



120W Single Output LED Driver

NPF-120D series



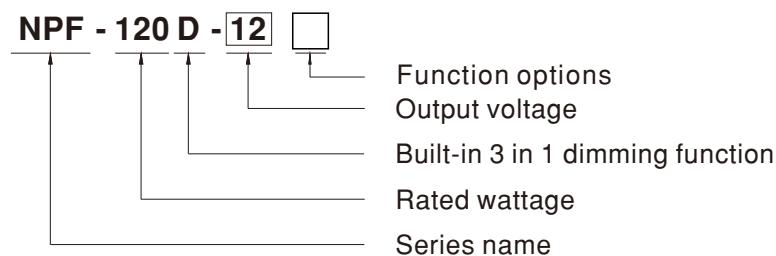
## ■ Features

- Plastic housing with class II design
- Built-in active PFC function
- Standby power consumption <0.5W
- IP67 rating for indoor or outdoor installations
- Function options: 3 in 1 dimming (dim-to-off); Auxiliary DC output
- Typical lifetime >50000hours
- 5 years warranty

## ■ Description

NPF-120D series is a 120W AC/DC LED driver featuring the constant current mode output. NPF-120D 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°C~+90°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-120D is equipped with the 3 in 1 dimming function so as to provide the design flexibility for LED lighting system.

## ■ Model Encoding



Type	IP Level	Function	Note
Blank	IP67	3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock
BE	IP67	3 in 1 dimming function and Auxiliary DC output	By request

