



■ 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

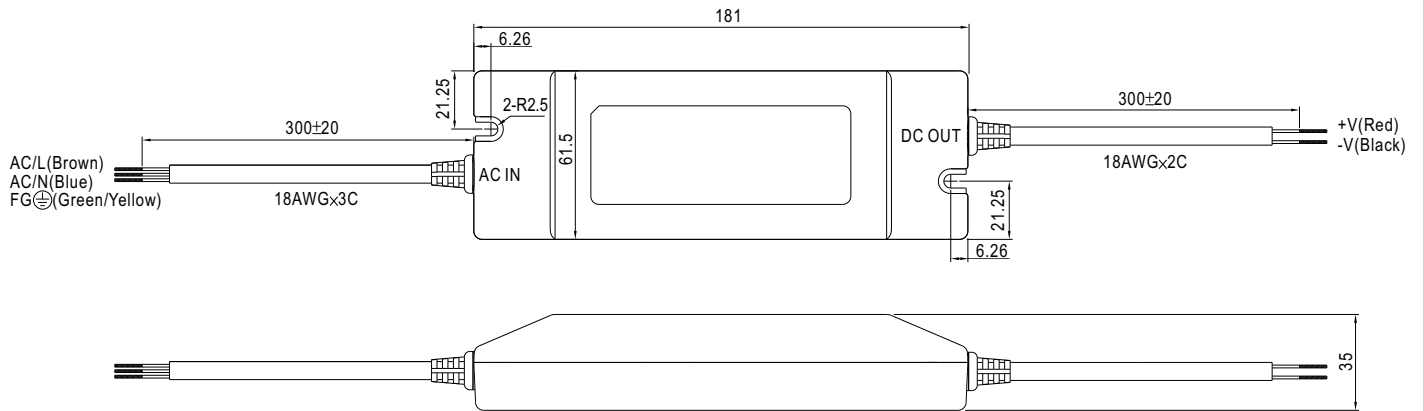
SPECIFICATION



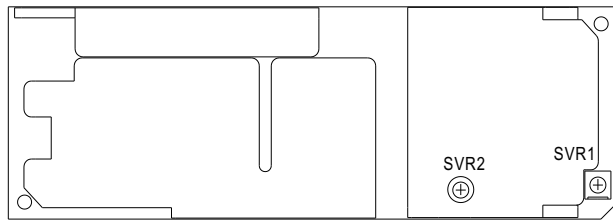
MODEL		PLN-45-12	PLN-45-15	PLN-45-20	PLN-45-24	PLN-45-27	PLN-45-36	PLN-45-48	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V	
	CONSTANT CURRENT OPERATION VOLTAGE <small>Note.6</small>	9 ~ 12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	20.25 ~ 27V	27 ~ 36V	36 ~ 48V	
	RATED CURRENT	3.8A	3A	2.3A	1.9A	1.7A	1.25A	0.95A	
	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.) <small>Note.2</small>	2Vp-p	2.4Vp-p	1.8Vp-p	2.7Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p	
	VOLTAGE ADJ. RANGE <small>Note.5</small>	11.5 ~ 13V	14.5 ~ 16.2V	19.5 ~ 22V	24 ~ 26V	25 ~ 30V	32.5 ~ 39V	43.6 ~ 51.8V	
	Can be adjusted by internal potential meter SVR1								
	CURRENT ADJ. RANGE <small>Note.5</small>	3% ~ -25%. Can be adjusted by internal potential meter SVR2							
	VOLTAGE TOLERANCE <small>Note.3</small>	±10%							
LINE REGULATION	±3.0%								
LOAD REGULATION	±5.0%								
SETUP TIME	1500ms / 230VAC 3000ms / 115VAC at full load								
INPUT	VOLTAGE RANGE <small>Note.4</small>	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%							
	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	13.8 ~ 16V	17.5 ~ 21V	22.8 ~ 25V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V	
Protection type : Shut down o/p voltage, re-power on to recover									
OVER TEMPERATURE	95°C ±10°C (TSW1) detect on heatsink of power transistor								
Protection type : Shut down o/p voltage, recovers automatically after temperature goes down									
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



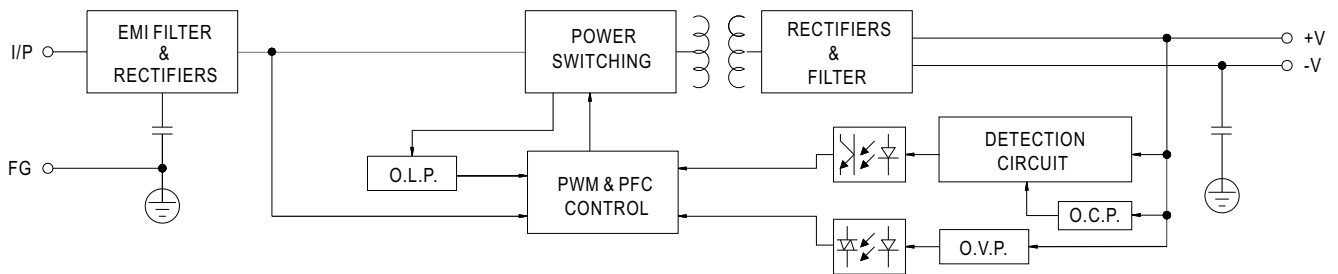
Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.



