



■ Features

- Plastic housing with class II design
- Built-in active PFC function
- Class 2 power unit (except NPF-90D-12/15)
- Standby power consumption <0.5W
- IP67 rating for indoor or outdoor installations
- Function: 3 in 1 dimming (dim-to-off)
- Typical lifetime >50000hours
- 5 years warranty

■ Applications

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

■ GTIN CODE

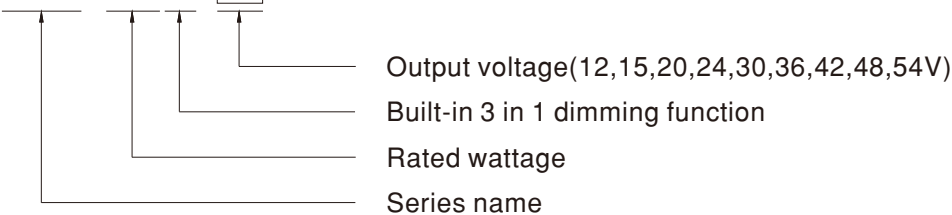
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

■ Description

NPF-90D series is a 90W AC/DC LED driver featuring the constant current mode output. NPF-90D operates from 90~305VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the high efficiency up to 90%, with the fanless design, the entire series is able to operate for -40~+85°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. NPF-90D is equipped with the 3 in 1 dimming function so as to provide the design flexibility for LED lighting system.

■ Model Encoding

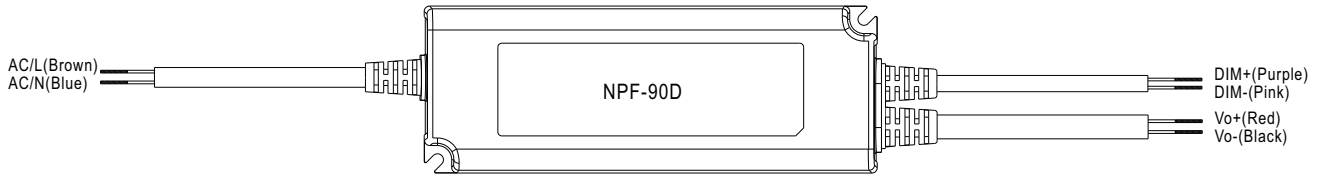
NPF - 90 D - 20



SPECIFICATION

MODEL		NPF-90D-12 □	NPF-90D-15 □	NPF-90D-20 □	NPF-90D-24 □	NPF-90D-30 □	NPF-90D-36 □	NPF-90D-42 □	NPF-90D-48 □	NPF-90D-54 □	
OUTPUT	RATED CURRENT	7.5A	6A	4.5A	3.75A	3A	2.5A	2.15A	1.88A	1.67A	
	RATED POWER	90W	90W	90W	90W	90W	90W	90.3W	90.24W	90.18W	
	CONSTANT CURRENT REGION	7.2 ~ 12V	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%									
	SET UP TIME <small>Note.3</small>	500ms/115VAC, 230VAC									
INPUT	VOLTAGE RANGE <small>Note.2</small>	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)									
	FREQUENCY RANGE	47 ~ 63Hz									
	POWER FACTOR (Typ.)	PF ≥ 0.98/115VAC, PF ≥ 0.96/230VAC, PF ≥ 0.94/277VAC@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.)	88%	89%	90%	90%	89%	90%	90%	90%	90%	
	AC CURRENT (Typ.)	0.95A / 115VAC			0.5A / 230VAC			0.4A / 277VAC			
	INRUSH CURRENT(Typ.)	COLD START 60A(twidth=550μs measured at 50% Ipeak) at 230VAC; Per NEMA 410									
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	3 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC									
	LEAKAGE CURRENT	<0.25mA / 277VAC									
	STANDBY POWER CONSUMPTION	<0.5W									
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 ~ 34V	34 ~ 40V	41 ~ 46V	46 ~ 54V	54 ~ 60V	59 ~ 66V	
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	Tcase=-40 ~ +85°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)									
	MAX. CASE TEMP.	Tcase=+85°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)									
SAFETY & EMC	SAFETY STANDARDS	UI8750, CSA C22.2 No. 250.13-12, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13, BS EN/EN62384 independent,EAC TP TC 004, GB/T19510.1,GB/T19510.213, IP67 approved ;Design refer to BS EN/EN60335-1									
	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 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									
OTHERS	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									
	MTBF	2749.1K hrs min. Telcordia SR-332 (Bellcore) ; 231.2K hrs min. MIL-HDBK-217F (25°C)									
	DIMENSION	171*63*37.5mm (L*W*H)									
NOTE	PACKING	0.77Kg; 18pcs/14.9Kg/0.82CUFT									
	<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.</p> <p>2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</p> <p>3. 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>4. The standby power consumption is specified for 230VAC.</p> <p>5. 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>6. 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°C or less.</p> <p>7. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com</p> <p>8. 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>9. 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>10. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p>										

