

User's Manual



■ Features

- Constant Current mode output
- Plastic housing with Class II design
- Built-in active PFC function
- Class 2 power unit
- IP67 rating for indoor or outdoor installations
- Function: 3 in 1 dimming
- Typical lifetime > 50000 hours
- 5 years warranty

■ Applications

- LED panel lighting
- LED downlight
- LED decorative lighting
- LED tunnel lighting
- Moving sign
- Type "HL" for use in Class I, Division 2 hazardous (Classified) location.

■ GTIN CODE

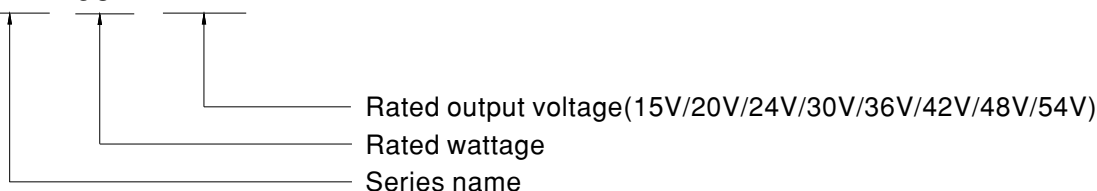
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

LPF-90D series is a 90W AC/DC LED driver featuring the constant current output. LPF-90D operates from 90~305VAC and offers models with different rated voltage ranging between 15V and 54V. Thanks to the high efficiency up to 90.5%, with the fanless design, the entire series is able to operate for -40°C ~ +70°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. LPF-90D is equipped with the 3 in 1 dimming function so as to provide the design flexibility for LED lighting system.

