MEAN WELL

12W Single Output LED Power Supply

# PLM-12 series

User's Manual

SELV IP30 (for Blank type only) BS EN/EN61347-1,-2-13

## Features

- 230VAC only or Full range (up to 295VAC) models available
- Built-in active PFC function
- Constant current design
- Protections:Short circuit
- Cooling by free air convection
- Fully isolated plastic case
- Class Ⅱ power unit, no FG
- Class 2 power unit (Blank type only)
- No load power consumption <0.5W
- High reliability,low cost
- 2 years warranty

## Applications

- Indoor LED lighting
- LED office lighting
- LED commercial lighting
- LED decorative lighting

## GTIN CODE

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

## Description

PLM-12 is a 12W economical AC/DC LED power supply series. Incorporating a built-in active PFC design, PLM-12 provides a high Power Factor value greater than 0.9. In addition, with the low no load power consumption below 0.5W, and the setup time less than 500ms, PLM-12 is complied with the ErP regulation required by European Union for lighting fixtures.

PLM-12 is a class Ⅱ (without FG pin) power unit housed with the UL 94V-0 rated flame retardant plastic case. The I/O terminals are designed with screw-less clamp style terminal block that greatly simplifies the wiring installation. Two types of models with different input voltage range are offered: PLM-12 series, which operates from 110~295VAC, and PLM-12E series, which operates from 180~295VAC.These two series are both constant current output design, supplying models with the current of 350mA, 500mA, 700mA and 1050mA, respectively.

## Model Encoding

**PLM - 12 E - 350**

- 350: Output current
- E: Blank: AC input range 110~295VAC; E:AC input range 180~295VAC
- 12: Output wattage
- PLM: Series name

12W Single Output LED Power Supply

# PLM-12 series

## SPECIFICATION

| MODEL | | | PLM-12□-350 | PLM-12□-500 | PLM-12□-700 | PLM-12□-1050 |
|---|---|---|---|---|---|---|
| OUTPUT | CONSTANT CURRENT REGION Note.5 | | 22 ~ 36V | 15 ~ 24V | 11 ~ 18V | 7 ~ 12V |
| | RATED CURRENT | | 0.35A | 0.5A | 0.7A | 1.05A |
| | NO LOAD OUTPUT VOLTAGE(max.) | | 42V | 30V | 22V | 16V |
| | RATED POWER | | 12.6W | 12W | 12.6W | 12.6W |
| | RIPPLE & NOISE (max.) Note.2 | Blank type | 3.6Vp-p | 2.4Vp-p | 2.4Vp-p | 1.8Vp-p |
| | | E type | 5.5Vp-p | 3.6Vp-p | 3.6Vp-p | 2.7Vp-p |
| | CURRENT ACCURACY Note.3 | | ±5.0% | | | |
| | SETUP TIME | | Blank type: 500ms / 115VAC, 230VAC at full load; E type: 500ms / 230VAC at full load | | | |
| INPUT | VOLTAGE RANGE Note.4 | | Blank type: 110 ~ 295VAC 156 ~ 417VDC; E type: 180 ~ 295VAC 254~ 417VDC | | | |
| | FREQUENCY RANGE | | 47 ~ 63Hz | | | |
| | POWER FACTOR | Blank type | PF≥0.97/115VAC,PF≥0.95/230VAC,PF>0.9/277VAC(at full load)(Please refer to "Power Factor Characteristic" curve) | | | |
| | | E type | PF≥0.95/230VAC,PF≥0.9/277VAC (at full load)(Please refer to "Power Factor Characteristic" curve) | | | |
| | TOTAL HARMONIC DISTORTION | Blank type | THD< 20% when output loading≧60% at 115VAC/230VAC input and output loading≧75% at 277VAC input | | | |
| | | E type | THD< 20% when output loading≧60% at 230VAC input and output loading≧75% at 277VAC input | | | |
| | EFFICIENCY (Typ.) | Blank type | 85% | 84% | 83% | 81% |
| | | E type | 84% | 83% | 82% | 78% |
| | AC CURRENT | | Blank type: 0.15A/115VAC 0.08A/230VAC 0.07A/277VAC; E type: 0.08A/230VAC 0.07A/277VAC | | | |
| | INRUSH CURRENT(Typ.) | | COLD START 15A(twidth=50μs measured at 50% Ipeak) at 230VAC | | | |
| | MAX. No. of PSUs on 16A CIRCUIT BREAKER | | 160 units (circuit breaker of type B) / 160 units (circuit breaker of type C) at 230VAC | | | |
| | LEAKAGE CURRENT | | 0.25mA / 240VAC | | | |
| PROTECTION | SHORT CIRCUIT | | Hiccup mode, recovers automatically after fault condition is removed. | | | |
| ENVIRONMENT | WORKING TEMP. | | -30 ~ +50℃ | | | |
| | WORKING HUMIDITY | | 20 ~ 90% RH non-condensing | | | |
| | STORAGE TEMP., HUMIDITY | | -40 ~ +80℃, 10 ~ 95% RH | | | |
| | TEMP. COEFFICIENT | | ±0.06%/℃ (0 ~ 50℃) | | | |
| | VIBRATION | | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | |
| SAFETY & EMC | SAFETY STANDARDS | | UL8750, CSA C22.2 No. 250.13-12(for Blank type only); ENEC BS EN/EN61347-1, BS EN/EN61347-2-13, BS EN/EN62384,GB19510.14,GB19510.1(for E type only),EAC TP TC 004,IP30 approved | | | |
| | WITHSTAND VOLTAGE | | I/P-O/P:3.75KVAC | | | |
| | ISOLATION RESISTANCE | | I/P-O/P:100M Ohms/500VDC / 25℃/ 70%RH | | | |
| | EMC EMISSION | | Compliance to BS EN/EN55015, GB/T 17743,GB17625.1(for E type only),BS EN/EN61000-3-2 Class C(≥60% load); BS EN/EN61000-3-3,EAC TP TC 020 | | | |
| | EMC IMMUNITY | | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11;BS EN/EN61547, light industry level, criteria B(surge 2KV),EAC TP TC 020 | | | |
| OTHERS | MTBF | | 7872.3K hrs min. Telcordia SR-332 (Bellcore) ; 598.9Khrs min. MIL-HDBK-217F (25℃) | | | |
| | DIMENSION | | 145*38*22mm (L*W*H) | | | |
| | PACKING | | 0.126Kg;60pcs/8.6 Kg/0.48CUFT | | | |

