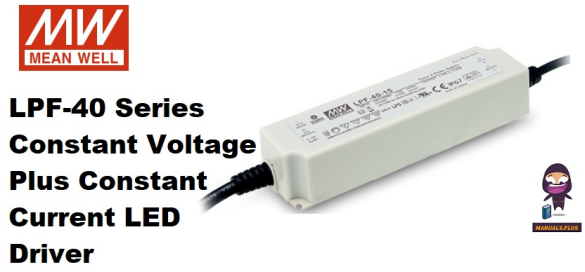


MEAN WELL LPF-40 Series Constant Voltage Plus Constant Current LED Driver Owner's Manual

Contents

MEAN WELL LPF-40 Series Constant Voltage Plus Constant Current LED Driver

Product Specifications

MODEL	OUTPUT	RATED CURRENT	RATED POWER
LPF-40-12	12V, 7.2-12V constant current region	3.34A	40.08W
LPF-40-15	15V, 9-15V constant current region	2.67A	40.08W
LPF-40-20	20V, 12-20V constant current region	2A	40W
LPF-40-24	24V, 14.4-24V constant current region	1.67A	40.08W

Product Usage Instructions

Installation

1. Ensure the input voltage range is compatible with the driver.
2. Connect the LED load to the output terminals of the driver.
3. Securely mount the driver in a well-ventilated area away from moisture.

Operation

To operate the LED driver:

1. Apply the appropriate input voltage within the specified range.
2. The driver will provide constant voltage or constant current output based on the connected load.
3. Monitor the driver for any abnormalities such as excessive heator and unusual noises.

Maintenance

To ensure longevity and safety:

1. Regularly check for dust accumulation and clean the driver if necessary.
2. Avoid overloading the driver beyond its rated power and current limits.
3. Replace the driver if any signs of damage or malfunction are observed.

Frequently Asked Questions

- **Q: Can I use the LPF-40 series driver with any LED load?**
  - A: The LPF-40 series driver is designed to work with specific voltage and current ranges as indicated in the specifications. Ensure your LED load falls within these ranges for optimal performance.
- **Q: What should I do if the driver overheats during operation?**
  - A: If the driver overheats, immediately disconnect the power\ supply and allow it to cool down before investigating the cause. Check for any obstructions to ventilation or signs of component failure.
- **Q: Is the LPF-40 series driver waterproof?**
  - A: The LPF-40 series driver is IP67-rated, indicating it is protected against dust ingress and immersion up to a certain depth. However, always follow proper installation guidelines to maintain the waterproof integrity of the driver.

Symbol

Features

- Constant Voltage + 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

Description

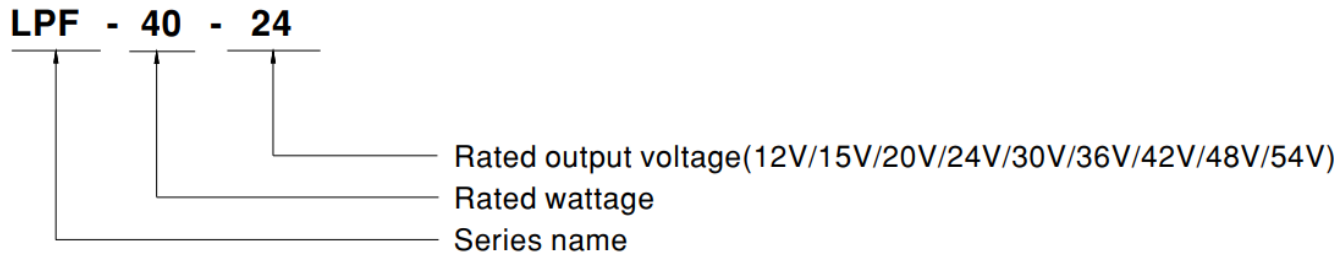
LPF-40 series is a 40W AC/DC LED driver featuring the dual modes of constant voltage and constant current output. LPF-40 operates from 90~305 VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the hign efficiency up to 90%, with the fanless design, the entire series is able to operate for -40°C ~ +80°C case temperature under free air convection. The entire series is rated with IP67 ingress protection level and is suitable to work for a variety of applications at dry, damp or wet locations.