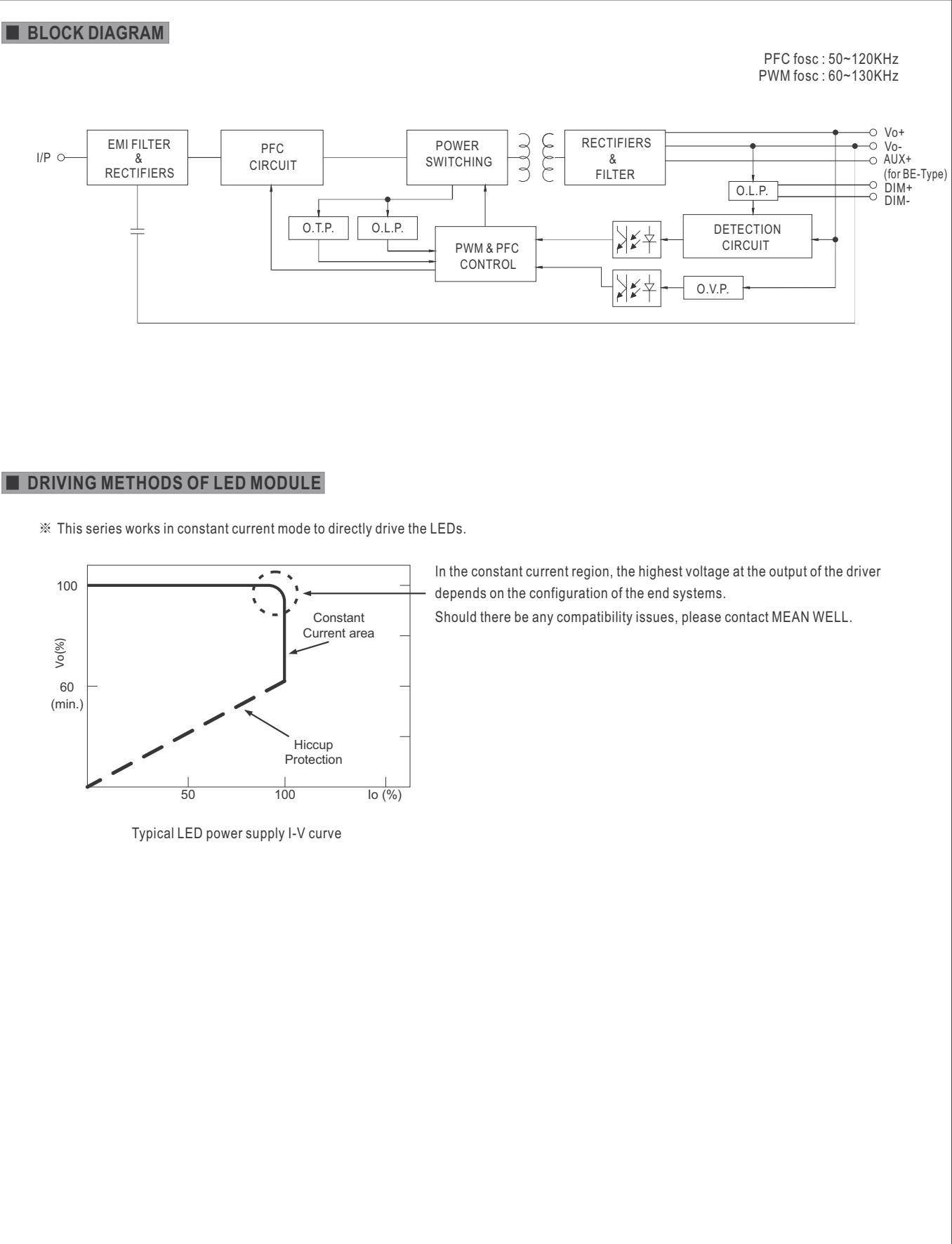
## SPECIFICATION

MODEL		NPF-120D-12	NPF-120D-15	NPF-120D-20	NPF-120D-24	NPF-120D-30	NPF-120D-36	NPF-120D-42	NPF-120D-48	NPF-120D-54
OUTPUT	RATED CURRENT	10A	8A	6A	5A	4A	3.4A	2.9A	2.5A	2.3A
	RATED POWER	120W	120W	120W	120W	120W	122.4W	121.8W	120W	124.2W
	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%								
	AUXILIARY DC OUTPUT Note.4	Nominal 12V(deviation 11.4~12.6V)@0.2A for BE-Type only								
INPUT	SET UP TIME Note.3	500ms/115VAC, 230VAC								
	VOLTAGE RANGE Note.2	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)								
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF $\geq$ 0.97/115VAC, PF $\geq$ 0.96/230VAC, PF $\geq$ 0.94/277VAC@full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)								
	TOTAL HARMONIC DISTORTION	THD < 20%(@load $\geq$ 60%/115V, 230VAC; @load $\geq$ 75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)								
	EFFICIENCY (Typ.)	88.5%	88.5%	89%	89.5%	89%	89.5%	89.5%	90%	90%
	BLANK-TYPE	87.5%	87.5%	88.5%	89%	88.5%	89%	89%	89%	89%
	BE-TYPE Note.5	87.5%	87.5%	88.5%	89%	88.5%	89%	89%	89%	89%
	AC CURRENT (Typ.)	1.3A / 115VAC 0.65A / 230VAC 0.55A / 277VAC								
	INRUSH CURRENT(Typ.)	COLD START 60A(twidth=520 $\mu$ s measured at 50% Ipeak) at 230VAC; Per NEMA 410								
PROTECTION	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	4 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								
	OVER CURRENT	95 ~ 108%								
		Constant current limiting, recovers automatically after fault condition is removed								
ENVIRONMENT	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 o/p voltage, re-power on to recover								
SAFETY & EMC	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover								
	WORKING TEMP.	Tcase=-40 ~ +90°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)								
	MAX. CASE TEMP.	Tcase=+90°C								
	WORKING HUMIDITY	20 ~ 95% RH non-condensing								
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH								
	TEMP. COEFFICIENT	$\pm 0.03\text{ }^\circ\text{C}$ (0 ~ 40°C)								
OTHERS	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
	SAFETY STANDARDS	UL8750(type"HL"), CSA C22. No. 250.13-12, ENEC BS EN/EN61347-1, BS EN/EN61347-2-13, BS EN/EN62384 independent,EAC TP TC 004, GB19510.1,GB19510.14,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 $\geq$ 60%) ; BS EN/EN61000-3-3;GB17743 and GB17625.1, EAC TP TC 020								
NOTE	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	877.8K hrs min. Telcordia SR-332 (Bellcore) ; 233.9K hrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	191*63*37.5mm (L*W*H)								
NOTE	PACKING	0.97Kg; 15pcs/15.6Kg/0.87CUFT								
	1.	All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.								
	2.	De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.								
	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.								
	4.	The Auxiliary DC output is defined between AUX+ and DIM-.								
	5.	The efficiency for BE-Type is measured when the Auxiliary DC output is 100% loaded at 12V, 0.2A.								
	6.	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.								
	7.	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.								
	8.	Please refer to the warranty statement on MEAN WELL's website at <a href="http://www.meanwell.com">http://www.meanwell.com</a>								
	9.	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).								
	10.	For any application note and IP water proof function installation caution, please refer our user manual before using. <a href="https://www.meanwell.com/Upload/PDF/LED_EN.pdf">https://www.meanwell.com/Upload/PDF/LED_EN.pdf</a>								
	11.	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.								
	12.	BE-type is used for any light source that exempt from the ErP-Directive (EU) 2019/2020 requirement, for example this model could be use for signalling products(including, but not limited to road-, railway-, marine/air traffic-signalling , traffic control or airfield lamps) .								
	※ Product Liability Disclaimer : For detailed information, please refer to <a href="https://www.meanwell.com/serviceDisclaimer.aspx">https://www.meanwell.com/serviceDisclaimer.aspx</a>									