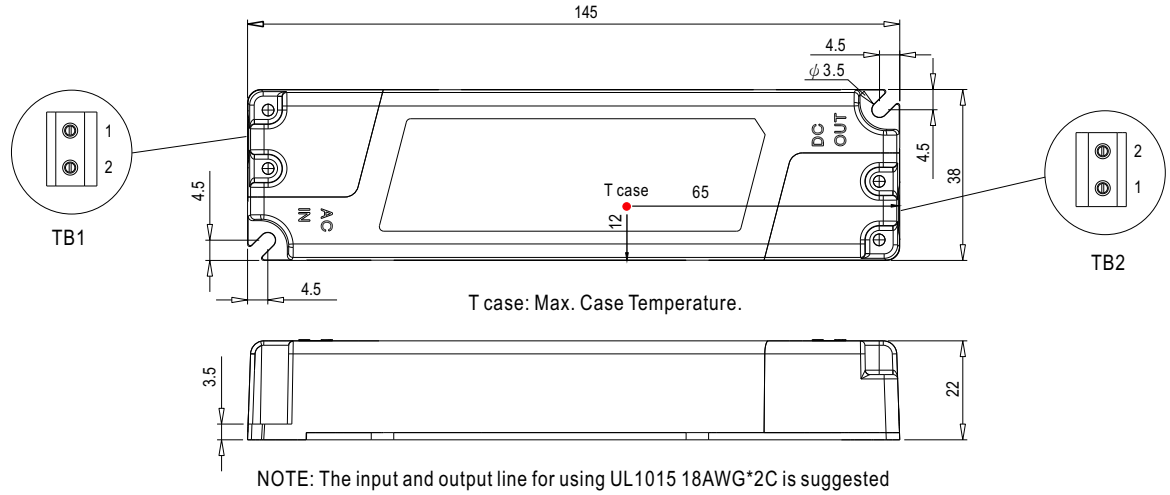
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ 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. Please see "AC input voltage drop vs. output current characteristics" table.
4. Derating may be needed under low input voltage, please check the static characteristic for more details.
5. Constant current operation region is within 60% ~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.
6. 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. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

※ Product Liability Disclaimer：For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

## ■ Mechanical Specification

Case No.PLM-25 Unit:mm Tolerance:±1




T case: Max. Case Temperature.




