



■ 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
- IP30 design
- Class II power unit, no FG
- 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

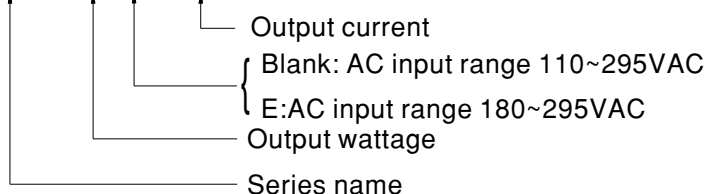
■ Description

PLM-40 is a 40W economical AC/DC LED power supply series. Incorporating a built-in active PFC design, PLM-40 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-40 is complied with the ErP regulation required by European Union for lighting fixtures.

PLM-40 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-40 series, which operates from 110~295VAC, and PLM-40E series, which operates from 180~295VAC. These two series are both constant current output design, supplying models with the current of 350mA, 500mA, 700mA, 1050mA, 1400mA and 1750mA, respectively.

■ Model Encoding

PLM - 40 E - 350



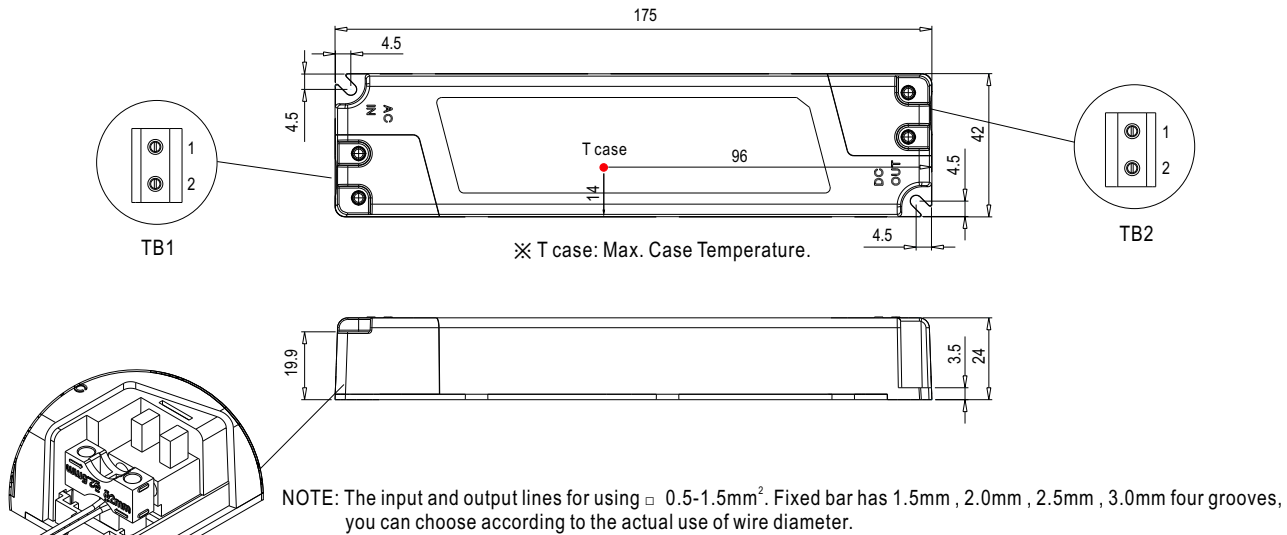


SPECIFICATION

| MODEL | | PLM-40□-350 | PLM-40□-500 | PLM-40□-700 | PLM-40□-1050 | PLM-40□-1400 | PLM-40□-1750 | |
|---|---|--|--|-------------|--------------|--------------|--------------|--|
| OUTPUT | RATED CURRENT | 350mA | 500mA | 700mA | 1050mA | 1400mA | 1750mA | |
| | OPERATING VOLTAGE RANGE Note.5 | 53 ~ 105V | 40 ~ 80V | 29 ~ 57V | 19 ~ 38V | 15 ~ 29V | 12 ~ 23V | |
| | CURRENT ACCURACY Note.3 | ±8.0% | | | | | | |
| | RATED POWER | 36.75W | 40W | 39.9W | 39.9W | 40.6W | 40.25W | |
| | RIPPLE & NOISE (max.) Note.2 | 10Vp-p | 8Vp-p | 6Vp-p | 4Vp-p | 3Vp-p | 2.5Vp-p | |
| | NO LOAD OUTPUT VOLTAGE (max.) | 115V | 86V | 63V | 43V | 34V | 27V | |
| | 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 (Typ.) | 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.) | 88% | 88% | 87% | 87% | 86% | 86% | |
| | AC CURRENT (Typ.) | Blank Type: 0.5A/115VAC 0.3A/230VAC 0.25A/277VAC E Type: 0.3A/230VAC 0.25A/277VAC | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 15A (twidth=75μs measured at 50% Ipeak) at 230VAC | | | | | | |
| MAX. No. of PSUs on 16A CIRCUIT BREAKER | 47 units (circuit breaker of type B) / 47 units (circuit breaker of type C) at 230VAC | | | | | | | |