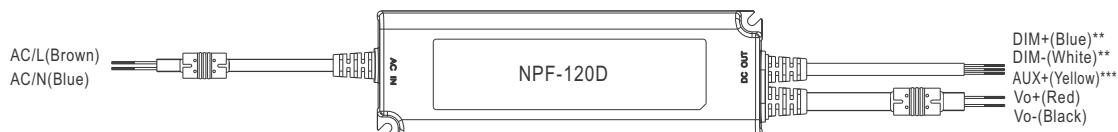


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## ■ DIMMING OPERATION

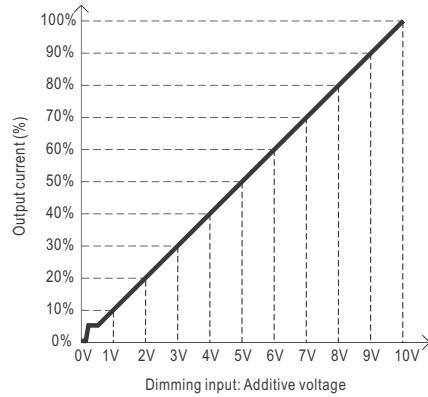
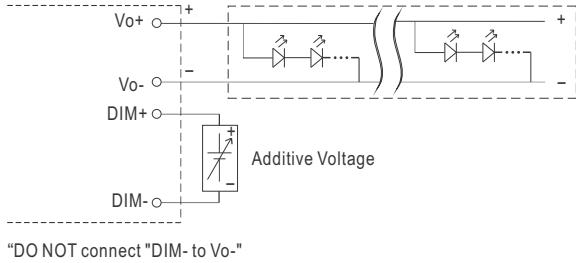


\*\* For wire diameters,  
please refer to  
Mechanical Specification

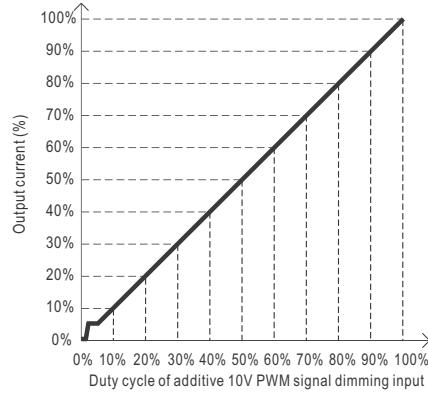
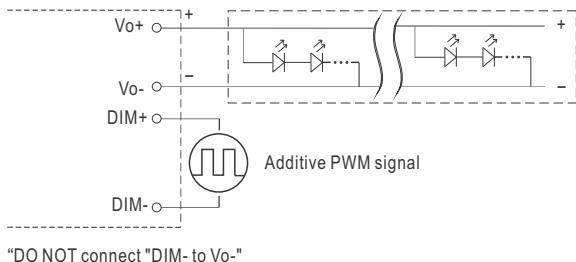
## ※ 3 in 1 dimming function

- 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: 100µA (typ.)

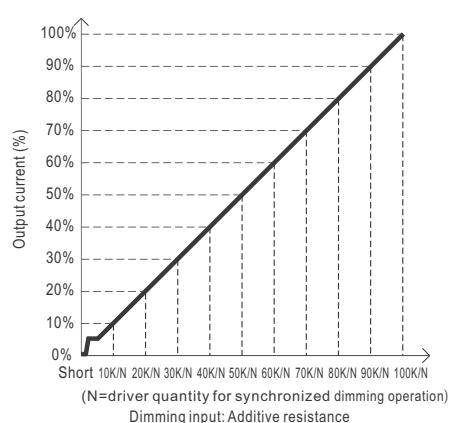
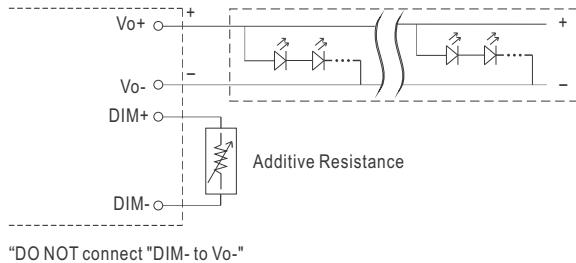
◎ Applying additive 0 ~ 10VDC



◎ 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% < Iout < 6%.

