



■ Features :

- Universal AC input / Full range (up to 295VAC)
- Fully isolated plastic case with IP64 level
- Built-in constant current limiting circuit with adjustable OCP level
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC function
- IP64 design for indoor or outdoor installations
- UL1310 Class 2 power unit
- Pass LPS
- Cooling by free air convection
- 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

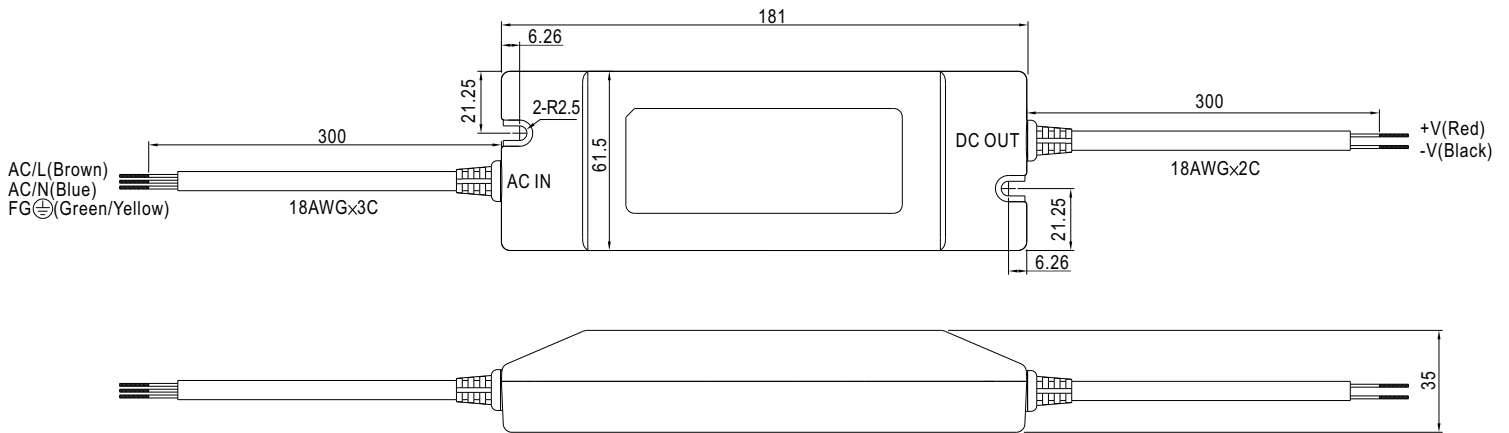


SPECIFICATION

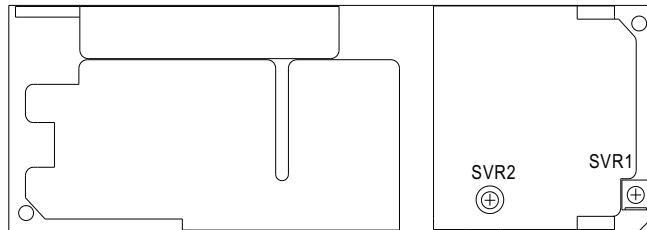
| MODEL | | PLN-45-12 | PLN-45-15 | PLN-45-20 | PLN-45-24 | PLN-45-27 | PLN-45-36 | PLN-45-48 | |
|-----------------|---|--|--------------|------------|-----------|-------------|------------|--------------|--|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 27V | 36V | 48V | |
| | CONSTANT CURRENT OPERATION VOLTAGE Note.6 | 9 ~ 12V | 11.25 ~ 15V | 15 ~ 20V | 18 ~ 24V | 20.25 ~ 27V | 27 ~ 36V | 36 ~ 48V | |
| | RATED CURRENT | 3.8A | 3A | 2.3A | 1.9A | 1.7A | 1.25A | 0.95A | |
| | CURRENT RANGE | 0 ~ 3.8A | 0 ~ 3A | 0 ~ 2.3A | 0 ~ 1.9A | 0 ~ 1.7A | 0 ~ 1.25A | 0 ~ 0.95A | |
| | RATED POWER | 45.6W | 45W | 46W | 45.6W | 45.9W | 45W | 45.6W | |
| | RIPPLE & NOISE (max.) Note.2 | 2Vp-p | 2.4Vp-p | 1.8Vp-p | 2.7Vp-p | 2.7Vp-p | 3.6Vp-p | 4.6Vp-p | |
| | VOLTAGE ADJ. RANGE Note.5 | 11.5 ~ 13V | 14.5 ~ 16.2V | 19.5 ~ 22V | 24 ~ 26V | 25 ~ 30V | 32.5 ~ 39V | 43.6 ~ 51.8V | |
| | CURRENT ADJ. RANGE Note.5 | Can be adjusted by internal potential meter SVR1 | | | | | | | |
| | VOLTAGE TOLERANCE Note.3 | ±10% | | | | | | | |
| | LINE REGULATION | ±3.0% | | | | | | | |
| LOAD REGULATION | ±5.0% | | | | | | | | |
| SETUP TIME | 1500ms / 230VAC 3000ms / 115VAC at full load | | | | | | | | |
| INPUT | VOLTAGE RANGE Note.4 | 90 ~ 295VAC 127 ~ 417VDC | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | |
| | POWER FACTOR | PF ≥ 0.9 at 75 ~ 100% load, 115VAC / 230VAC | | | | | | | |
| | EFFICIENCY(Typ.) | 83.5% | 85% | 86.5% | 86.5% | 86.5% | 87.5% | 87.5% | |
| | AC CURRENT | 0.55A/115VAC 0.25A/230VAC | | | | | | | |
| | INRUSH CURRENT(max.) | 40A/230VAC | | | | | | | |
| LEAKAGE CURRENT | <0.75mA / 240VAC | | | | | | | | |