| LEAKAGE CURRENT | < 0.5mA / 240VAC | | | | | | | |
| PROTECTION | SHORT CIRCUIT | Hiccup mode, recovers automatically after fault condition is removed. | | | | | | |
| | OVER TEMPERATURE | Hiccup mode, recovers automatically after temperature goes down. | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +40°C (Refer to "Derating Curve") | | | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80°C, 10 ~ 95% RH | | | | | | |
| | TEMP. COEFFICIENT | ±0.06%/°C (0 ~ 40°C) | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | | | | |
| SAFETY & EMC | SAFETY STANDARDS | UL8750, CSA C22.2 No. 250.13-12; ENEC EN61347-1, EN61347-2-13, EN62384, GB19510.14, GB19510.1, IP30 approved | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P: 3.75KVAC | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH | | | | | | |
| | EMC EMISSION | Compliance to EN55015, GB17743, GB17625.1, EN61000-3-2 Class C (≥75% load); EN61000-3-3 | | | | | | |
| | EMC IMMUNITY | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547, light industry level, criteria B (Surge 2KV) | | | | | | |
| OTHERS | MTBF | 822.7Khrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | DIMENSION | 175*42*24mm (L*W*H) | | | | | | |
| | PACKING | 0.175Kg; 60pcs/11.5kg/0.68CUFT | | | | | | |
| NOTE | <ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Please see "AC input voltage drop vs. output current characteristics" table. Derating may be needed under low input voltage, please check the static characteristic for more details. 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. 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. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers. | | | | | | | |

■ Mechanical Specification

Case No. PLM-40 Unit:mm



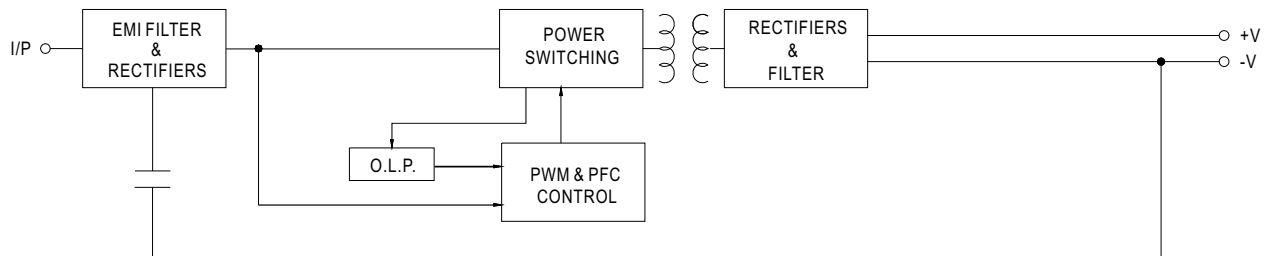
Terminal Pin No. Assignment (TB1) :
SWITCLAB DG235-7.5-2P(GRAY)

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

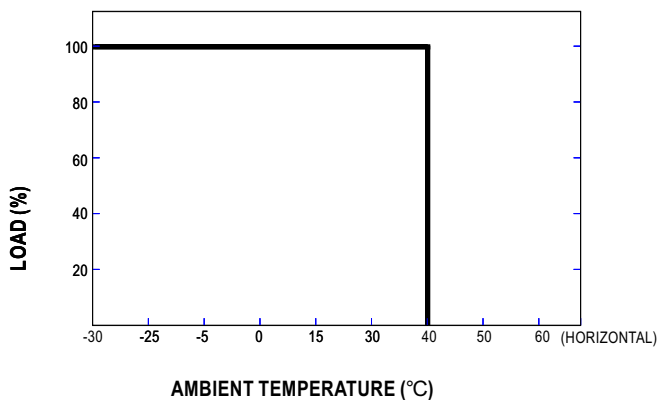
Terminal Pin No. Assignment (TB2) :
SWITCLAB DG235-7.5-2P(BLUE)