2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

※ Auxiliary DC operation (for BE-type)

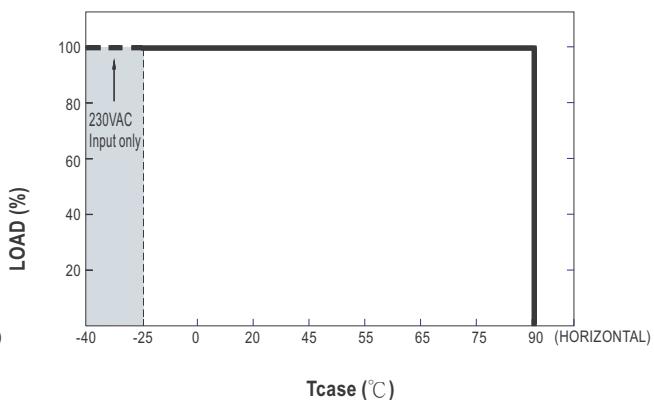
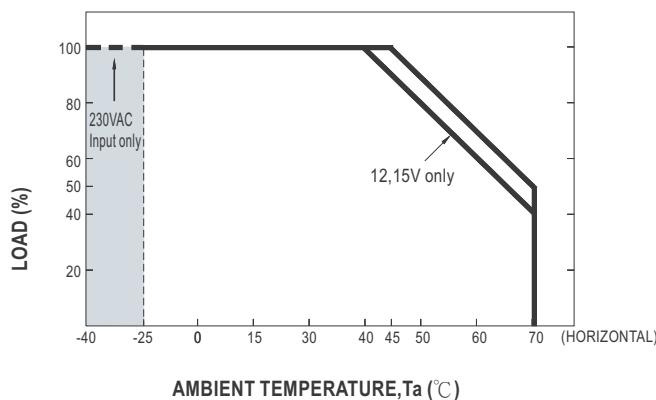
- AUX+, with mark \*\*\*, is added for BE-Type, used as the Auxiliary DC output with respect to DIM-.



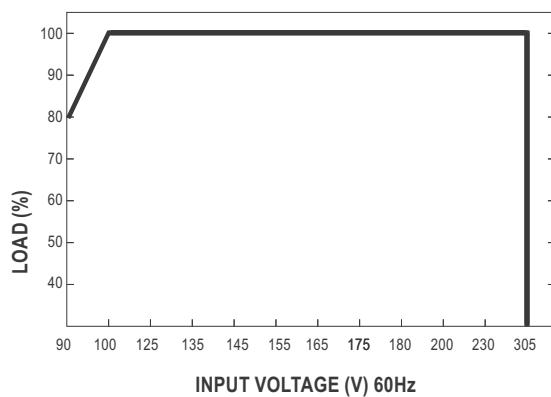
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### ■ OUTPUT LOAD vs TEMPERATURE

