



### ■ Features

- Constant Voltage + Constant Current mode output
- Plastic housing with Class II design
- Built-in active PFC function
- Class 2 power unit(except NPF-90-12/15)
- No load power consumption <0.15W
- IP67 rating for indoor or outdoor installations
- Typical lifetime>50000 hours
- 5 years warranty

### ■ Applications

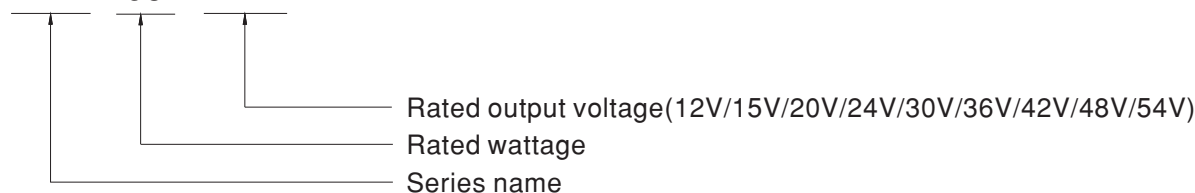
- LED panel lighting
- LED downlight
- LED decorative lighting
- LED tunnel lighting
- Moving sign

### ■ Description

NPF-90 series is a 90W AC/DC LED driver featuring the dual modes constant voltage and constant current output. NPF-90 operates from 90~305VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the high efficiency up to 91%, with the fanless design, the entire series is able to operate for -40°C ~ +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.

### ■ Model Encoding

**NPF - 90 - 24**

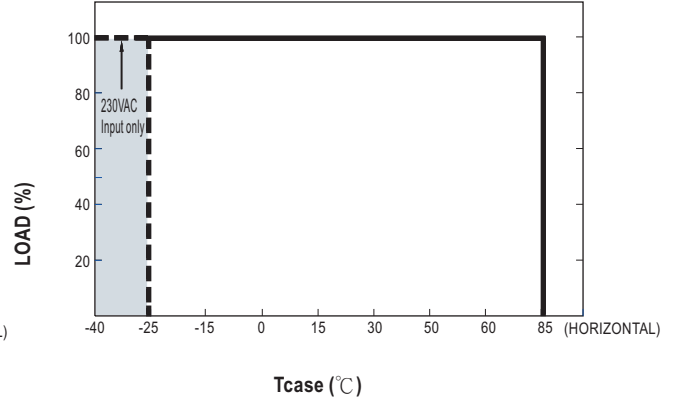
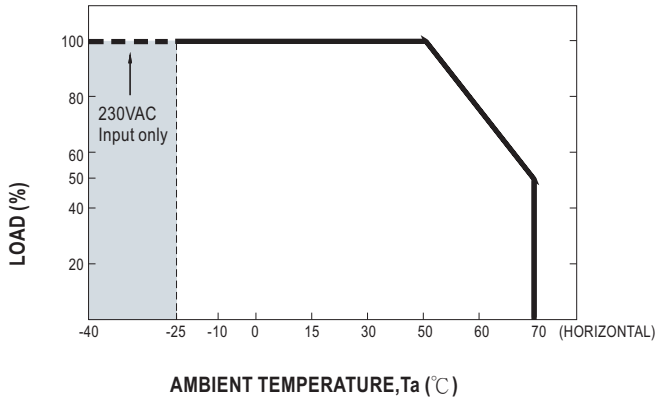


