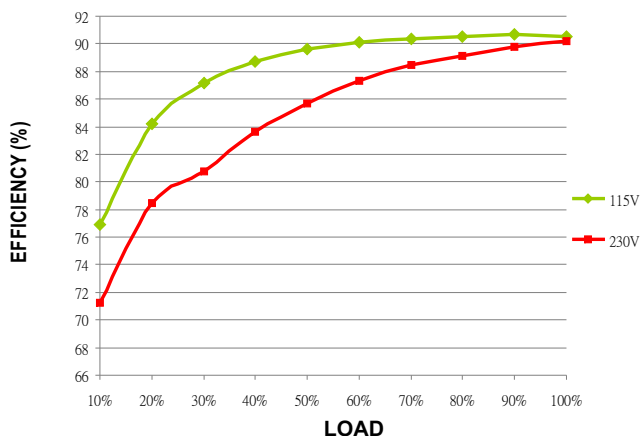


### Power Factor Characteristic



### EFFICIENCY vs LOAD (48V Model)

PLC-100 series possess superior working efficiency that up to 88.5% can be reached in field applications.

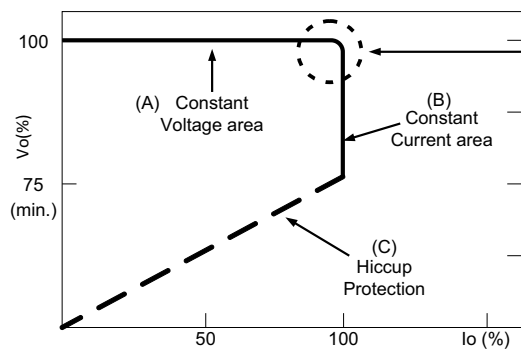


### DRIVING METHODS OF LED MODULE

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

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.