■ Model Encoding

LPF - 90D - 24



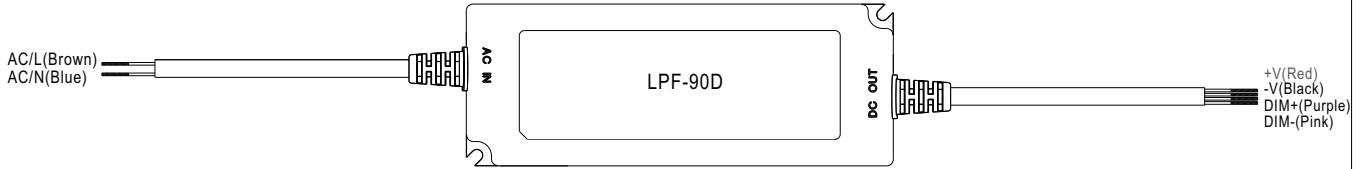


SPECIFICATION

MODEL	LPF-90D-15	LPF-90D-20	LPF-90D-24	LPF-90D-30	LPF-90D-36	LPF-90D-42	LPF-90D-48	LPF-90D-54	
OUTPUT	DC 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
	RATED POWER <small>Note.5</small>	75W	90W	90W	90W	90W	90.3W	90.24W	90.18W
	CONSTANT CURRENT REGION <small>Note.2</small>	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V
	CURRENT RIPPLE	5.0% max. @rated current							
	CURRENT TOLERANCE	±5.0%							
	SETUP, RISE TIME <small>Note.6</small>	1200ms, 200ms / 115VAC 500ms, 200ms / 230VAC							
	HOLD UP TIME (Typ.)	16ms/230VAC 16ms/115VAC							
INPUT	VOLTAGE RANGE <small>Note.5</small>	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)							
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR	PF ≥ 0.97/115VAC, PF ≥ 0.96/230VAC, PF ≥ 0.95/277VAC@full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)							
	TOTAL HARMONIC DISTORTION	THD < 20% (@load ≥ 60%/115VAC, 230VAC; @load ≥ 75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)							
	EFFICIENCY (Typ.)	89%	89.5%	90%	90.5%	90.5%	90.5%	90.5%	90.5%
	AC CURRENT	0.95A / 115VAC 0.5A / 230VAC 0.4A / 277VAC							
	INRUSH CURRENT(Typ.)	COLD START 70A(twidth=435µs measured at 50% Ipeak) at 230VAC; Per NEMA 410							
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	4 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC							
PROTECTION	LEAKAGE CURRENT	<0.75mA / 240VAC							
	OVER CURRENT	95 ~ 108% 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	Shut down o/p voltage, re-power on to recover							
ENVIRONMENT	WORKING TEMP.	Tcase=-40 ~ +70°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)							
	MAX. CASE TEMP.	Tcase=+70°C							
	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, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS <small>Note.8</small>	UL8750(type"HL"), CSA C22.2 No.250.13-12, TUV BS EN/EN61347-1, BS EN/EN61347-2-13, EAC TP TC 004, GB/T 19510.1, GB/T 19510.213, IP67 approved ; Design refer to UL60950-1							
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC							
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH							
	EMC EMISSION <small>Note.8</small>	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	3110.7K hrs min. Telcordia SR-332 (Bellcore); 267.3Khrs min. MIL-HDBK-217F (25°C)							
	DIMENSION	161*61*36mm (L*W*H)							
	PACKING	0.7Kg;20pcs/15Kg/0.73CUFT							
NOTE	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.</p> <p>2. Please refer to "DRIVING METHODS OF LED MODULE".</p> <p>3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>4. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</p> <p>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.</p> <p>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)</p> <p>8. 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.</p> <p>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 70°C or less.</p> <p>10. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com</p> <p>11. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>12. For any application note and IP water proof function installation caution, please refer our user manual before using. https://www.meanwell.com/Upload/PDF/LED_EN.pdf</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p>								

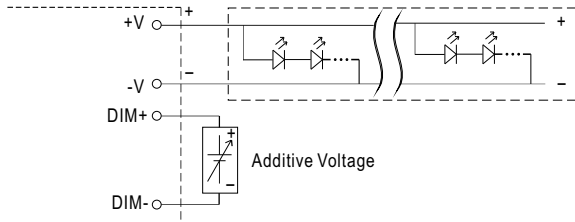
■ DIMMING OPERATION

※ 3 in 1 dimming function

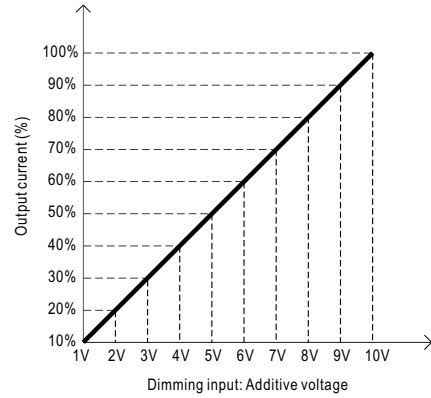


- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 1 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100 μ A (typ.)

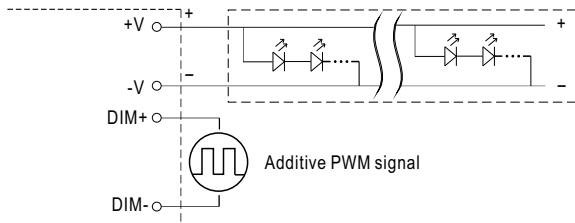
◎ Applying additive 1 ~ 10VDC



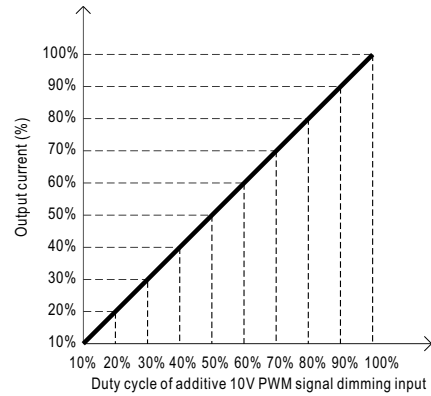
"DO NOT connect "DIM- to -V"



