



## 20W Single Output LED Power Supply

## PLN-20 series



## ■ Features :

- Universal AC input / Full range(up to 277VAC)
- Built-in constant current limiting circuit with adjustable OCP level
- Fully isolated plastic case
- Protections:Short circuit/Over load/Over voltage/Over temperature
- Built-in active PFC function
- IP64 design for indoor or outdoor installations
- Small and compact size
- Cooling by free air convection
- 100% full load burn-in test
- High reliability,low cost
- Suitable for Damp / wet locations
- Suitable for LED lighting and moving sign applications
- 2 years warranty



## SPECIFICATION

MODEL	PLN-20-12	PLN-20-18	PLN-20-24	PLN-20-36	PLN-20-48	
OUTPUT	DC VOLTAGE	12V	18V	24V	36V	48V
	LED OPERATION VOLTAGE Note.5	9 ~ 12V	13.5 ~ 18V	18 ~ 24V	27 ~ 36V	36 ~ 48V
	RATED CURRENT	1.6A	1.1A	0.8A	0.55A	0.42A
	CURRENT RANGE	0 ~ 1.6A	0 ~ 1.1A	0 ~ 0.8A	0 ~ 0.55A	0 ~ 0.42A
	CURRENT ADJ. RANGE	75% ~ 100%				
	RATED POWER	19.2W	19.8W	19.2W	19.8W	20.2W
	RIPPLE & NOISE (max.) Note.2	2.5Vp-p	3.0Vp-p	3.0Vp-p	3.0Vp-p	3.8Vp-p
	VOLTAGE TOLERANCE Note.3	±10%				
	LINE REGULATION	±3.0%				
	LOAD REGULATION	±10%				
SETUP TIME	2300ms / 230VAC 3000ms / 115VAC at full load					
INPUT	VOLTAGE RANGE Note.4	90 ~ 277VAC 127~392VDC				
	FREQUENCY RANGE	47 ~ 63Hz				
	POWER FACTOR	PF ≧ 0.9 at 75~100% load, 115VAC/230VAC				
	EFFICIENCY(Typ.)	80%	81%	82%	83%	83.5%
	AC CURRENT	0.4A/115VAC 0.2A/230VAC				
	INRUSH CURRENT(max.)	40A/230VAC				
	LEAKAGE CURRENT	0.5mA / 240VAC				
PROTECTION	OVER CURRENT Note.5	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	14 ~ 16V	19 ~ 22V	27 ~ 34V	41 ~ 46V	54 ~ 60V
	OVER TEMPERATURE	110°C±10°C (TSW1) Protection type : Shut down o/p voltage, recovers automatically after temperature goes down				
ENVIRONMENT	WORKING TEMP.	-30 ~ +60°C (Refer to output load derating curve)				
	WORKING HUMIDITY	20 ~ 90% RH non-condensing				
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH				
	TEMP. COEFFICIENT	±0.06%/°C (0 ~ 50°C)				
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes				
SAFETY & EMC	SAFETY STANDARDS	IEC61347-1, IEC61347-2-13, TUV EN61347-1, EN61347-2-13, UL8750, IP64 approved				
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC				
	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	643.6Khrs min. MIL-HDBK-217F (25°C)				
	DIMENSION	148.5*38.5*28mm (L*W*H)				
	PACKING	0.18Kg; 60pcs/12.8Kg/0.9CUFT				
NOTE	<ol style="list-style-type: none"> <li>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>3. Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>4. Derating may be needed under low input voltage, please check the static characteristic for more details.</li> <li>5. 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.</li> <li>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.</li> </ol>					

