



■ Features :

- Universal AC input / Full range (up to 295VAC)
- High efficiency 90%
- 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
- Suitable for dry / damp locations
- Compliance to worldwide safety regulations for lighting
- 2 years warranty

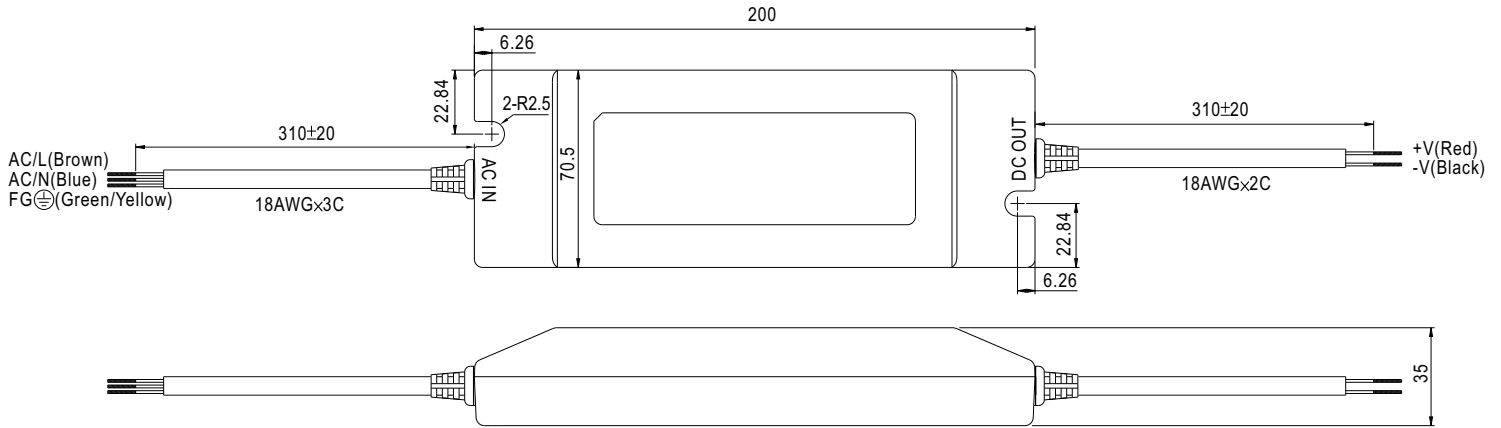


SPECIFICATION

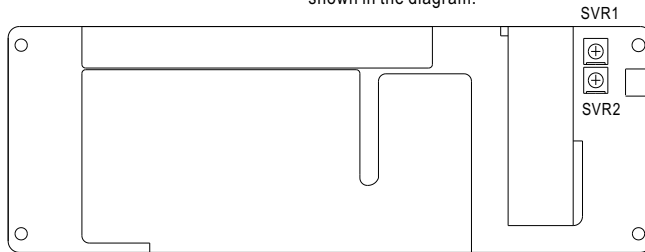
| MODEL | PLN-100-12 | PLN-100-15 | PLN-100-20 | PLN-100-24 | PLN-100-27 | PLN-100-36 | PLN-100-48 | |
|--------------|--|---|-------------|-----------------------------|--------------|----------------------------|--------------|------------|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 27V | 36V | 48V |
| | CONSTANT CURRENT REGION Note.6 | 9 ~ 12V | 11.25 ~ 15V | 15 ~ 20V | 18 ~ 24V | 20.25 ~ 27V | 27 ~ 36V | 36 ~ 48V |
| | RATED CURRENT Note.5 | 5A | 5A | 4.8A | 4A | 3.55A | 2.65A | 2A |
| | RATED POWER Note.5 | 60W | 75W | 96W | 96W | 95.85W | 95.4W | 96W |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p |
| | VOLTAGE ADJ. RANGE (SVR1) | 10.2 ~ 12V | 12.8 ~ 15V | 17 ~ 20V | 20.4 ~ 24V | 23 ~ 27V | 30.6 ~ 36V | 40.8 ~ 48V |
| | CURRENT ADJ. RANGE(SVR2) | 3.75 ~ 5A | 3.75 ~ 5A | 3.6 ~ 4.8A | 3 ~ 4A | 2.6 ~ 3.55A | 2 ~ 2.65A | 1.5 ~ 2A |
| | VOLTAGE TOLERANCE Note.3 | ±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 | 1200ms, 80ms/230VAC 1200ms, 80ms/115VAC at full load | | | | | | |
| | HOLD UP TIME (Typ.) | 60ms/230VAC 30ms/115VAC at full load | | | | | | |
| INPUT | VOLTAGE RANGE Note.4 | 90 ~ 295VAC | | 127 ~ 417VDC | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | |
| | POWER FACTOR (Typ.) | PF>0.95/230VAC | | PF>0.95/115VAC at full load | | PF ≥ 0.9 at 75 ~ 100% load | | |
| | EFFICIENCY (Typ.) | 84.5% | 86.5% | 90% | 90% | 90% | 90% | 89% |
| | 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/230VAC | | | | | | |
| | LEAKAGE CURRENT | <0.75mA / 240VAC | | | | | | |
| PROTECTION | OVER CURRENT | 95 ~ 102% 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 | 13 ~ 16V | 16.5 ~ 20V | 22 ~ 27V | 27 ~ 34V | 30 ~ 36V | 39 ~ 48V | 52 ~ 64V |
| | OVER TEMPERATURE | 90°C ±10°C (RTH2) Protection type : Shut down o/p voltage, re-power on to recover | | | | | | |
| 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 Note.7 | UL879, UL8750, UL1310 Class 2, TUV EN60950-1, 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, EN55022 (CISPR22) Class B | | | | | | |
| | 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; ENV50204, EN61547, EN55024, light industry level (surge 4KV), criteria A | | | | | | |
| OTHERS | MTBF | 303.1Khrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | DIMENSION | 200*70.5*35mm (L*W*H) | | | | | | |
| | PACKING | 0.52Kg; 20pcs/12.5Kg/0.76CUFT | | | | | | |
| 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. 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. 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. 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. 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. | | | | | | | |