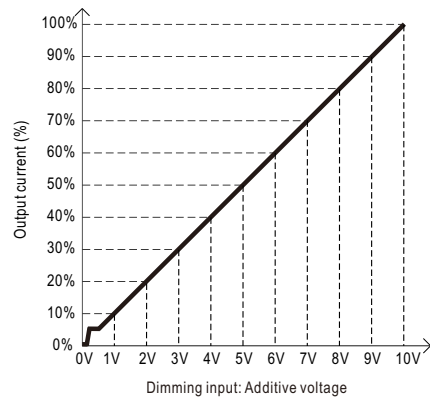
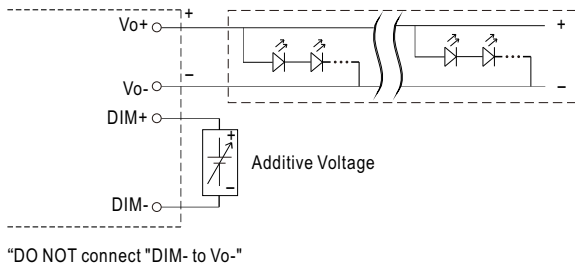
■ DIMMING OPERATION



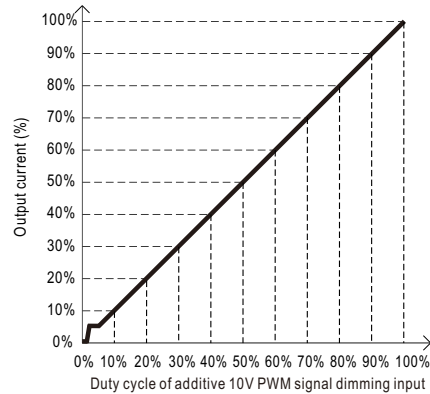
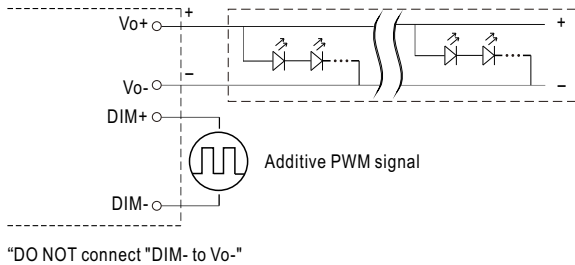
※ **3 in 1 dimming function**

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 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.)

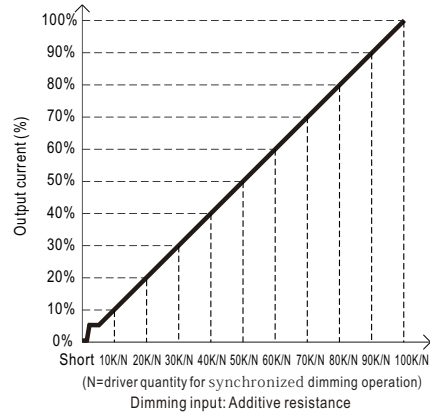
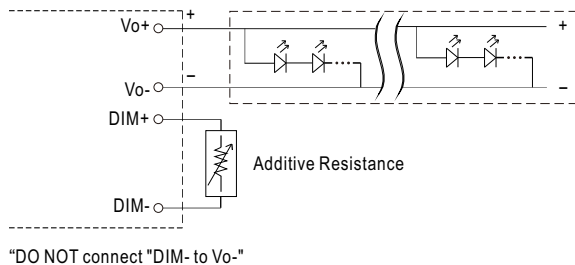
◎ Applying additive 0 ~ 10VDC