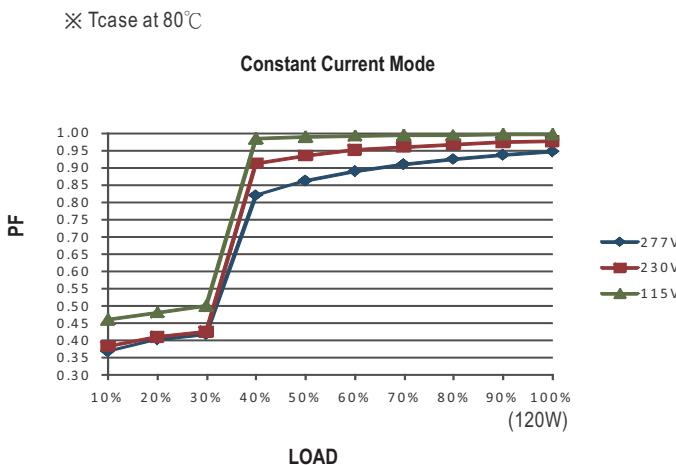


### ■ STATIC CHARACTERISTIC



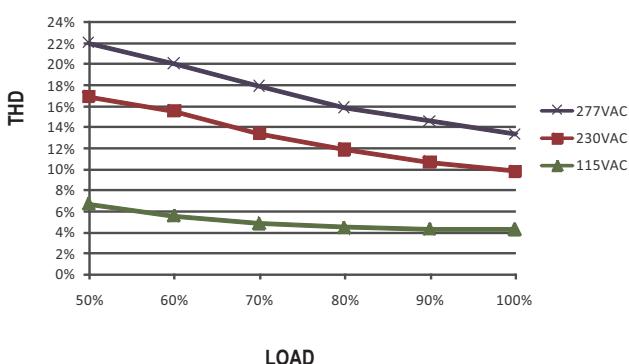
※ De-rating is needed under low input voltage.

### ■ POWER FACTOR (PF) CHARACTERISTIC



### ■ TOTAL HARMONIC DISTORTION (THD)

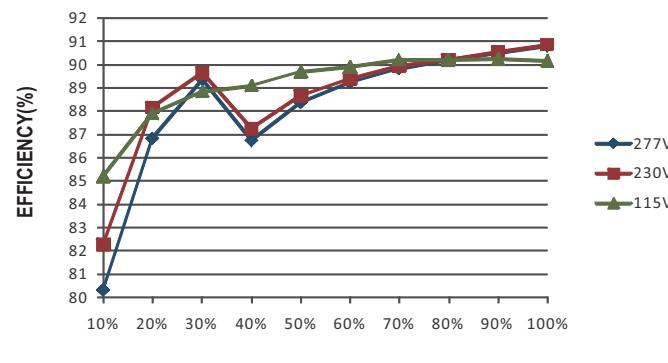
※ 48V Blank-Type Model,  $T_{case}$  at  $80^{\circ}$ C