Mechanical Specification

Case No.955A Unit:mm



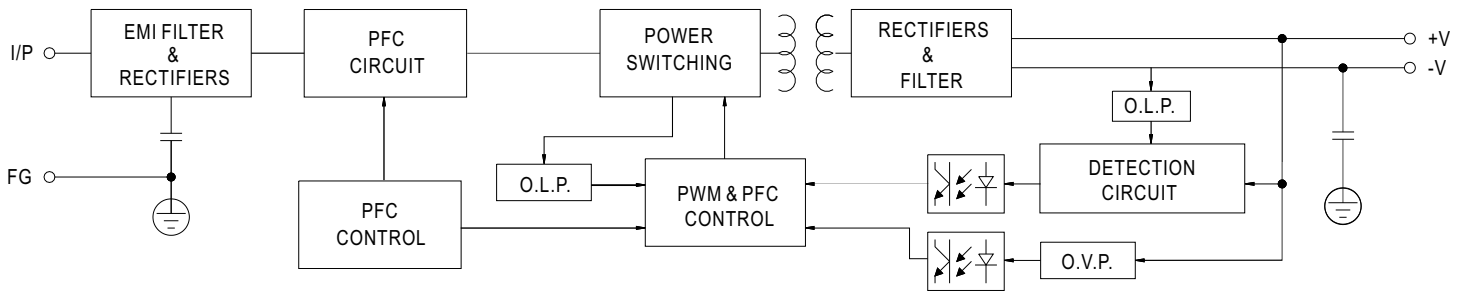
Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.



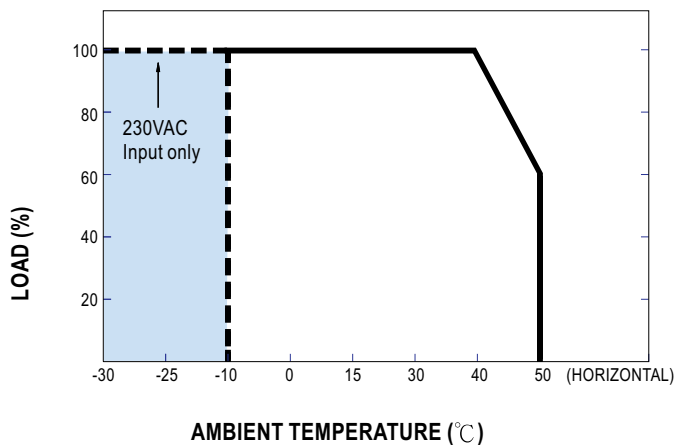
| | |
|------|---------------------------|
| SVR1 | Output voltage adjustment |
| SVR2 | Output current adjustment |