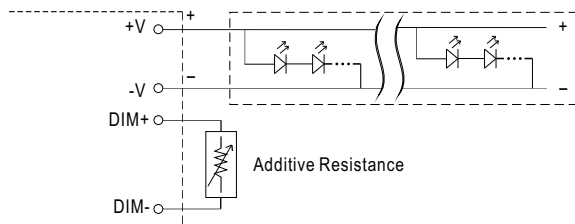
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



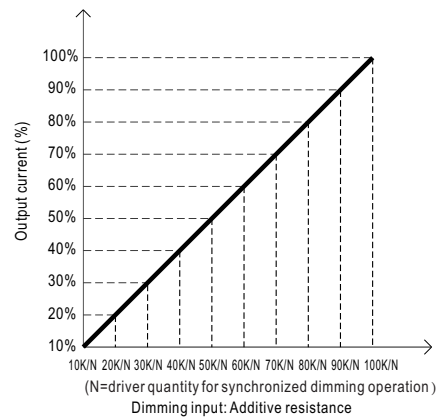
"DO NOT connect "DIM- to -V"



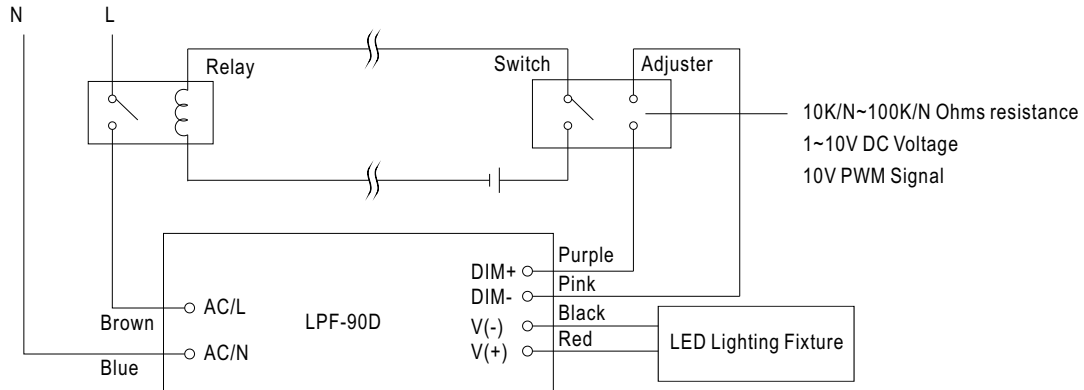
◎ Applying additive resistance:



"DO NOT connect "DIM- to -V"

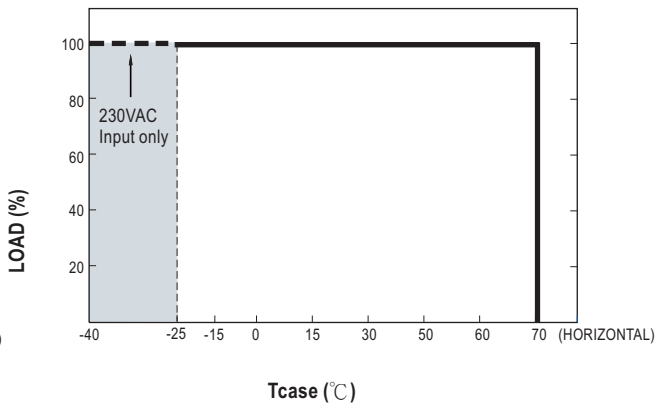
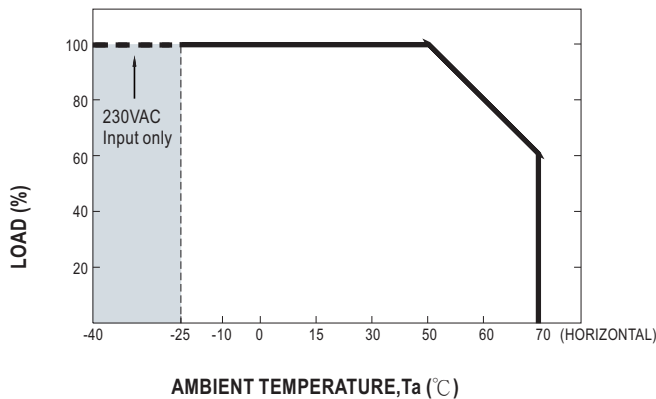


Note: In the case of turning the lighting fixture down to 0% brightness, please refer to the configuration as follow, or please contact MEAN WELL for other options.