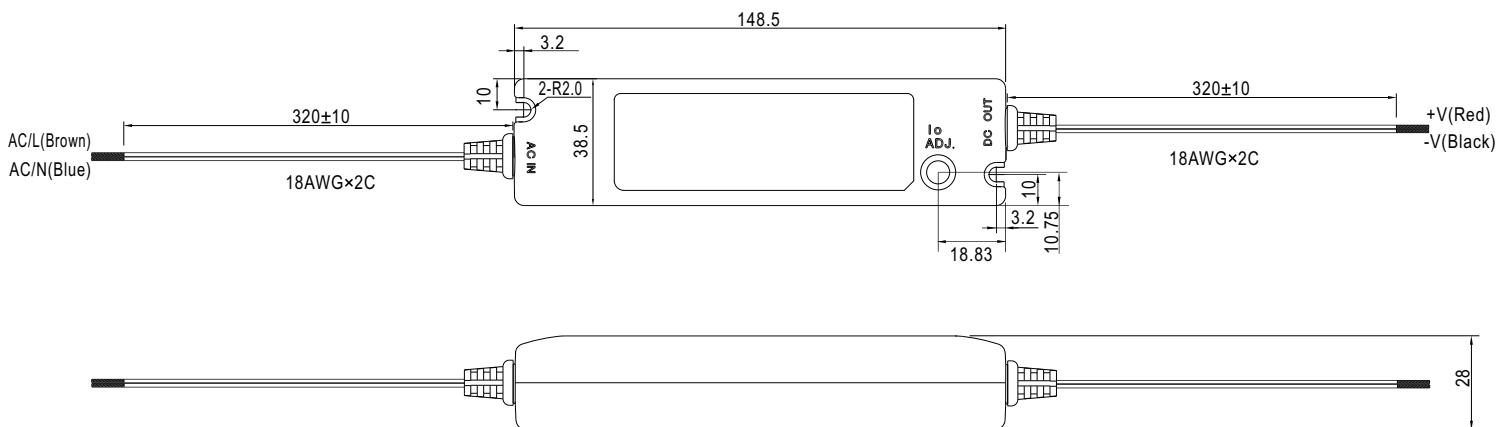


# 20W Single Output LED Power Supply

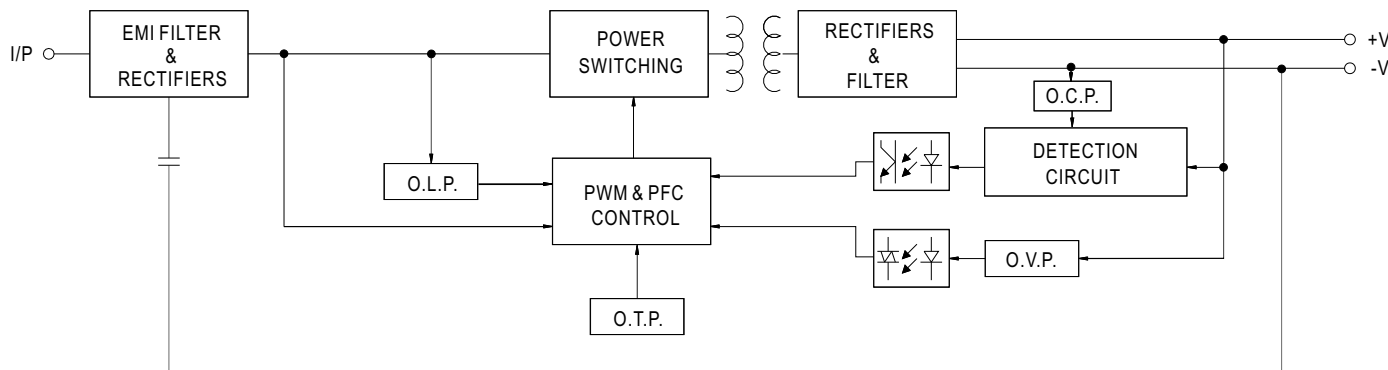
# PLN-20 series

## Mechanical Specification

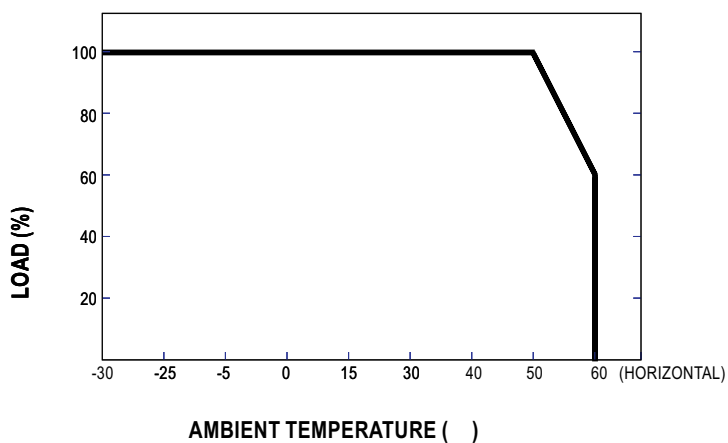
Case No.989B Unit:mm



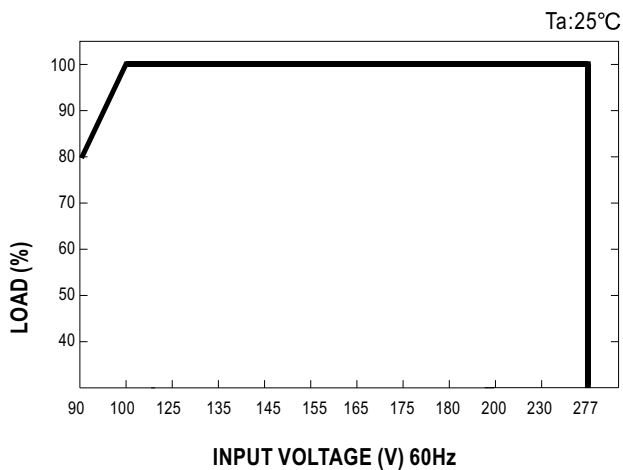
## Block Diagram



## Derating Curve



## Static Characteristics





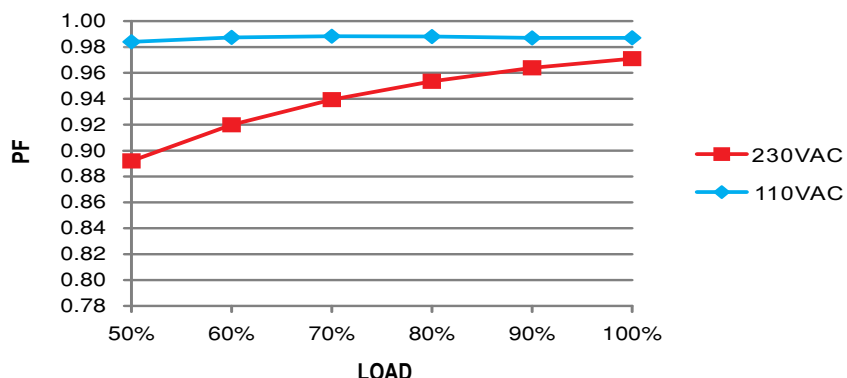
