

# LPF-40 Series

## 40W Single Output Dimming LED Lighting Power Supplies



Case No: 8010AC  
162.5 x 43 x 32 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 - 40 - 24  
Series name Rated wattage Rated output voltage (12/15/20/24/30/36/42/48/54V)



### Specification

INPUT	<b>Voltage</b>	90V ~ 305VAC 127 ~ 431VDC (Please refer to "Static Characteristic" section)								
	<b>Frequency</b>	47 ~ 63 Hz								
	<b>Power Factor</b>	PF <sub>≥</sub> 0.97/115VAC PF <sub>≥</sub> 0.95/230VAC, PF <sub>≥</sub> 0.92/277VAC at full load (Please refer to "Power Factor (PF) Characteristic" section)								
	<b>Total Harmonic Distortion</b>	THD <sub>≤</sub> 20% at >60% load/115VAC, 230VAC; at <sub>≥</sub> 75% load/277VAC								
	<b>Efficiency</b>	84%	85%	86%	87%	88%	88%	88.5%	90%	90%
	<b>AC Current</b>	0.6A@115VAC 0.3A@230VAC 0.25A@277VAC								
	<b>Inrush Current (Typ.)</b>	Cold Start 50A(twidth=210μs measured at 50% Ipeak) at 230VAC; Per NEMA 410								
	<b>Max. No. of PSUs on 16A Circuit Breaker</b>	12 Units (Circuit breaker of type B)/20 units (Circuit breaker of type C) at 230VAC								
	<b>Leakage Current</b>	<0.75mA@240VAC input								
	OUTPUT	<b>MODEL No.</b>	LPF-40-12	LPF-40-15	LPF-40-20	LPF-40-24	LPF-40-30	LPF-40-36	LPF-40-42	LPF-40-48
<b>Voltage</b>		12V	15V	20V	24V	30V	36V	42V	48V	54V
<b>Constant Current Voltage</b>		7.2~12V	9~15V	12~20V	14.4~24V	18~30V	21.6~36V	25.2~42V	28.8~48V	32.4~54V
<b>Rated Current</b>		3.34A	2.67A	2A	1.67A	1.34A	1.12A	0.96A	0.84A	0.76A
<b>Rated Power</b>		40.08W	40.08W	40W	40.08W	40.2W	40.32W	40.32W	40.32W	41.04W
<b>Ripple Noise MAX.</b>		150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250Vp-p	250mVp-p	350Vp-p
<b>Voltage Tolerance</b>		± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%	± 4.0%
<b>Line Regulation</b>		± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%
<b>Load Regulation</b>		± 2.0%	± 1.5%	± 1.0%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%	± 0.5%
<b>Setup Rise Time</b>		1000ms, 80ms / 115VAC		500ms, 80ms / 230VAC						
<b>Holdup Time (Typ.)</b>	16ms / 230VAC		16ms / 115VAC							
PROTECTION	<b>Over Current</b>	95~108% Constant current limiting, recovers automatically after fault condition is removed								
	<b>Short Circuit</b>	Hiccup mode recovers automatically after fault condition is removed								
	<b>Over Voltage</b>	15~17V	17.5~21V	23~27V	28~35V	34~40V	41~49V	46~54V	54~63V	59~66V
	<b>Over Temperature</b>	Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	<b>Working Temp.</b>	-40~+80°C (Refer to "Output Load vs Temperature" section)								
	<b>Max. Case Temperature</b>	Tcase = +80°C								
	<b>Working Humidity</b>	20~95% RH non-condensing								
	<b>Storage Temp., Humidity</b>	-40~+80°C, 10~95%RH								
	<b>Temp. Co-efficient</b>	±0.03% / °C (0~50°C)								
	<b>Vibration</b>	10~500Hz, 5G 12min./1cycle, period for 72 min. each along X, Y, Z axes								
SAFETY & EMC	<b>Withstand Voltage</b>	I/P-O/P:3.75KVAC								
	<b>Isolation Resistance</b>	I/P-OP:100M Ohms / 500VDC/ 25°C / 70% RH								
	<b>Safety Standards</b>	UL8750, CSA C22.2 No. 250.0-08, ENEC EN61347-1, EN61347-2-13 independent, EN62384, EAC TP TC 004, IP67, J61347-1, J61347-2-13, GB19510.1, GB19510.14 approved ; design refer to UL60950-1, TUV EN60950-1								
	<b>EMC Emission</b>	Compliance to EN55015, EN61000-3-2 Class C (@load <sub>≥</sub> 60%) ; EN61000-3-3, GB17743 and GB17625.1, EAC TP TC 020								
	<b>EMC Immunity</b>	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	<b>M.T.B.F.</b>	438.8K hrs min. MIL-HDBK-217F (25°C)								
	<b>Packaging</b>	0.44Kg; 32pcs/15.08Kg/0.93CUFT								