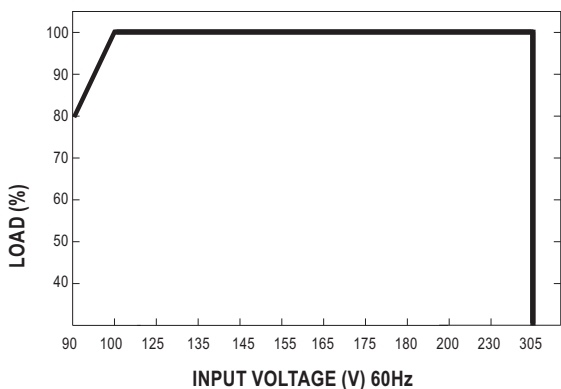


Using a switch and relay can turn ON/OFF the lighting fixture.

OUTPUT LOAD vs TEMPERATURE



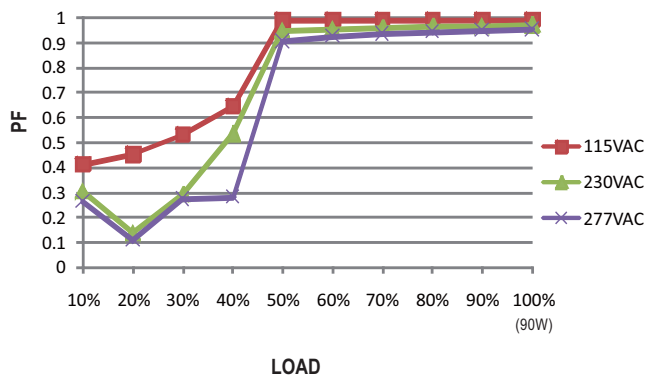
STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

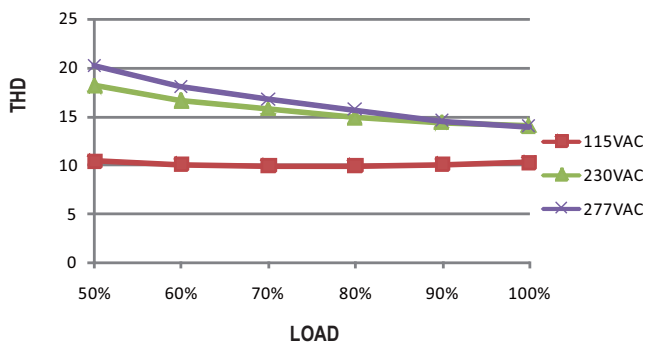
POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 60°C



TOTAL HARMONIC DISTORTION (THD)