NOTE: The input and output line for using UL1015 18AWG*2C is suggested

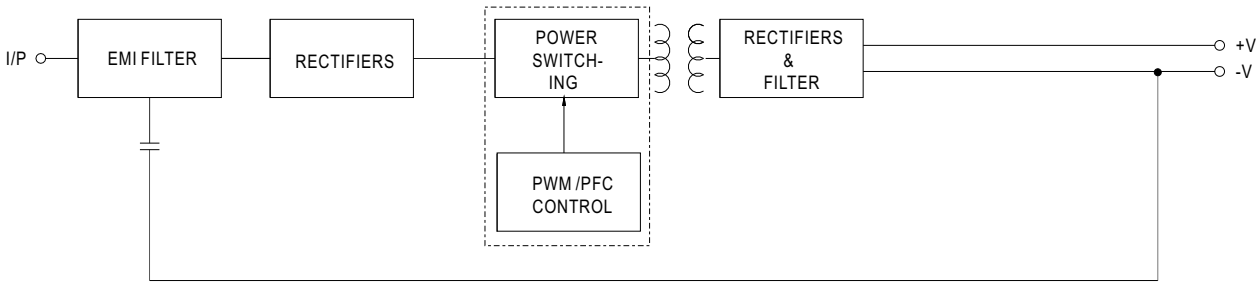
Terminal Pin No. Assignment (TB1) :
SWITCHLAB MWX201-75002EB(GRAY)

| Pin No. | Assignment |
|---|---|
| 1 | AC/L |
| 2 | AC/N |

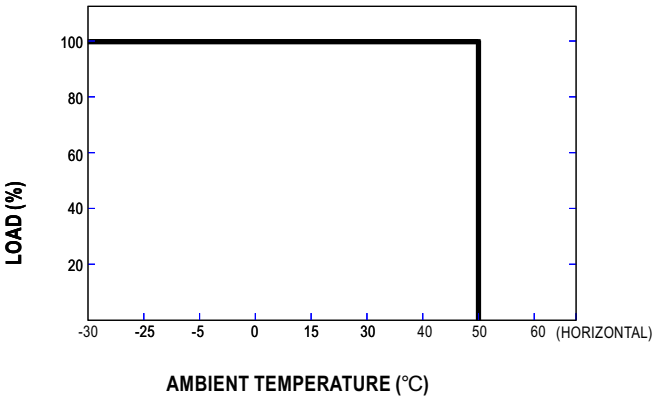
Terminal Pin No. Assignment (TB2) :
SWITCHLAB MWX201-75002B(BLUE)

