

LPF-90 Series

90W Single Output Switching LED Lighting Power Supplies



Case No: 8915FG
161 x 61 x 36 mm

Features

- Constant Voltage and Constant Current mode output
- Plastic housing with Class II design
- Built-in active PFC function
- Class 2 power unit
- Fully encapsulated with IP67 level
- Typical lifetime >50000 hours
- 5 years warranty

LPF - 90 - 24
Series name Rated wattage Rated output voltage (12/15/20/24/30/36/42/48/54V)



Specification

INPUT	Voltage	90V ~ 305VAC 127 ~ 431VDC (Please refer to "Static Characteristic" section)								
	Frequency	47 ~ 63 Hz								
	Power Factor	PF _≥ 0.97/115VAC PF _≥ 0.96/230VAC, PF _≥ 0.92/277VAC at full load (Please refer to 'Power Characteristic' curve)								
	Total Harmonic	THD <20% when output loading ≥60% at 115VAC input and output loading ≥75% at 277VAC input								
	Current	0.95A@115VAC 0.5A@230VAC 0.4A@277VAC								
	Inrush Current (Typ.)	Cold Start 70A(twidth=435μs measured at 50% Ipeak) @230VAC								
	Max no of PSUs on a 16A circuit breaker	4 units (circuit breaker of type B)/6 units (circuit breaker of type C) at 230VAC								
	Leakage Current	<0.75mA@240VAC								
OUTPUT	MODEL No.	LPF-90-15	LPF-90-20	LPF-90-24	LPF-90-30	LPF-90-36	LPF-90-42	LPF-90-48	LPF-90-54	
	Voltage	15V	20V	24V	30V	36V	42V	48V	54V	
	Rated Current	5A	4.5A	3.75A	3A	2.5A	2.15A	1.88A	1.67A	
	Constant Current Region	9~15V	12~20V	14.4~24V	18~30V	21.6~36V	25.2~42V	28.8~48V	32.4~54V	
	Rated Power	75W	90W	90W	90W	90W	90.3W	90.24W	90.18W	
	Ripple Noise MAX.	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	
	Efficiency	89%	90%	90.5%	91%	91%	91%	91%	91%	
	Voltage Tolerance	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	
	Line Regulation	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	
	Load Regulation	± 1.5%	± 1.0%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	
	Setup Rise Time	1200ms, 200ms / 115VAC 500ms, 200ms / 230VAC								
Holdup Time (Typ.)	16ms / 230VAC 16ms / 115VAC at full load									
PROTECTION	Over Current	95~108% Protection Type: Constant current limiting, recovers automatically after fault condition is removed								
	Over Voltage	18~21V	23~27V	28~34V	34~38V	41~46V	47~53V	54~60V	59~65V	
	Over Temperature	Protection Type: Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	Working Temp.	-40 ~ +70°C (Refer to "Output Load vs Temperature" section)								
	Max. Case Temperature	Tcase = +70°C								
	Working Humidity	20~95% RH non-condensing								
	Storage Temp., Humidity	-40 ~ +80°C, 10~95%RH								
	Temp. Co-efficient	±0.03% / °C (0~50°C)								
	Vibration	10 ~ 500Hz, 5G 12min./1cycle, period for 72 min. each along X, Y, Z axes								
SAFETY & EMC	Safety Standards	UL8750(type"HL"), CSA C22.2 No.250.13-12, ENEC EN61347-1, EN61347-2-13 independent, EN62384, J61347-1, J61347-2-13, EAC TP TC 004, GB19510.1,GB19510.14,IP67 approved ; Design refer to UL60950-1, TUV EN60950-1								
	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,EN61000-3-2 Class C (@load ≥60%) ; EN61000-3-3,GB17743 and GB17625.1, EAC TP TC 020								
	EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity Line-Line 2KV), EAC TP TC 020								
OTHERS	M.T.B.F.	301.6K hrs min. MIL-HDBK-217F (25°C)								
	Packaging	0.7Kg; 20pcs/15Kg/0.73CUFT								

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple and 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 setup tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltages. Please check the static characteristics for more details.
5. Length of setup time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the setup time.
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.
7. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without permanently connected to the mains.
8. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 70°C or less.
9. The ambient temperature of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude of higher than 2000m (6500ft).