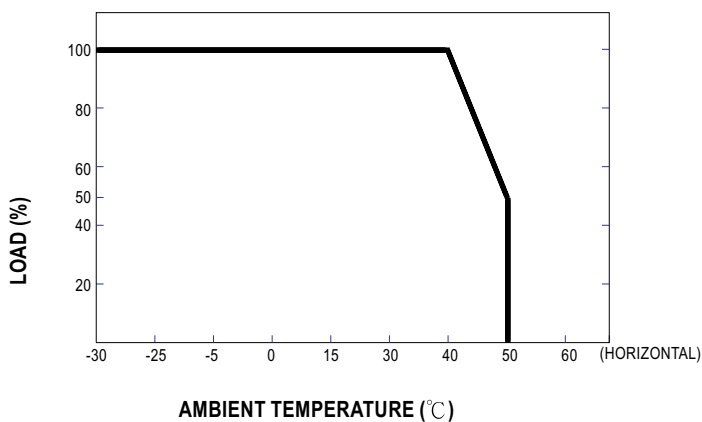
SVR1	Output voltage adjustment
SVR2	Output current adjustment

Block Diagram

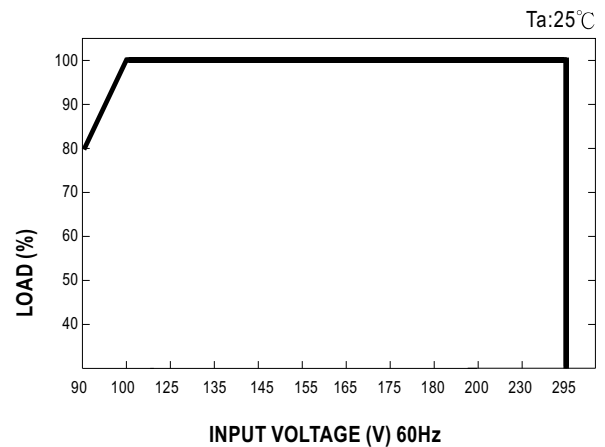
fosc : 95KHz(115VAC)
135KHz(230VAC)



Derating Curve



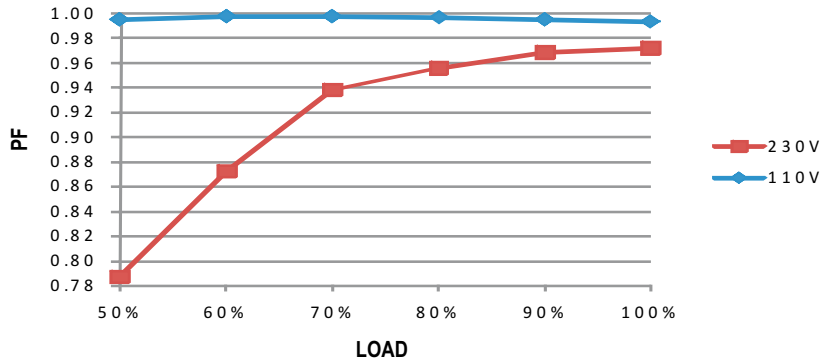
Static Characteristics



Power Factor Characteristic

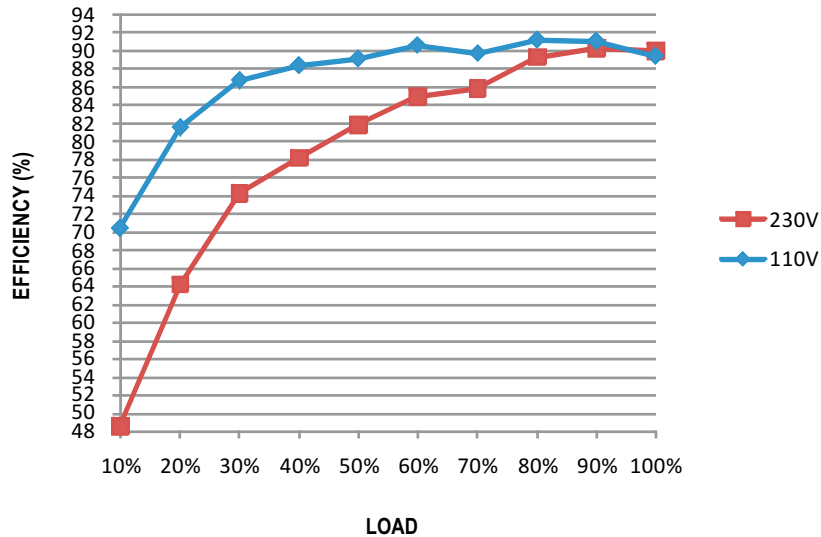
Power factor will be higher than 0.9 when output loading is 75% or higher.

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.

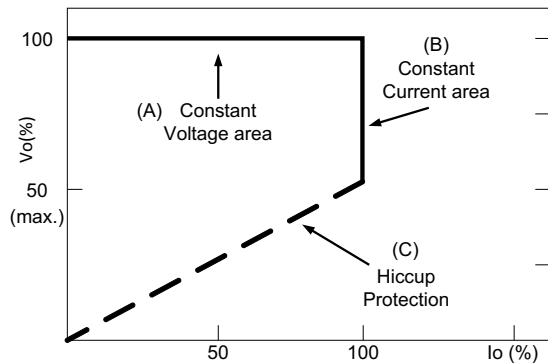


DRIVING METHODS OF LED MODULE

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