| Pin No. | Assignment |
|---|---|
| 1 | +V |
| 2 | -V |

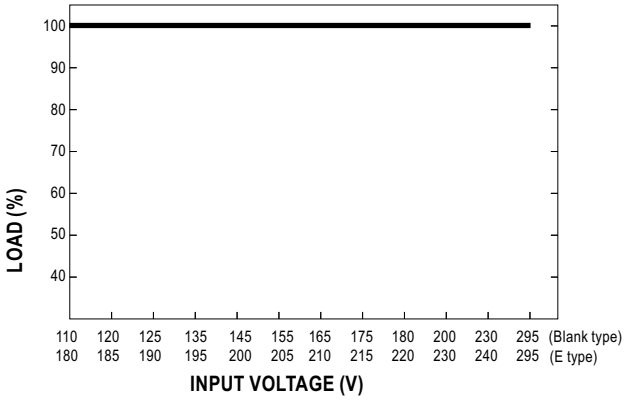
## ■ Block Diagram



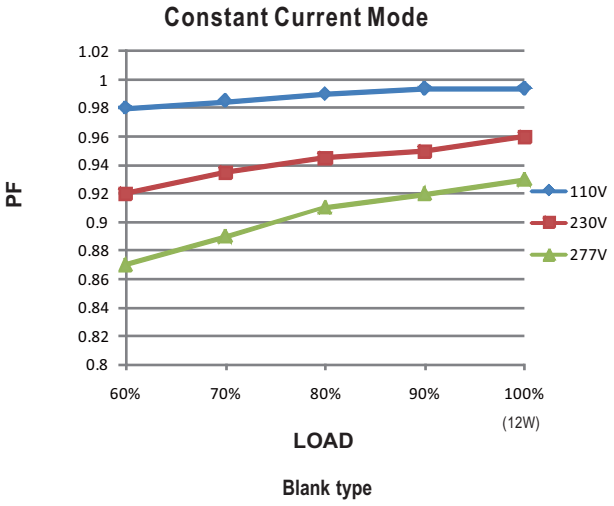

## ■ Derating Curve



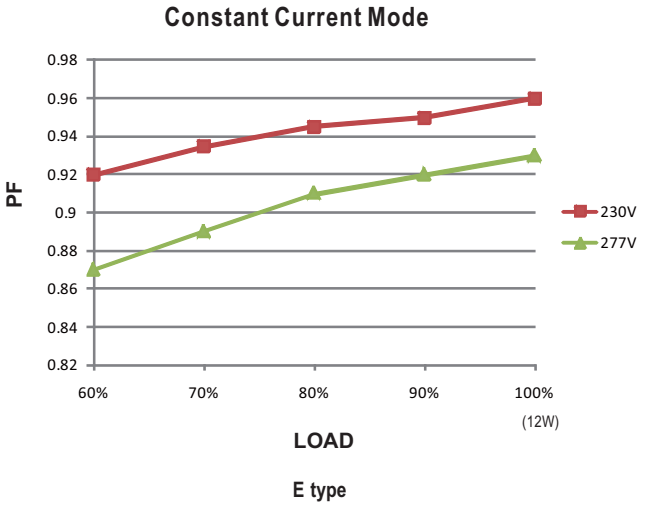

## ■ Static Characteristics



## ■ Power Factor Characteristic

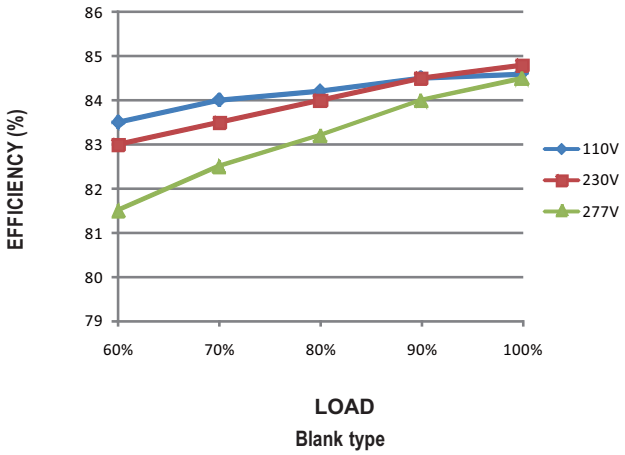



Blank type

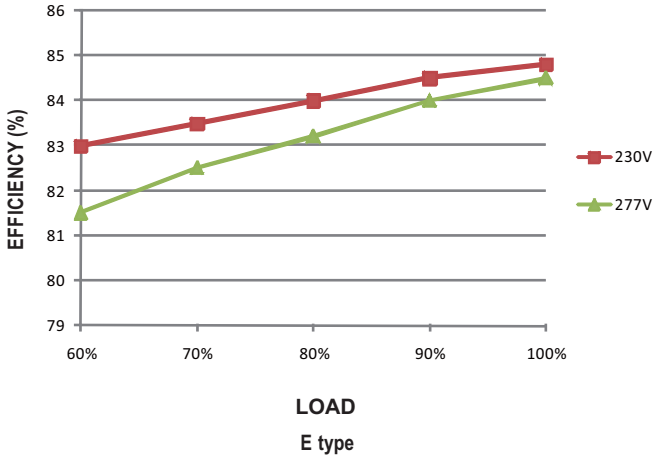



E type

## ■ EFFICIENCY vs LOAD (500mA Model)




Blank type




E type

## ■ AC input voltage drop vs. output current characteristics

| AC input drop | 10% | 8% | 5% | 3% |
|---|---|---|---|---|
| Io drop | <15% | <11% | <7% | <6% |

NOTE: Output current will return to the rated value within 50ms