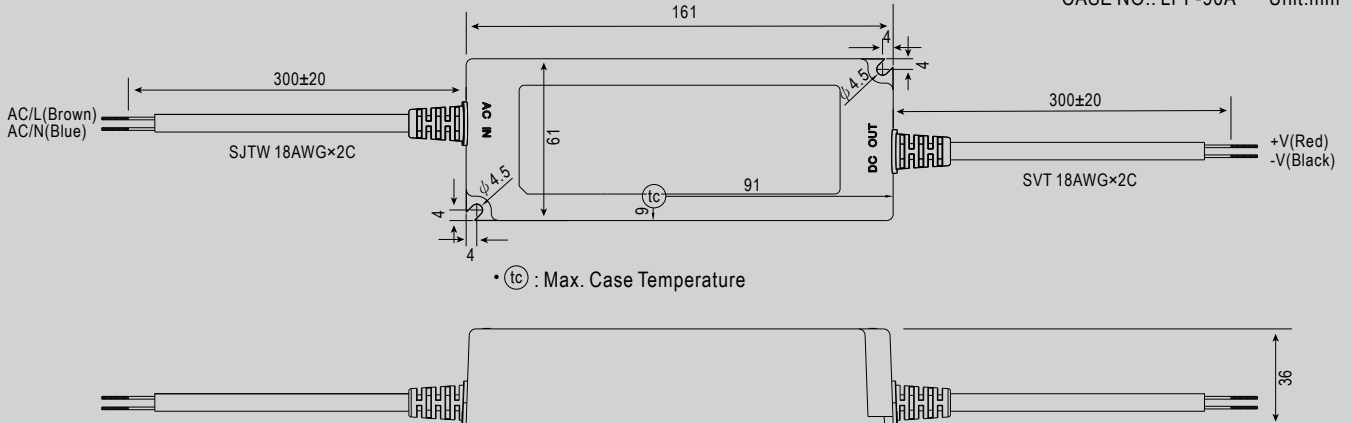
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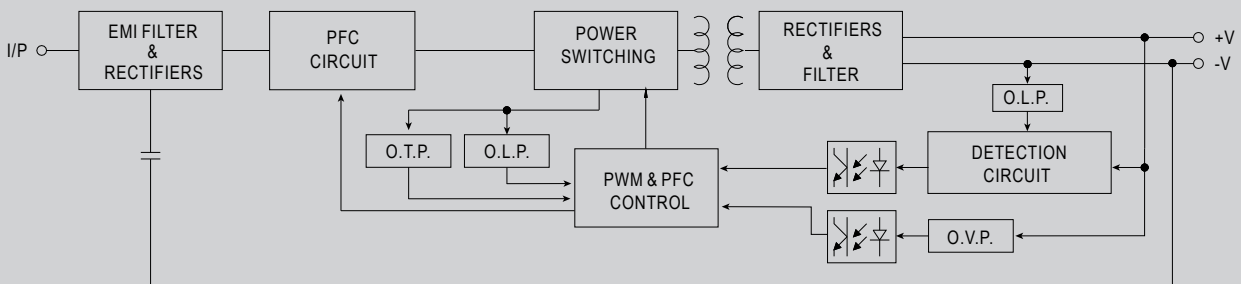
Mechanical Specification

CASE NO.: LPF-90A Unit:mm



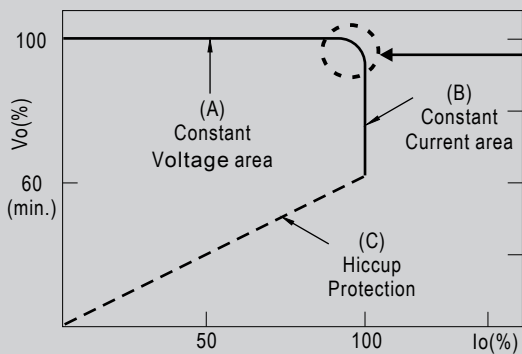
Block Diagram

fosc : 100KHz



Driving Methods of LED Module

This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.