**SPECIFICATION**

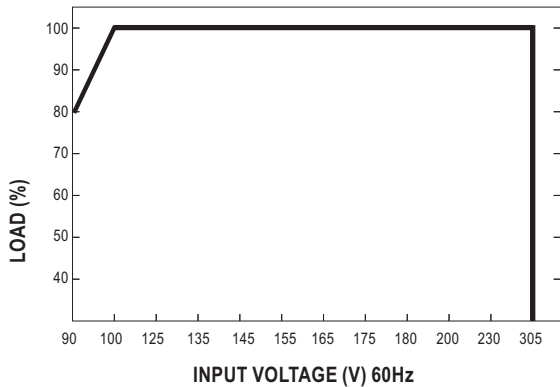
MODEL		NPF-90-12	NPF-90-15	NPF-90-20	NPF-90-24	NPF-90-30	NPF-90-36	NPF-90-42	NPF-90-48	NPF-90-54	
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V	
	CONSTANT CURRENT REGION <small>Note.2</small>	7.2 ~ 12V	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V	
	RATED CURRENT	7.5A	6A	4.5A	3.75A	3A	2.5A	2.15A	1.88A	1.67A	
	RATED POWER <small>Note.5</small>	90W	90W	90W	90W	90W	90W	90.3W	90.24W	90.18W	
	RIPPLE & NOISE (max.) <small>Note.3</small>	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	250mVp-p	250mVp-p	350mVp-p	
	VOLTAGE TOLERANCE <small>Note.4</small>	±4.0%	±4.0%	±4.0%	±3.0%	±3.0%	±2.0%	±1.0%	±1.0%	±1.0%	
	LINE REGULATION	±0.5%	±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%	±0.5%	
	SETUP, RISE TIME <small>Note.6</small>	500ms, 80ms 115VAC / 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 ≥ 0.98/115VAC, 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.)	89%	89.5%	90.5%	91%	89.5%	90.5%	90.5%	90.5%	90.5%	
	AC CURRENT	0.95A / 115VAC 0.5A / 230VAC 0.4A / 277VAC									
	INRUSH CURRENT(Typ.)	COLD START 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									
NO LOAD POWER CONSUMPTION	<0.15W										
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	
		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 ~ +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)									
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes									
SAFETY & EMC	SAFETY STANDARDS <small>Note.8</small>	UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13 independent, EN62384, EAC TP TC 004, IP67 approved; Design refer to 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 <small>Note.8</small>	Compliance to EN55015, EN61000-3-2 Class C (@load ≥ 60%); EN61000-3-3; 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	MTBF	1011.4K hrs min. Telcordia SR-332 (Bellcore); 292.8Khrs min. MIL-HDBK-217F (25°C)									
	DIMENSION	171*63*37.5mm (L*W*H)									
	PACKING	0.77Kg; 18pcs/14.9Kg/0.82CUFT									
NOTE	<ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.</li> <li>Please refer to "DRIVING METHODS OF LED MODULE".</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</li> <li>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.</li> <li>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.</li> <li>The model certified for CCC(GB19510.14, GB19510.1, GB17743 and GB17625.1) is an optional model . Please contact MEAN WELL for details.</li> <li>This series meets the typical life expectancy of &gt;50,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 75°C or less.</li> <li>Please refer to the warranty statement on MEAN WELL's website at <a href="http://www.meanwell.com">http://www.meanwell.com</a></li> </ol>										



**OUTPUT LOAD vs TEMPERATURE**



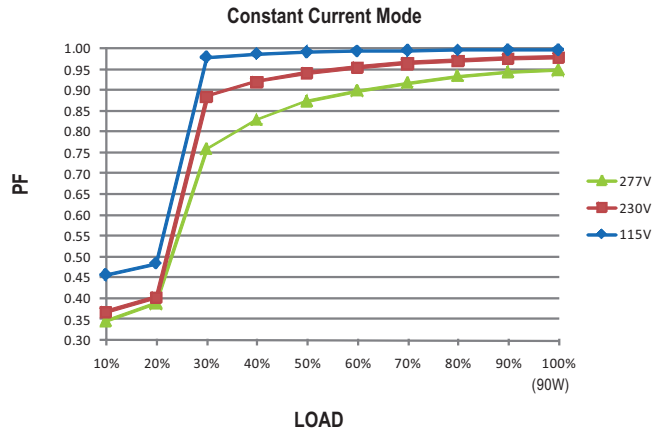
**STATIC CHARACTERISTIC**



※ De-rating is needed under low input voltage.