Applications

- LED panel lighting
- LED downlight
- LED decorative lighting
- LED tunnel lighting
- Moving sign
- GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Model Encoding



SPECIFICATION

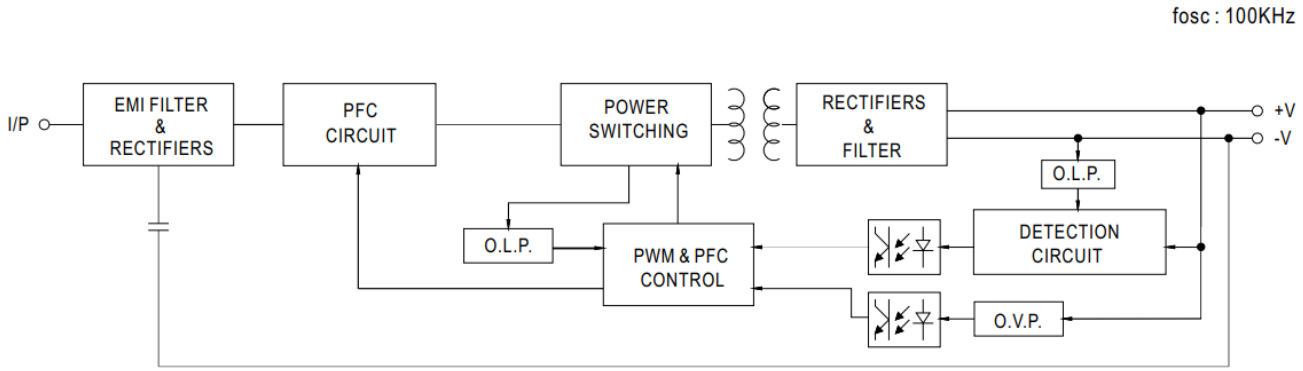
MODEL		LPF-40-12	LPF-40-15	LPF-40-20	LPF-40-24	LPF-40-30	LPF-40-36	LPF-40-42	LPF-40-48	LPF-40-54
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V
	CONSTANT CURRENT REGION Note.2	7.2 ~12V	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V
	RATED CURRENT	3.34A	2.67A	2A	1.67A	1.34A	1.12A	0.96A	0.84A	0.76A
	RATED POWER Note.5	40.08W	40.08W	40W	40.08W	40.2W	40.32W	40.32W	40.32W	41.04W
	RIPPLE & NOISE (max.) Note.3	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	250mVp-p	250mVp-p	250mVp-p	350mVp-p
	VOLTAGE TOLERANCE Note.4	±4.0%	±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%	±0.5%
	LOAD REGULATION	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME Note.6	1000ms, 80ms / 115VAC 500ms, 80ms / 230VAC								
	HOLD UP TIME (Typ.)	16ms/230VAC 16ms/115VAC								
	VOLTAGE RANGE Note.5	90 ~ 305VAC 127 ~ 431VDC (Please refer to “STATIC CHARACTERISTIC” section)								
	FREQUENCY RANGE	47 ~ 63Hz								

INPUT	**POWER FACTOR**	PF≧0.97/115VAC, PF≧0.95/230VAC, PF≧0.92/277VAC@full load (Please refer to “POWER FACTOR (PF) CHARACTERISTIC” section)								
	TOTAL HARMONIC DISTORTION	THD< 20%(@load≧60%/115VC,230VAC; @load≧75%/277VAC) (Please refer to “TOTAL HARMONIC DISTORTION(THD)” section)								
	EFFICIENCY (Typ.)	84%	85%	86%	87%	88%	88%	88.5%	90%	90%
	AC CURRENT	0.6A / 115VAC 0.3A / 230VAC 0.25A/277VAC								
	INRUSH CURRENT(Typ.)	COLD START 50A(twidth=210μs measured at 50% Ipeak) at 230VAC; Per NEMA 410								
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	12 units (circuit breaker of type B) / 20 units (circuit breaker of type C) at 230VAC								
	LEAKAGE CURRENT	<0.75mA / 240VAC								
PROTECTION	**OVER CURRENT**	95 ~ 108%								
		Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed								
	OVER VOLTAGE	15 ~ 17V	17.5 ~ 21V	23 ~ 27V	28 ~ 35V	34 ~ 40V	41 ~ 49V	46 ~ 54V	54 ~ 63V	59 ~ 66V
		Shut down and latch off o/p voltage, re-power on to recover								
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover								
ENVIRONMENT	**WORKING TEMP.**	Tcase=-40 ~ +80℃ (Please refer to “ OUTPUT LOAD vs TEMPERATURE” section)								
	MAX. CASE TEMP.	Tcase=+80℃								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH								
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)								
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								