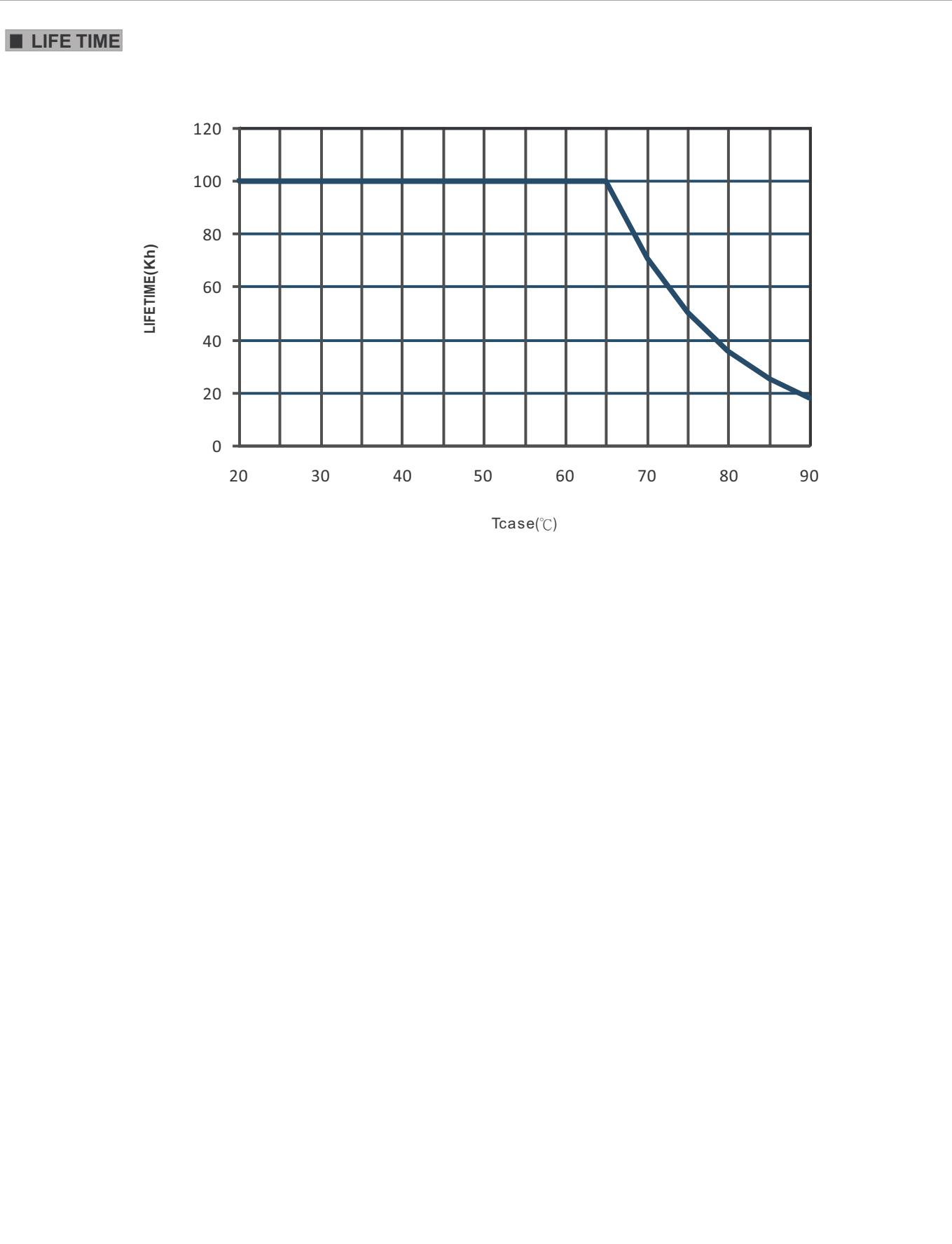


### ■ EFFICIENCY vs LOAD

NPF-120D series possess superior working efficiency that up to 90% can be reached in field applications.

※ 48V Blank-Type Model,  $T_{case}$  at  $80^{\circ}$ C







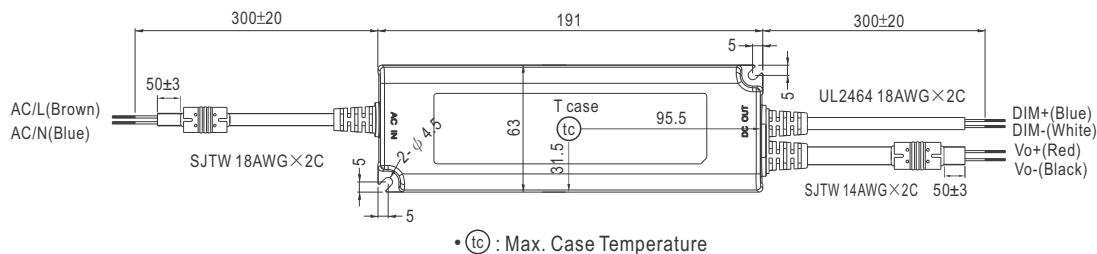
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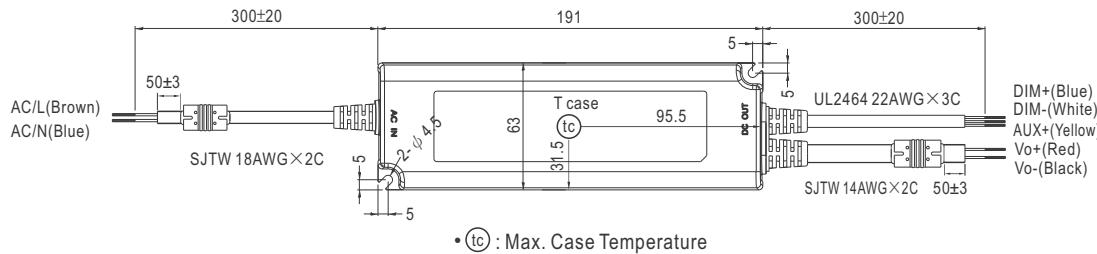
## ■ MECHANICAL SPECIFICATION

Case No. PWM-120 Unit:mm

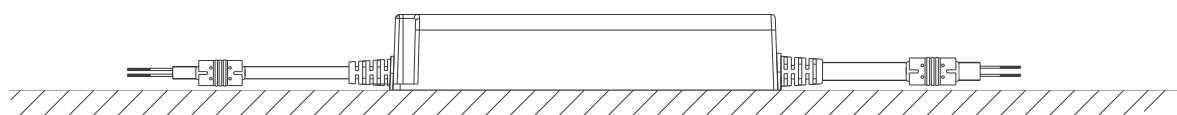
※ Blank-Type



※ BE-Type



## ■ Recommend Mounting Direction



## ■ INSTALLATION MANUAL

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