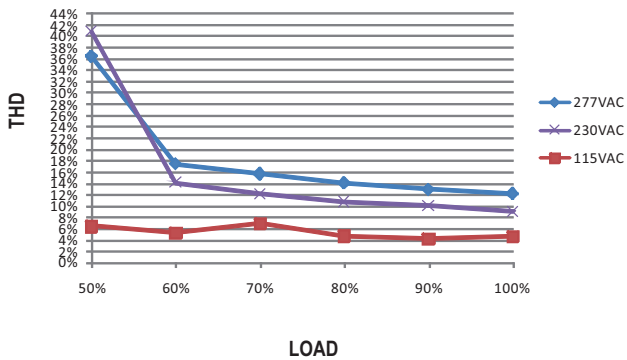
**POWER FACTOR (PF) CHARACTERISTIC**

※ Tcase at 75°C



**TOTAL HARMONIC DISTORTION (THD)**

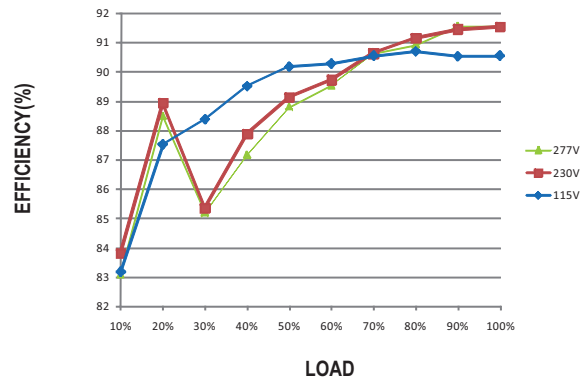
※ 48V Model, Tcase at 75°C



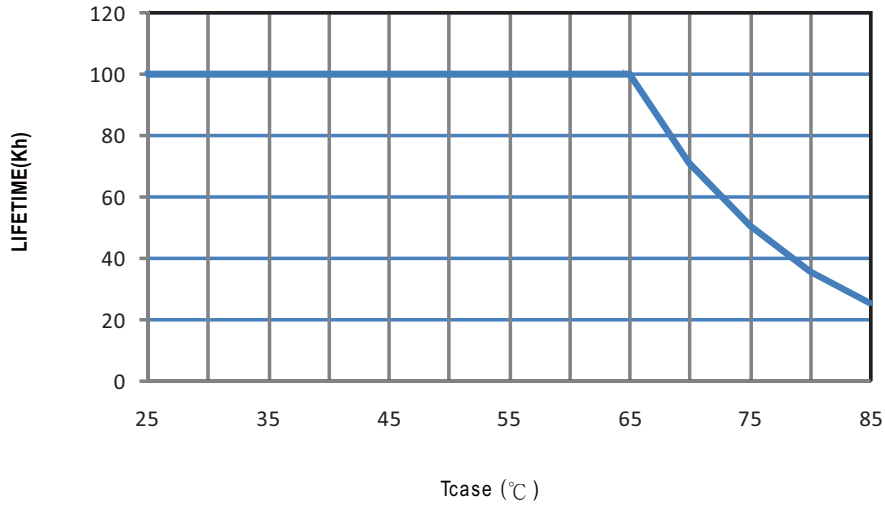
**EFFICIENCY vs LOAD**

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

※ 48V Model, Tcase at 75°C

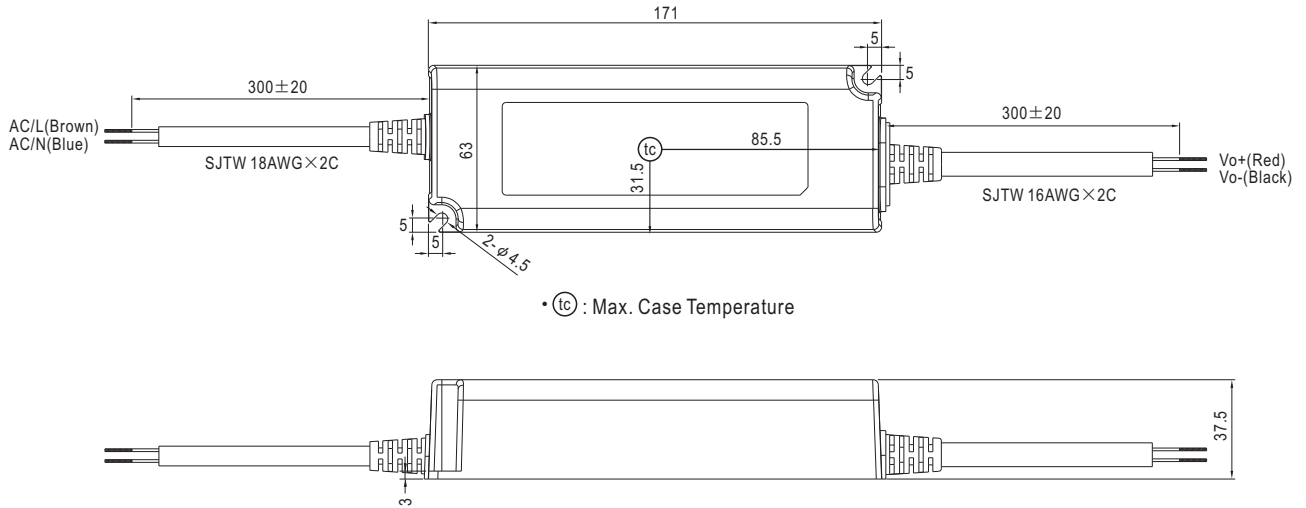


■ LIFE TIME



MECHANICAL SPECIFICATION

CASE NO.: PWM-90P Unit:mm



INSTALLATION MANUAL

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