SAFETY & EMC	**SAFETY STANDARDS Note.8**	UL8750, CSA C22.2 No. 250.0-08, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13 independent, BS EN/EN62384,EAC TP TC 004, IP67, J61347-1, J61347-2-13, GB19510.1,GB19510.14 approved ; design refer to UL60950-1
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH
	EMC EMISSION Note.8	Compliance to BS EN/EN55015,BS EN/EN61000-3-2 Class C (@load≧60%) ; BS EN/EN61000-3-3, GB/T 17743 , GB17625.1,EAC TP TC 020
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11; BS EN/EN61547, light industry level (surge immunity Line-Line 2KV), EAC TP TC 020
OTHERS	**MTBF**	3597.9K hrs min. Telcordia SR-332 (Bellcore) ; 438.9Khrs min. MIL-HDBK-217F (25℃)
	DIMENSION	162.5*43*32mm (L*W*H)
	PACKING	0.44Kg; 32pcs/15.08Kg/0.93CUFT

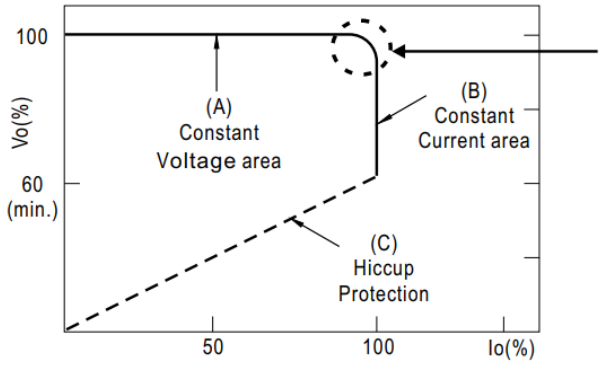
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature. 2. Please refer to “DRIVING METHODS OF LED MODULE”. 3. Ripple & noise are measured at 20MHz of bandwidth by using a 12″ twisted pair-wire terminated wit h a 0.1uf & 47uf parallel 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” se ctions for details. 6. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to an incre ase 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. (as available on https://**www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)** 8. To fulfill the requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without being permanently connected to the mains. 9. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly tc point (or TMP, per DLC), is about 75℃ or less. 10. Please refer to the warranty statement on MEAN WELL’s website at **http://www.meanwell.com** 11. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). 12. For any application note and IP water proof function installation caution, please refer our user man ual before using. https://**www.meanwell.com/Upload/PDF/LED_EN.pdf** ※ Product Liability Disclaimer For detailed information, please refer to https://**www.meanwell.com/ser viceDisclaimer.aspx**

BLOCK DIAGRAM



DRIVING METHODS OF LED MODULE

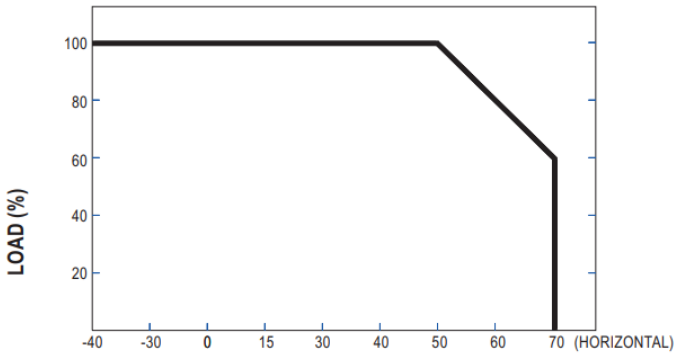
- This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.

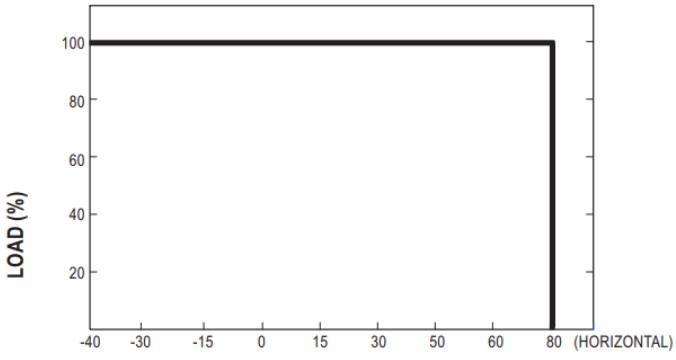


Typical output current normalized by rated current (%)

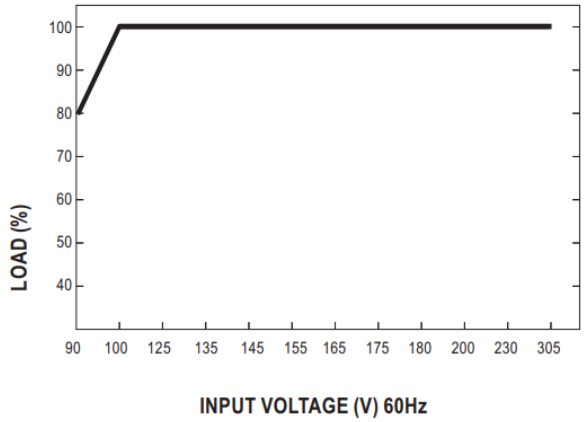
In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.
Should there be any compatibility issues, please contact MEAN WELL.