| PROTECTION | OVER CURRENT | 95 ~ 110% | | | | | | | |
| | SHORT CIRCUIT | Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | |
| | OVER VOLTAGE | 13.8 ~ 16V | 17.5 ~ 21V | 22.8 ~ 25V | 28 ~ 32V | 31 ~ 35V | 41 ~ 46V | 54 ~ 60V | |
| | OVER TEMPERATURE | 95°C ±10°C (TSW1) detect on heatsink of power transistor | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -30 ~ +50°C (Refer to output load derating curve) | | | | | | | |
| | 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 | UL879, UL8750, UL1310 Class 2, TUV EN61347-1, EN61347-2-13 independent, CAN/CSA C22.2 No. 223-M91(except for 48V), IP64 approved | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH | | | | | | | |
| | EMI CONDUCTION & RADIATION | Compliance to EN55015 | | | | | | | |
| | HARMONIC CURRENT | Compliance to EN61000-3-2 Class C (≥ 75% load) ; EN61000-3-3 | | | | | | | |
| | EMS IMMUNITY | Compliance to EN61000-4-2,3,4,5,6,8,11; En61547, light industry level, criteria A | | | | | | | |
| OTHERS | MTBF | 497.8Khrs min. MIL-HDBK-217F (25°C) | | | | | | | |
| | DIMENSION | 181*61.5*35mm (L*W*H) | | | | | | | |
| | PACKING | 0.5Kg; 24pcs/13Kg/0.75CUFT | | | | | | | |
| NOTE | <ol style="list-style-type: none"> 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. Direct connecting to LEDs is not suggested for models with "RIPPLE & NOISE" >±10% and using additional drivers is highly recommended. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Derating may be needed under low input voltage. Please check the static characteristics for more details. 5. Output voltage can be adjusted through the SVR1 on the PCB ; limit of output constant current level can be adjusted through the SVR2 on the PCB. 6. Constant current operation region is within 75% ~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. 7. 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.960A Unit:mm



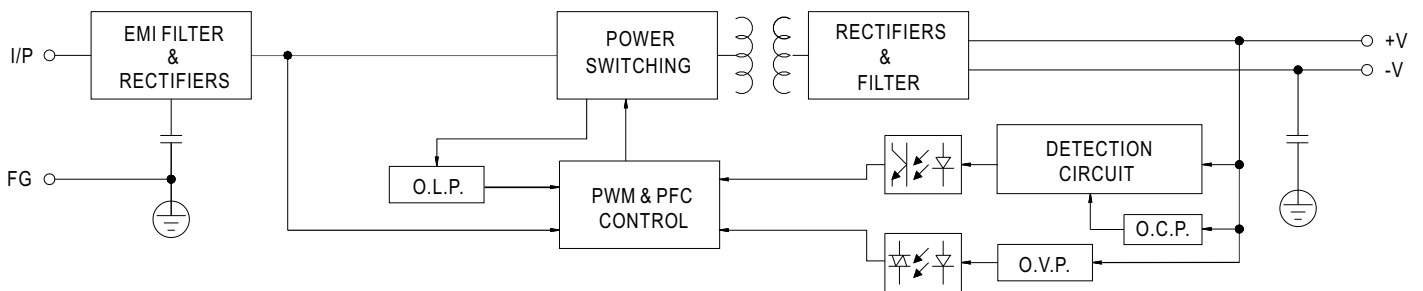
Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.



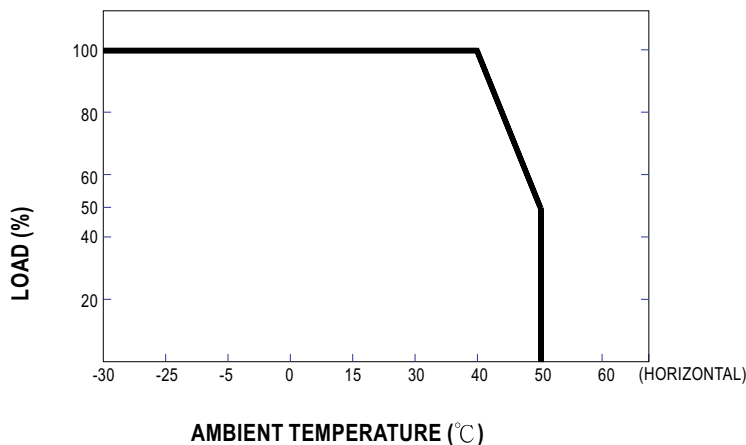
| | |
|------|---------------------------|
| SVR1 | Output voltage adjustment |
| SVR2 | Output current adjustment |