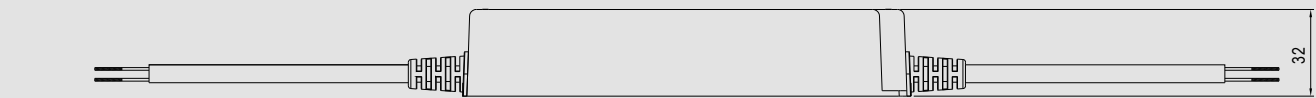
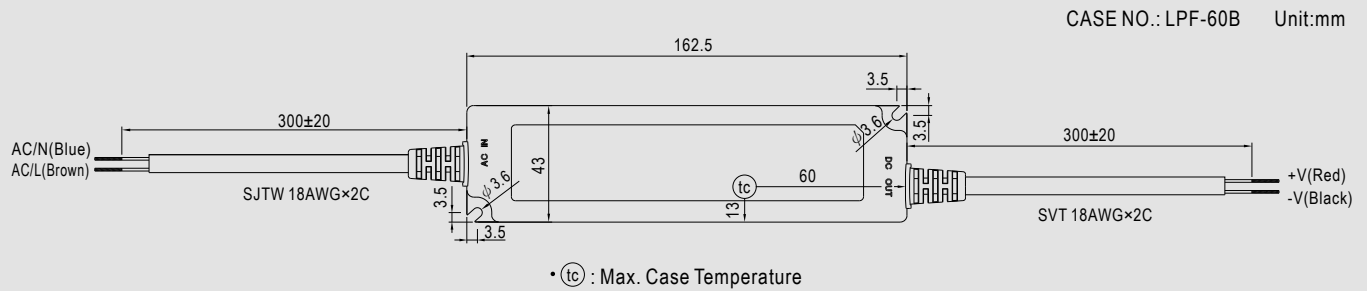
1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE".
3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor.
4. Tolerance : includes set up tolerance, line regulation and load regulation.
5. De-rating may be needed under low input voltages. Please refer to STATIC CHARACTERISTIC sections for details.
6. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.
7. The driver 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.
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. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch with permanent connection to the mains.
10. 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).

# LPF-40 Series

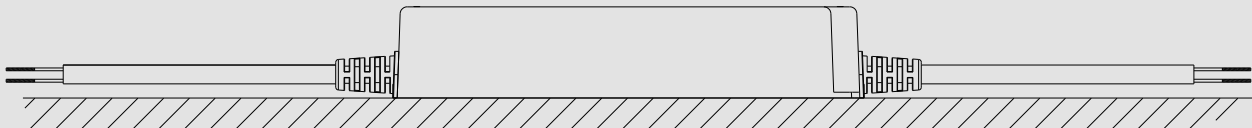
40W Single Output Dimming LED Lighting Power Supplies