OUTPUT LOAD vs TEMPERATURE



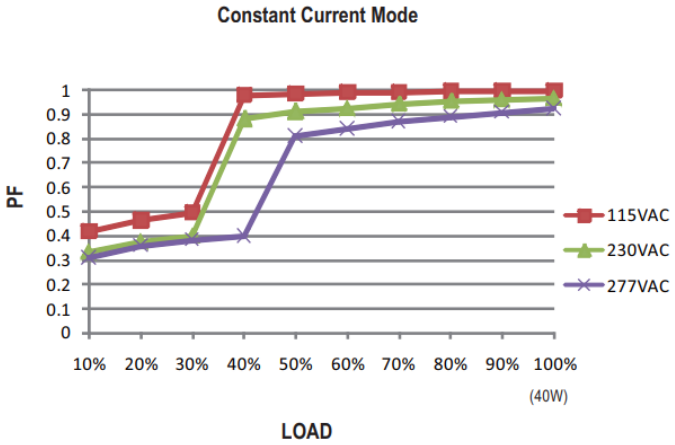


STATIC CHARACTERISTIC/ POWER FACTOR (PF) CHARACTERISTIC



※ De-rating is needed under low input voltage.

※ Tcase at 70℃



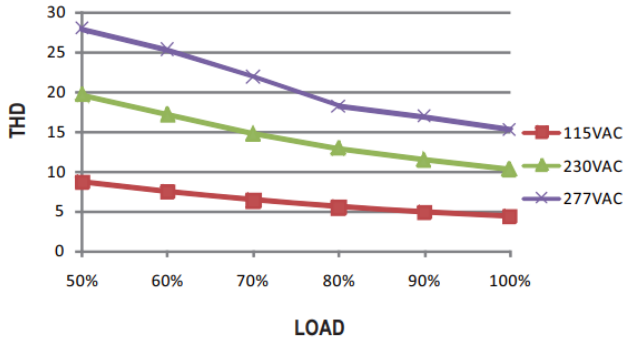
TOTAL HARMONIC DISTORTION (THD)