Block Diagram

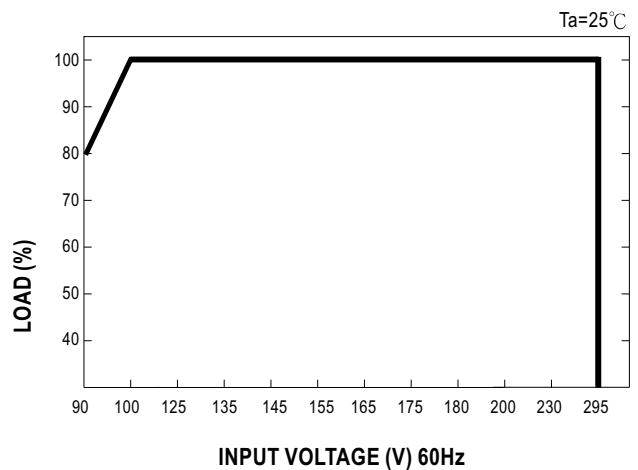
Fosc : 100KHz



Derating Curve



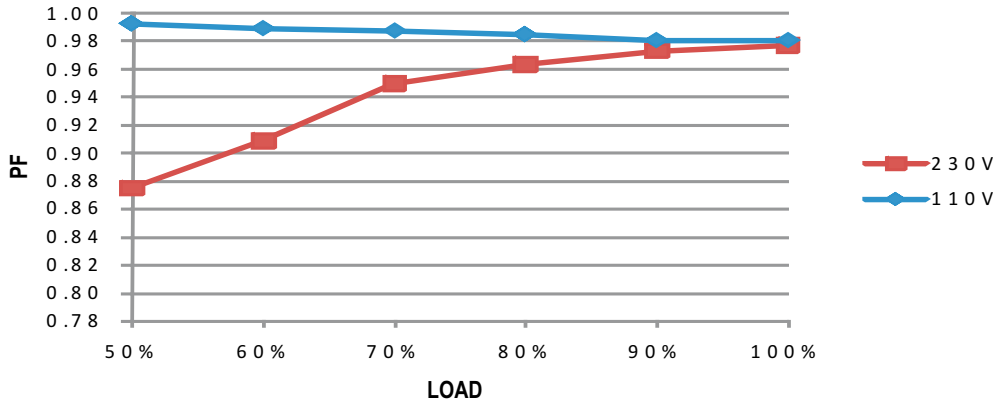
Static Characteristics



Power Factor Characteristic

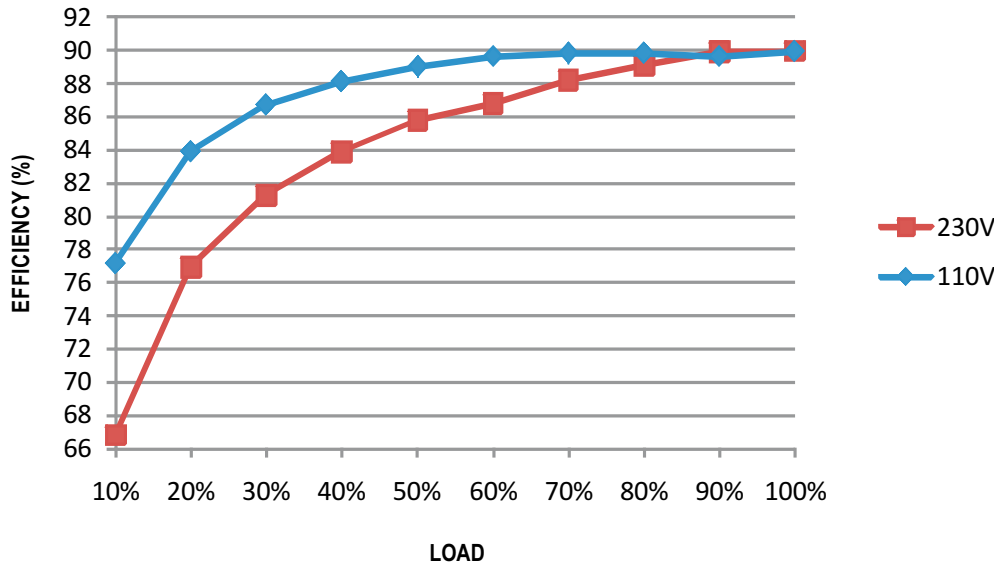
Power factor will be higher than 0.9 when output loading is 75% or higher.

Constant Current Mode



EFFICIENCY vs LOAD (48V Model)

PLN-100 series possess superior working efficiency that up to 89% can be reached in field applications.

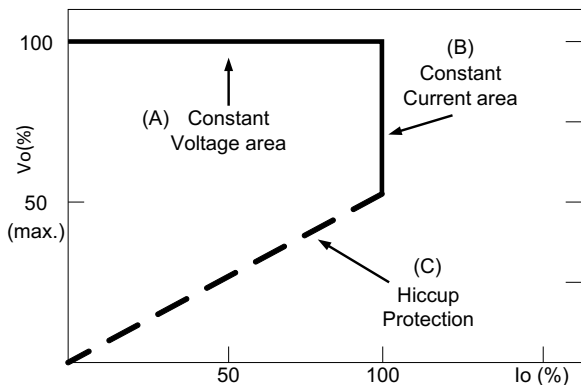


DRIVING METHODS OF LED MODULE

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