# 20W Single Output LED Power Supply

# PLN-20 series

## Power Factor Characteristic

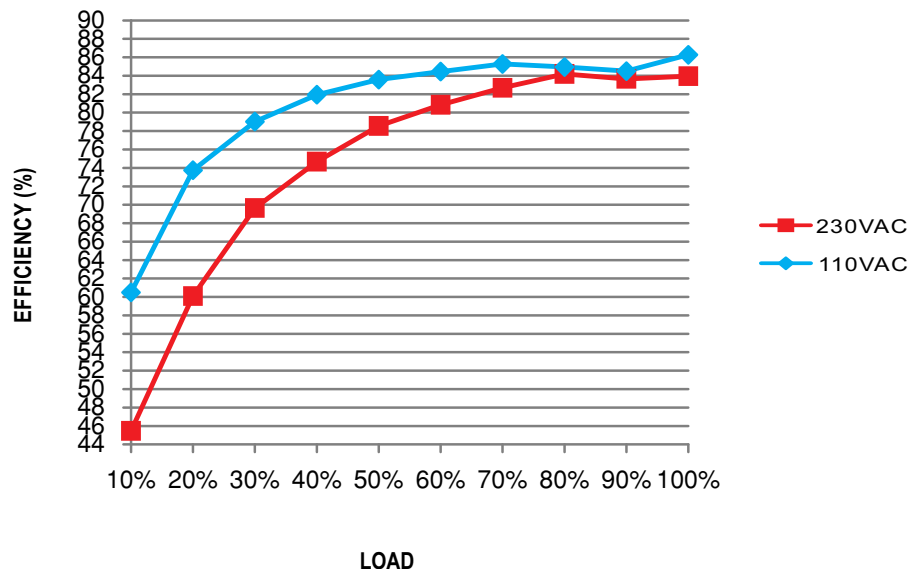
Power factor will be higher than 0.9 when output loading is 75% or higher.

### Constant Current Mode



## EFFICIENCY vs LOAD (48V Model)

PLN-20 series possess superior working efficiency that up to 83.5% can be reached in field applications.

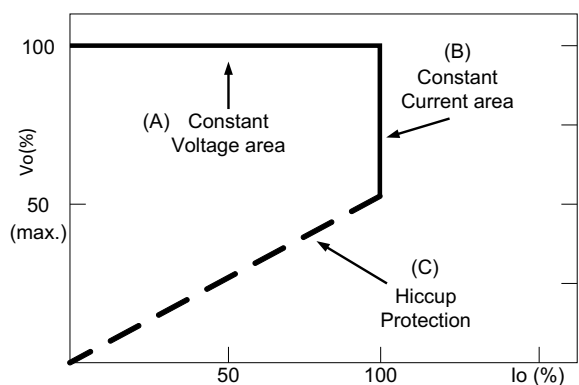


## DRIVING METHODS OF LED MODULE

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