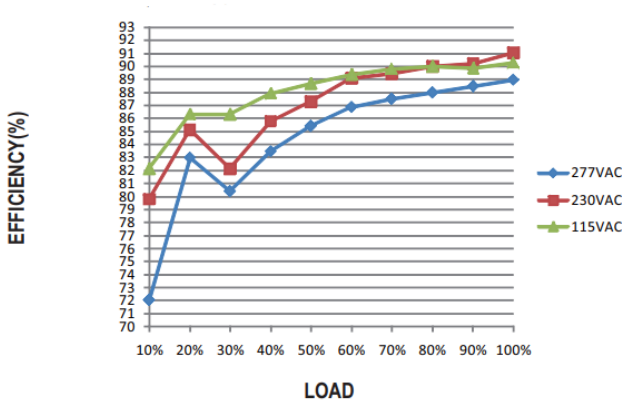
- ※ 48V Model, Tcase at 70°C

EFFICIENCY vs LOAD

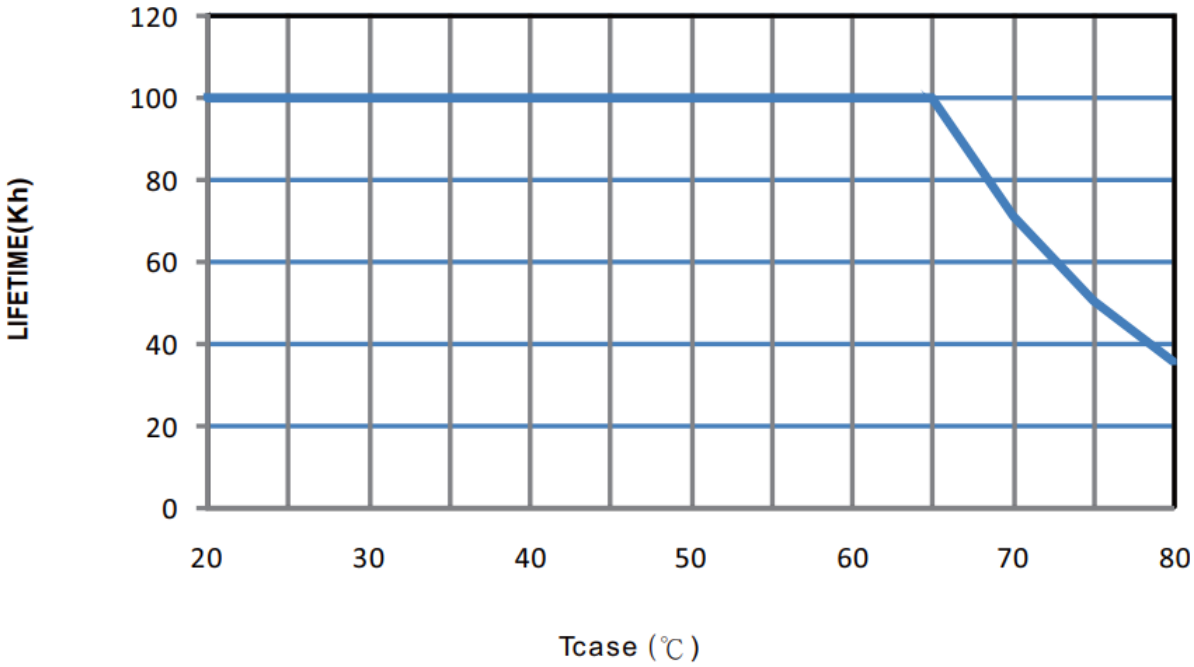
LPF-40 series possess superior working efficiency that up to 90% can be reached in field applications.

- 48V Model, Tcase at 70°C

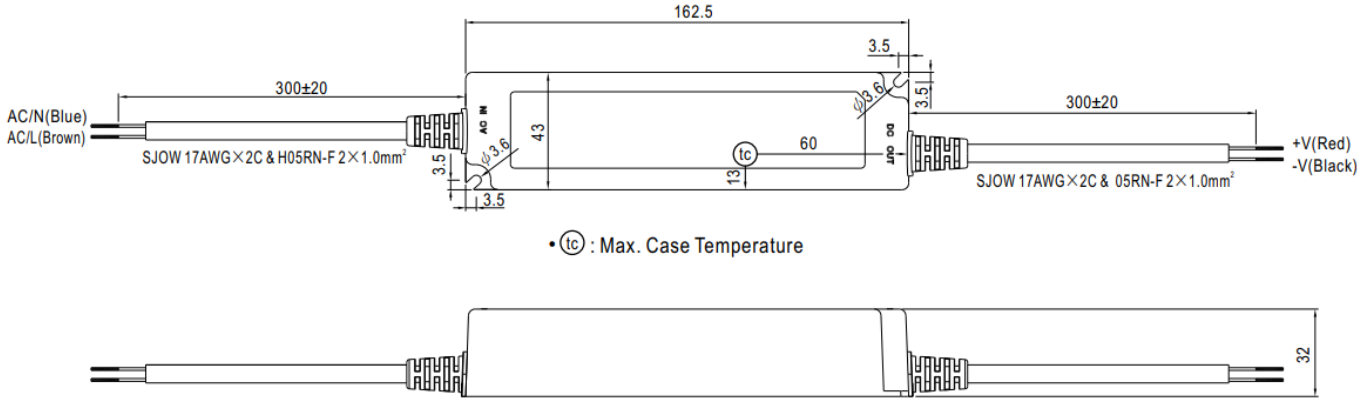




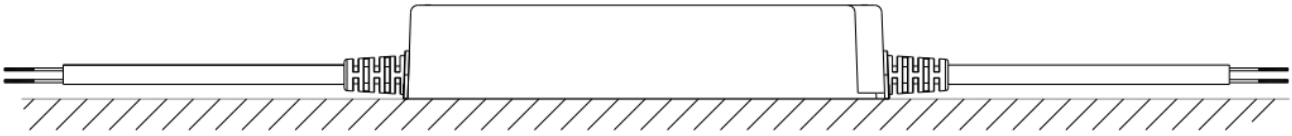
LIFE TIME



MECHANICAL SPECIFICATION



Recommend Mounting Direction



INSTALLATION MANUAL

Please refer to:**http://www.meanwell.com/manual.html**

Documents / Resources

	**MEAN WELL LPF-40 Series Constant Voltage Plus Constant Current LED Driver** [pdf] Owner's Manual LPF-40-12, LPF-40-15, LPF-40-20, LPF-40-24, LPF-40-30, LPF-40 Series Constant Voltage Plus Constant Current LED Driver, LPF-40 Series, Constant Voltage Plus Constant Current LED Driver, Constant Current LED Driver, Current LED Driver, LED Driver

References

- **User Manual**