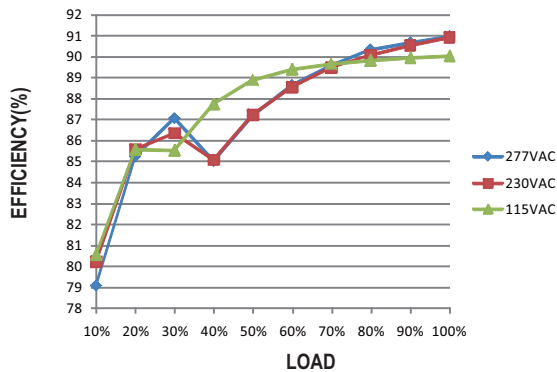
※ 48V Model, Tcase at 60°C



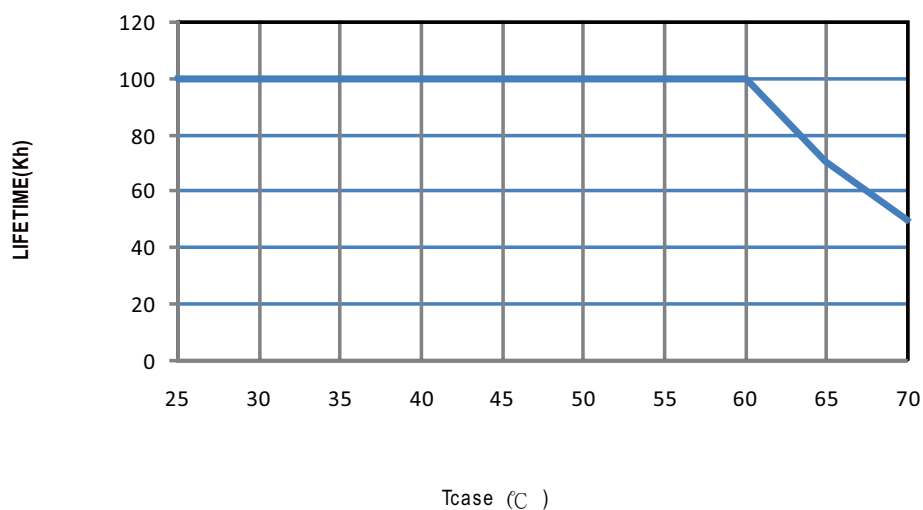
EFFICIENCY vs LOAD

LPF-90D series possess superior working efficiency that up to 90.5% can be reached in field applications.

※ 48V Model, Tcase at 60°C

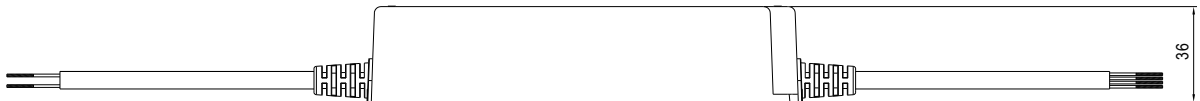
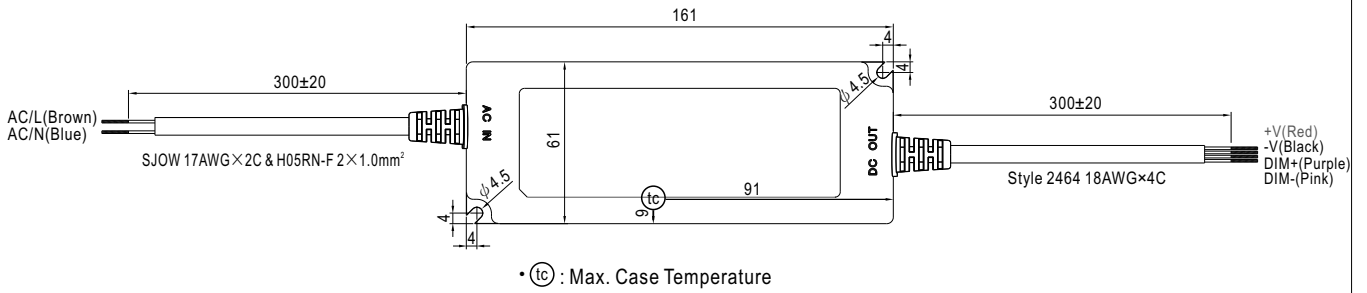


■ LIFE TIME

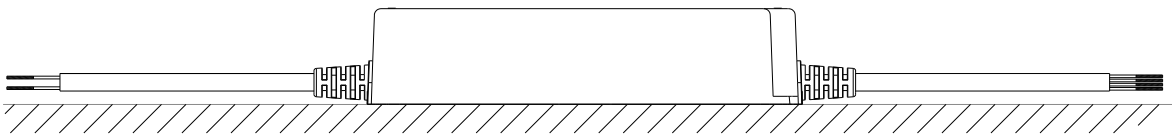


■ MECHANICAL SPECIFICATION

CASE NO.: LPF-90A Unit:mm Tolerance:±1



■ Recommend Mounting Direction



■ INSTALLATION MANUAL

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