Block Diagram

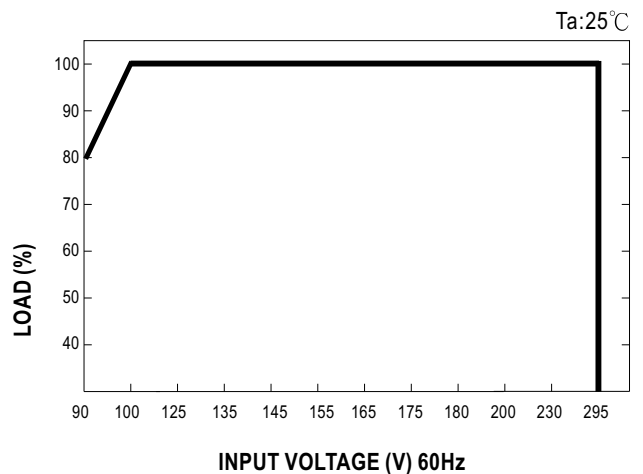
fosc : 95KHz(115VAC)
135KHz(230VAC)



Derating Curve



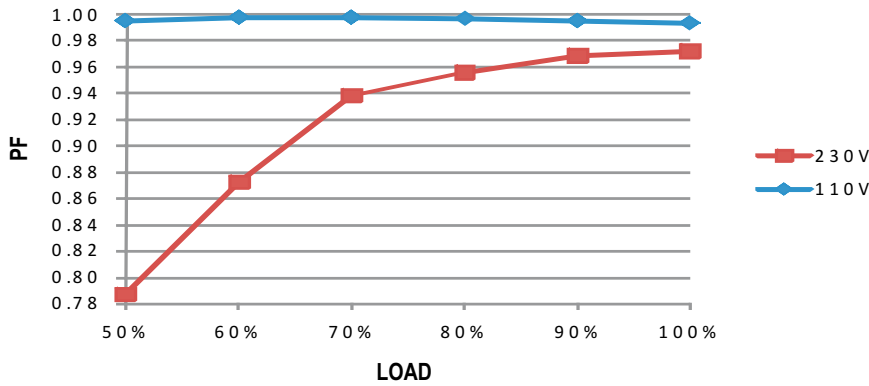
Static Characteristics



Power Factor Characteristic

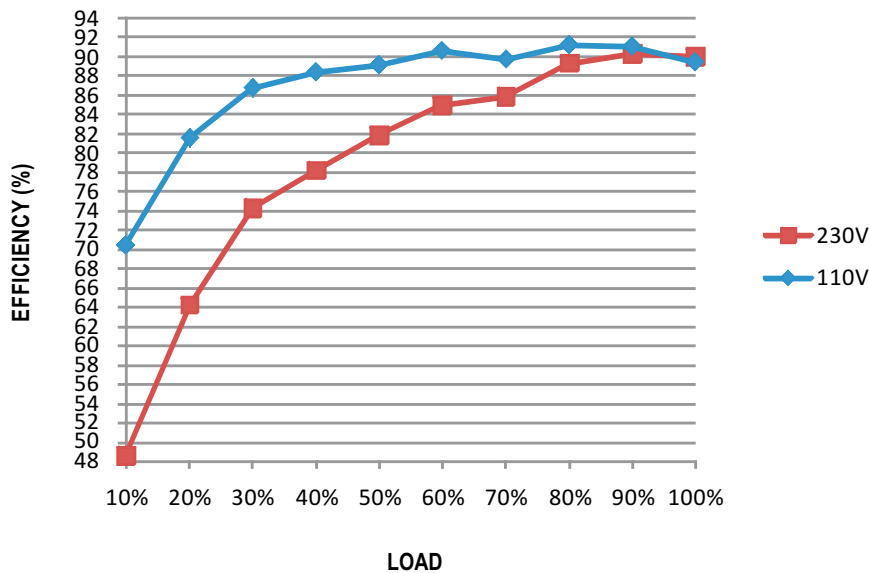
Power factor will be higher than 0.9 when output loading is 75% or higher.

Constant Current Mode



EFFICIENCY vs LOAD (48V Model)

PLN-45 series possess superior working efficiency that up to 87.5% can be reached in field applications.

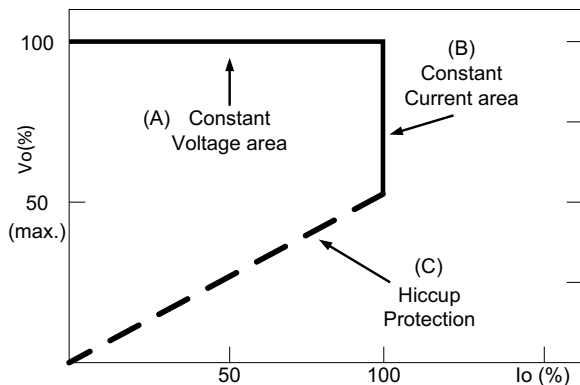


DRIVING METHODS OF LED MODULE

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