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

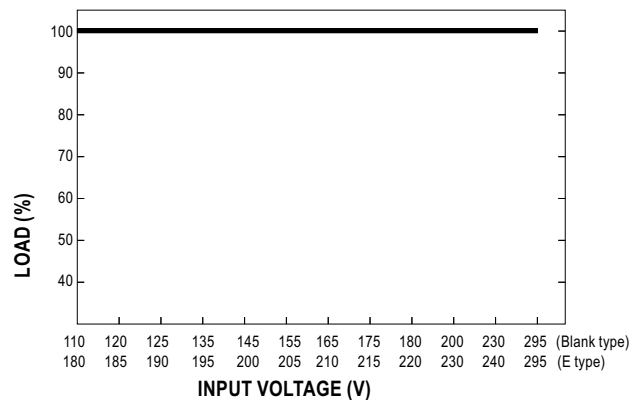
■ Block Diagram



■ Derating Curve

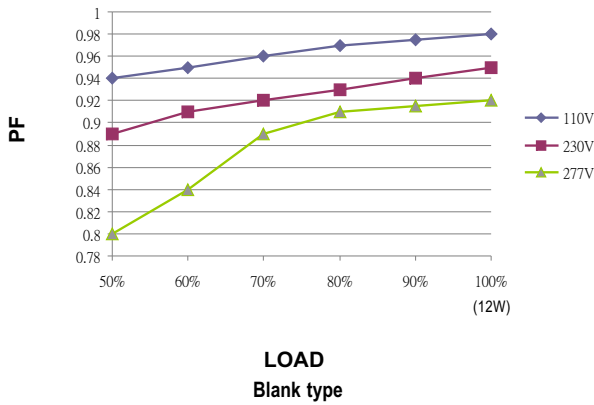


■ Static Characteristics

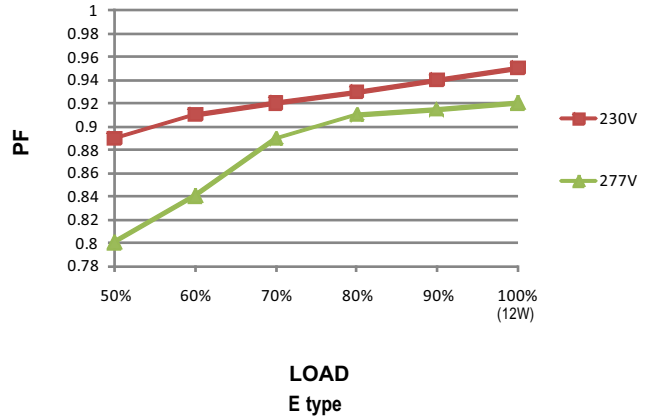


Power Factor Characteristic

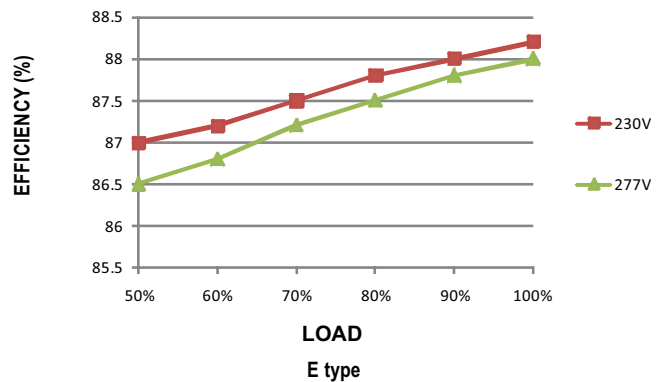
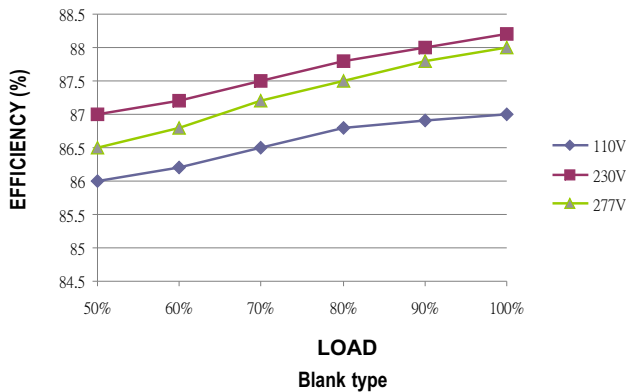
Constant Current Mode



Constant Current Mode



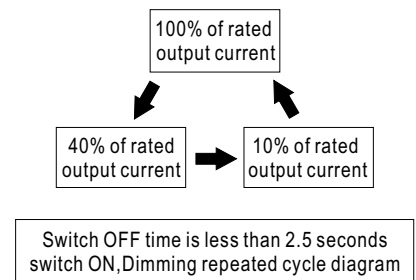
EFFICIENCY vs LOAD (500mA Model)



Three-step analog dimming

3-level analog dimming control using a wall switch

| three-step analog dimming | STEP 1 | STEP 2 | STEP 3 |
|-----------------------------|----------------|--|--|
| | Switch turn ON | Switch turn OFF Less than 2.5 seconds Switch turn ON | Switch turn OFF Less than 2.5 seconds Switch turn ON |
| percentage of rated current | 100% | 40% | 10% |



NOTE: if the OFF time is longer than 2.5 seconds, once switch on again, PLM-40(E) will provide 100% of rated output current

AC input voltage drop vs. output current characteristics

| | | | | |
|---------------|------|------|-----|-----|
| AC input drop | 10% | 8% | 5% | 3% |
| Io drop | <18% | <13% | <8% | <6% |

NOTE: Output current will return to the rated value within 70ms