In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

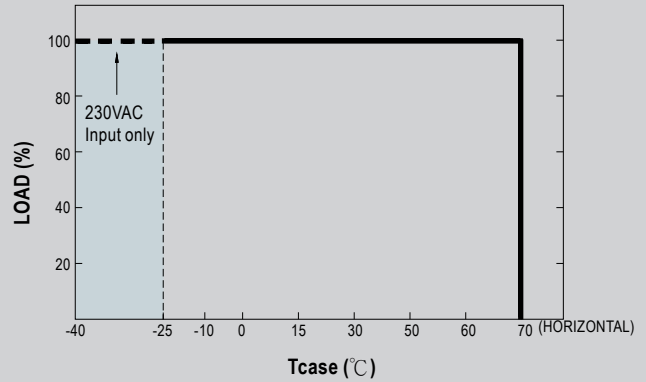
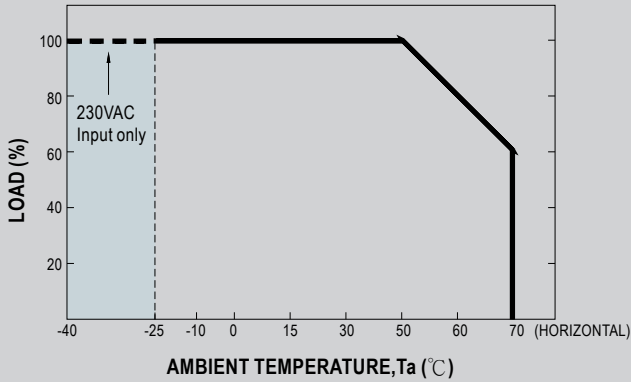
Typical output current normalized by rated current (%)

LPF-90 Series

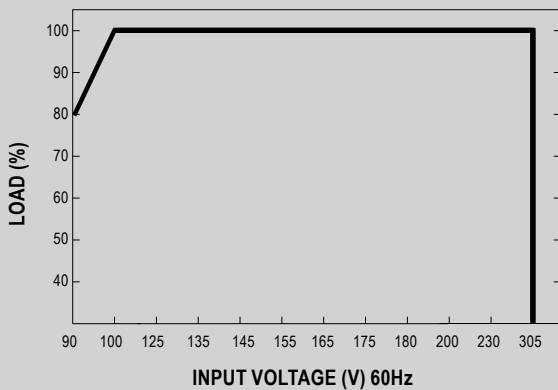
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Output Load vs Temperature



Static Characteristics

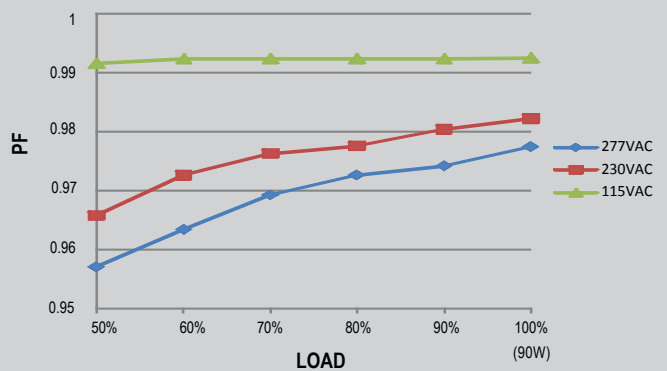


De-rating is needed under low input voltage.

Power Factor (PF) Characteristics

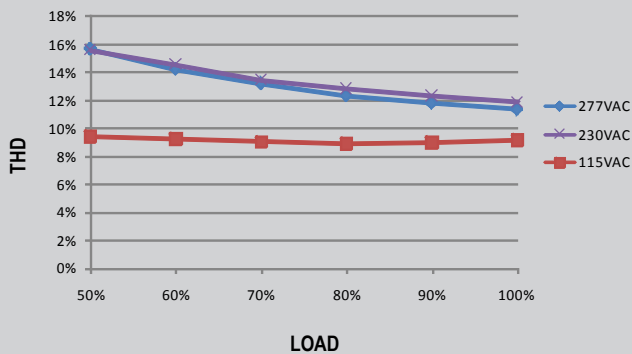
Tcase at 60°C

Constant Current Mode



Total Harmonic Distortion (THD)

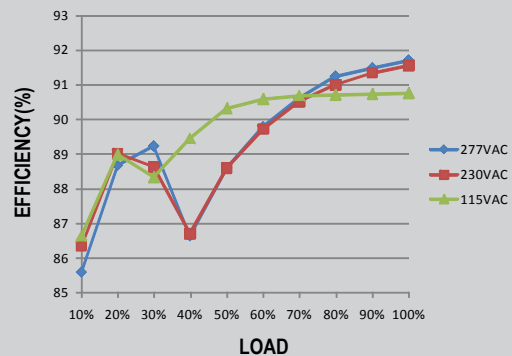
48V Model, Tcase at 60°C



Efficiency vs Load

LPF-90 series possess superior working efficiency that up to 91% can be reached in field applications.

48V Model, Tcase at 60°C



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Life Time