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

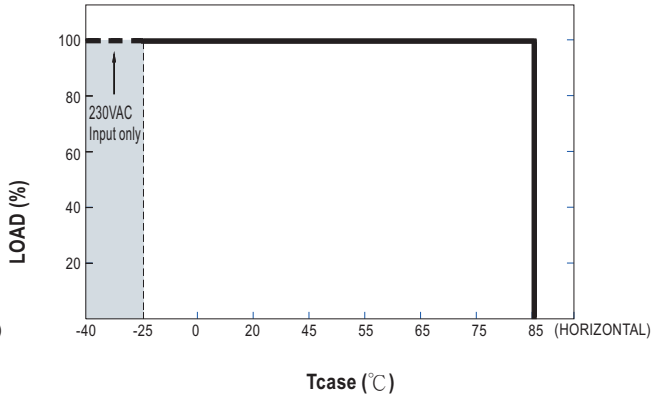
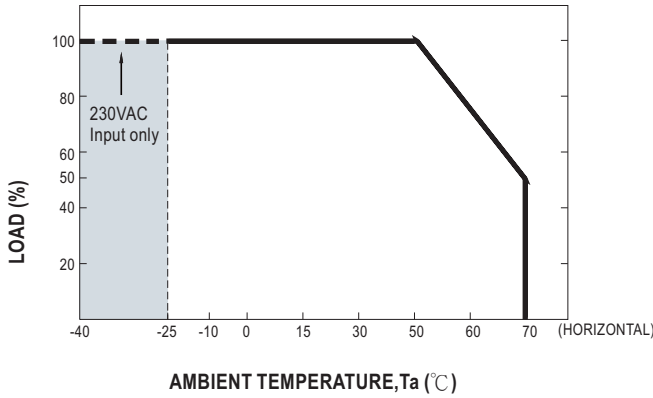


◎ Applying additive resistance:

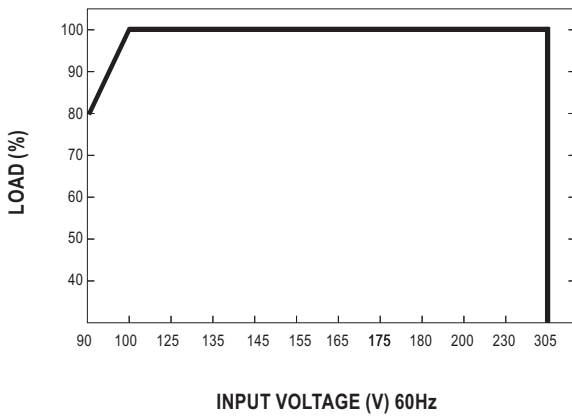


Note : 1. Min. dimming level is about 6% and the output current is not defined when 0% < I_{out} < 6%.
 2. The output current could drop down to 0% when dimming input is about 0k Ω or 0Vdc, or 10V PWM signal with 0% duty cycle.

OUTPUT LOAD vs TEMPERATURE



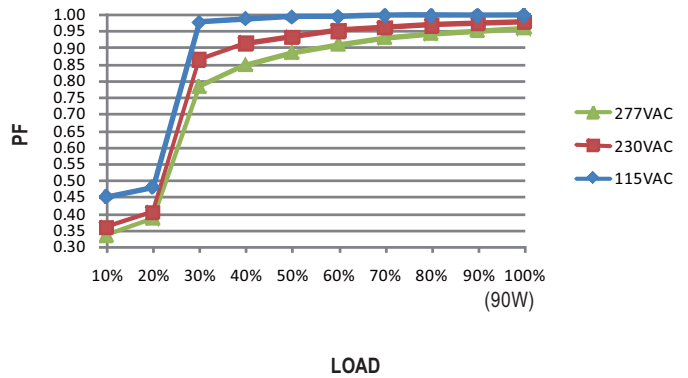
STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

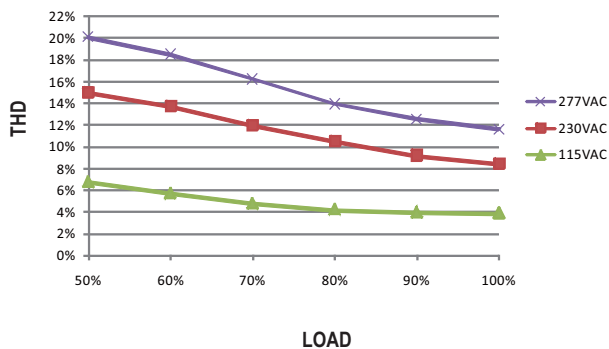
POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 75°C



TOTAL HARMONIC DISTORTION (THD)