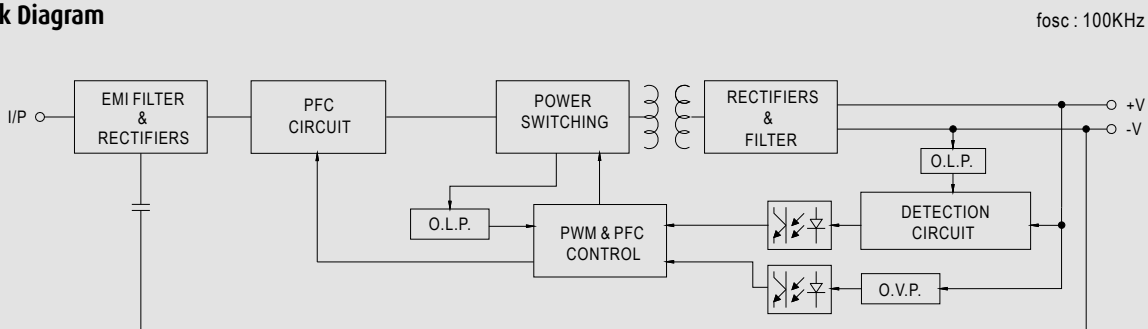
## Mechanical Specification



## Recommended Mounting Direction

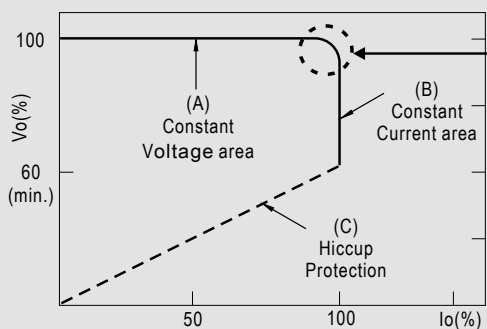


## Block Diagram



## Driving Method 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.

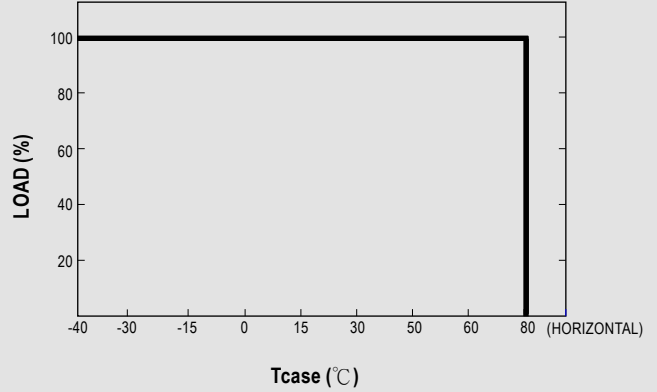
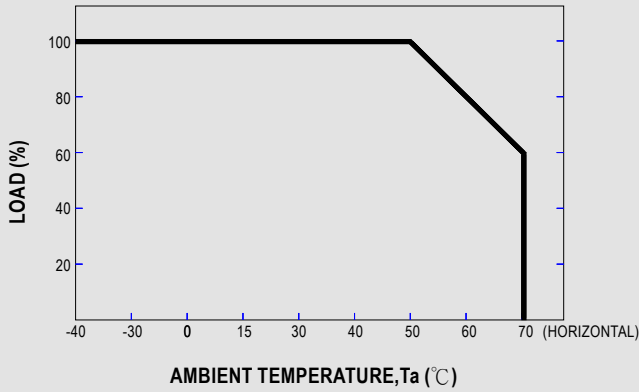
Typical output current normalized by rated current (%)

# LPF-40 Series

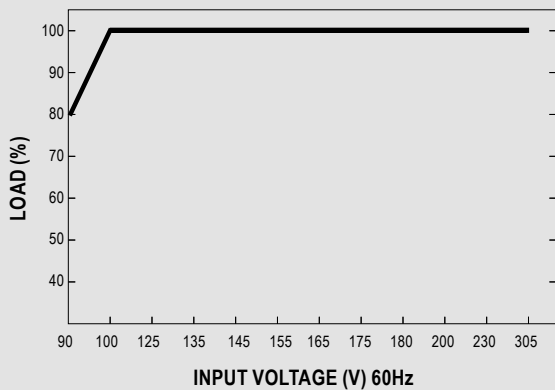
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## Output Load vs Temperature



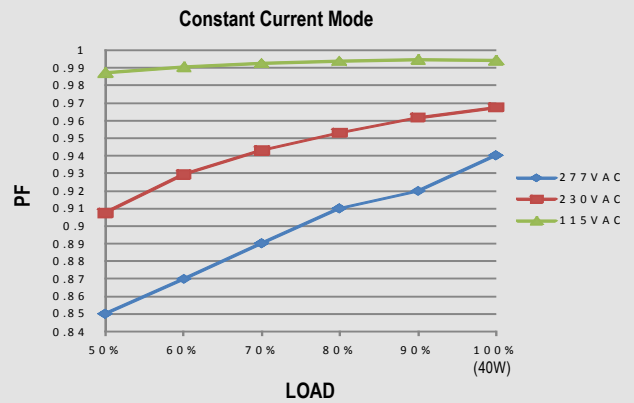
## Static Characteristic



De-rating is needed under low input voltage.

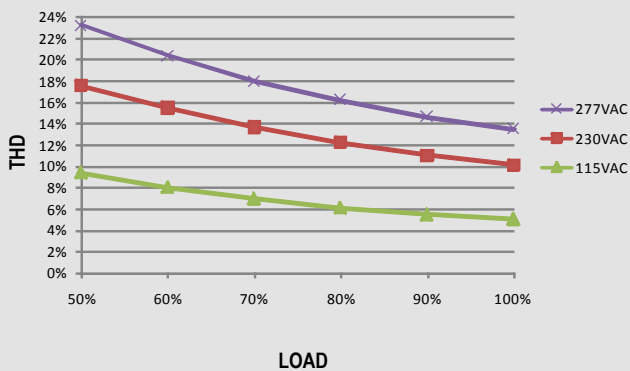
## Power Factor (PF) Characteristic

Tcase at 70°C



## Total Harmonics Distortion (THD)

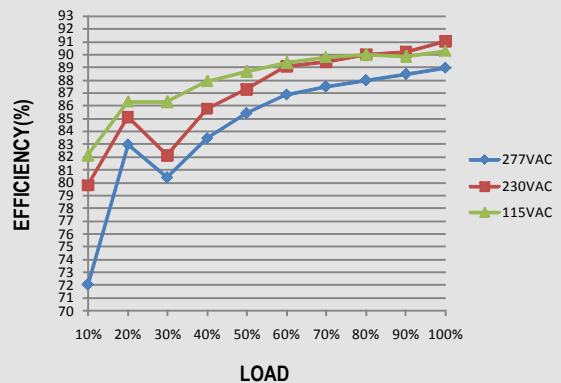
48V Model, Tcase at 70°C



## Efficiency vs Load

LPF-40 series possess superior working efficiency that up to 90% can be reached in field applications.

48V Model, Tcase at 70°C



# LPF-40 Series

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## Lifetime