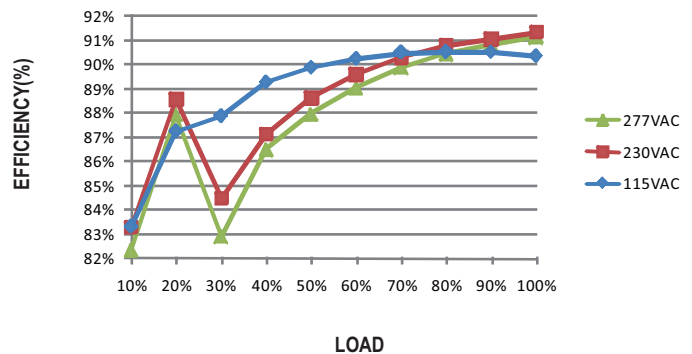
※ 48V Model, Tcase at 75°C



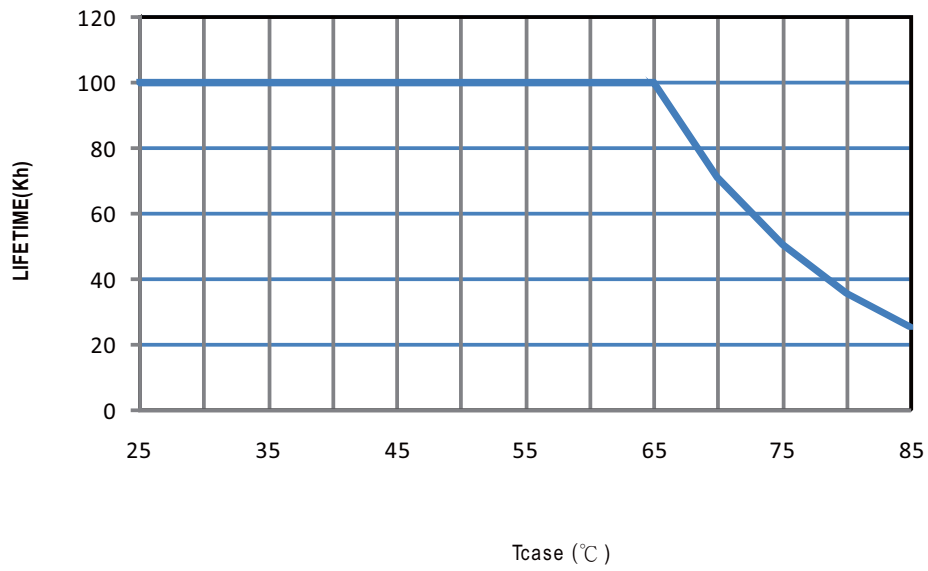
EFFICIENCY vs LOAD

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

※ 48V Model, Tcase at 75°C

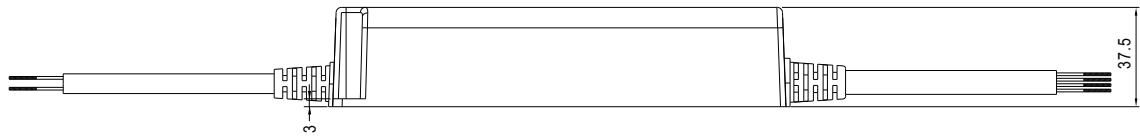
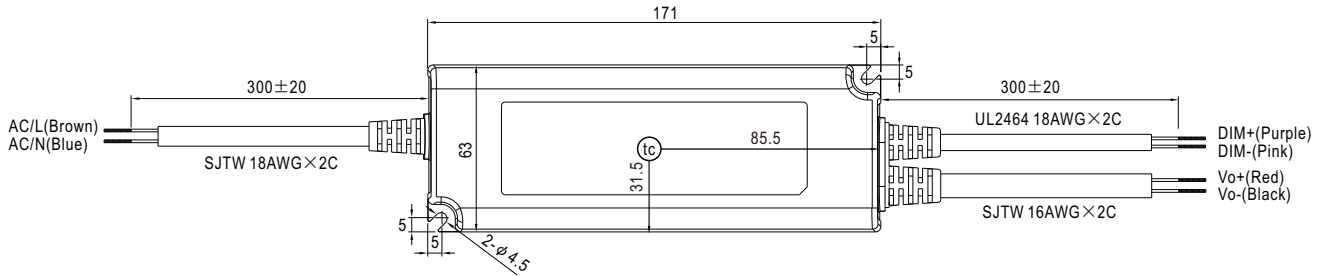


■ LIFE TIME



MECHANICAL SPECIFICATION

Case No. PWM-90P Unit:mm Tolerance:±1



Recommend Mounting Direction



INSTALLATION MANUAL

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

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