



## ■ Features

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 91%
- Protections: Short circuit / Over load / Over voltage / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- Fully encapsulated with IP67 level
- Class II power unit, no FG
- Built-in 3 in 1 dimming function (0~10Vdc or PWM signal or resistance)
- Suitable for dry / damp / wet locations
- No load power consumption<0.5W
- 5 years warranty

## ■ Applications

- Indoor LED lighting
- LED lighting decorative
- Architecture lighting
- Moving sign
- Tunnel lighting

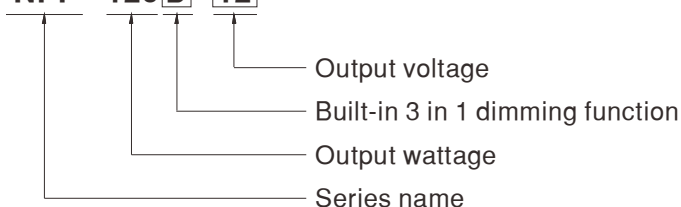
## ■ Description

NPF-120D is one 120W waterproof single-output LED power supply series. In addition to the fundamental LED driving function, NPF-120D is equipped with a built-in 3 in 1 dimming function (0~10Vdc, PWM signal or resistance) that simplifies the brightness adjustment for system designers so as to achieve light reduction and energy conservation. The entire series adopts the universal input range from 90VAC to 305VAC and incorporates the built-in PFC function. The enclosure design is a 94V-0 flame retardant plastic case. The interior is fully potted with silicone that enhances the heat dissipation and allows the power supply to meet the anti-vibration demand up to 5G; it also thus conforms to IP67 level, enabling NPF-120D to be used in a highly dusty and highly humid harsh environment.

Providing a high efficiency up to 91% and a low no load power consumption below 0.5W, NPF-120D can satisfy the energy saving demand for the new generation LED lighting. The class II design (without FG pin) and the double insulation weather-resistant cable (SJTW) on the input side make it convenient for users to flexibly install on various types of lighting systems. The entire series can operate under the temperature between -40~+70 °C and comply with the relevant global lighting safety certification.

## ■ Model Encoding

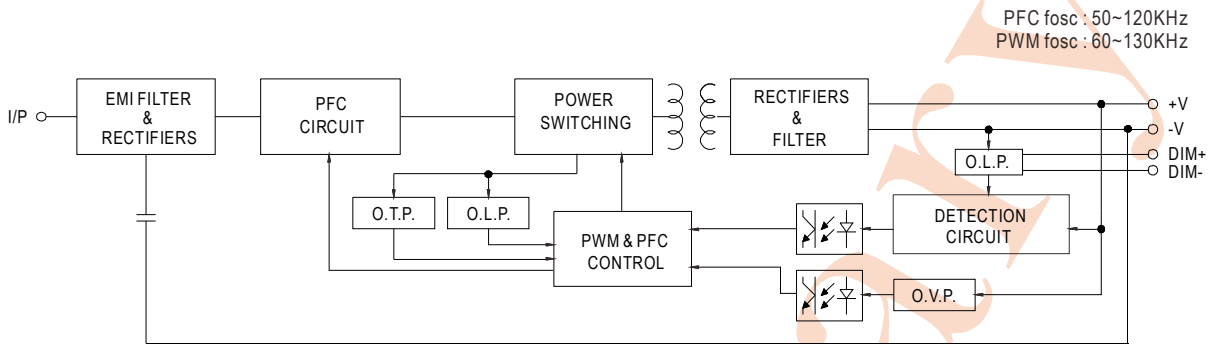
**NPF - 120D - 12**



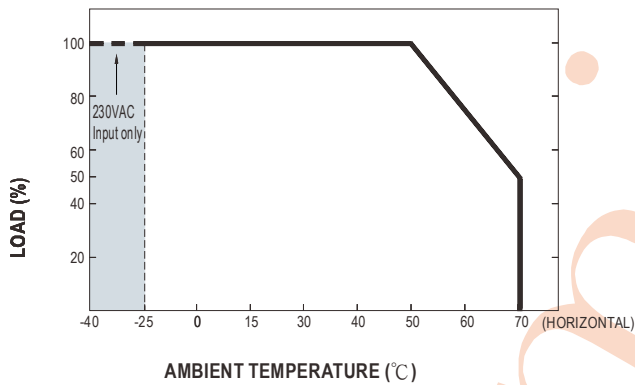
**SPECIFICATION**

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	DC VOLTAGE	12V	15V	20V	24V	30V	36V	42V	48V	54V	
	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	
	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	
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	250mVp-p	250mVp-p	350mVp-p	
	VOLTAGE TOLERANCE Note.3	±4.0%	±4.0%	±4.0%	±4.0%	±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	±2.0%	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
	SETUP, RISE TIME Note.4	500ms, 80ms at 95% load    230VAC / 115VAC									
HOLD UP TIME (Typ.)	16ms/230VAC        16ms/115VAC at full load										
INPUT	VOLTAGE RANGE	90 ~ 305VAC        127 ~ 431VDC									
	FREQUENCY RANGE	47 ~ 63Hz									
	POWER FACTOR (Typ.)	PF>0.97/115VAC, PF>0.96/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve)									
	TOTAL HARMONIC DISTORTION	THD< 20% when output loading≥60% at 115VAC/230VAC input and output loading≥75% at 277VAC input									
	EFFICIENCY (Typ.)	89%	89%	89%	90%	90%	90%	90%	91%	91%	
	AC CURRENT (Typ.)	1.3A / 115VAC        0.65A / 230VAC        0.55A / 277VAC									
	INRUSH CURRENT(Typ.)	COLD START 40A(twidth=    J s measured at 50% Ipeak) at 230VAC									
	LEAKAGE CURRENT	<0.25mA / 277VAC									
PROTECTION	OVER CURRENT	95 ~ 108% Protection type : Constant current limiting, 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	
		Protection type : Shut down o/p voltage, re-power on to recover									
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-40 ~ +70ȳ (Refer to "Derating Curve")									
	WORKING HUMIDITY	20 ~ 95% RH non-condensing									
	STORAGE TEMP., HUMIDITY	-40 ~ +80    , 10 ~ 95% RH									
	TEMP. COEFFICIENT	±0.03%/ȳ (0 ~ 50ȳ)									
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes									
SAFETY & EMC	SAFETY STANDARDS	UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13, EN62384 independent, IP67 approved									
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC									
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25ȳ/ 70% RH									
	EMC EMISSION	Compliance to ȐN55015, EN61000-3-2 Class C (ȳ60% load) ; EN61000-3-3									
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level(surge 2KV), criteria A									
OTHERS	MTBF	K hrs min.    MIL-HDBK-217F (25ȳ)									
	DIMENSION	191*63*37.5mm (L*W*H)									
	PACKING	Kg									
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25ȳ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.										

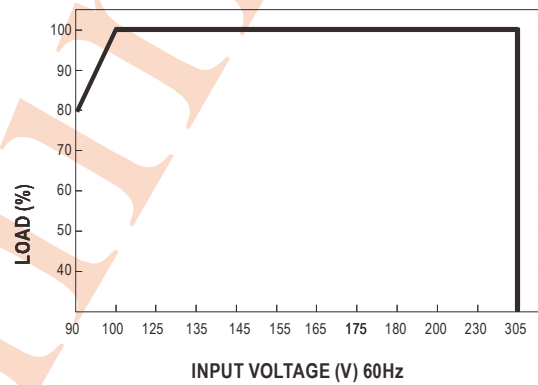
### Block Diagram



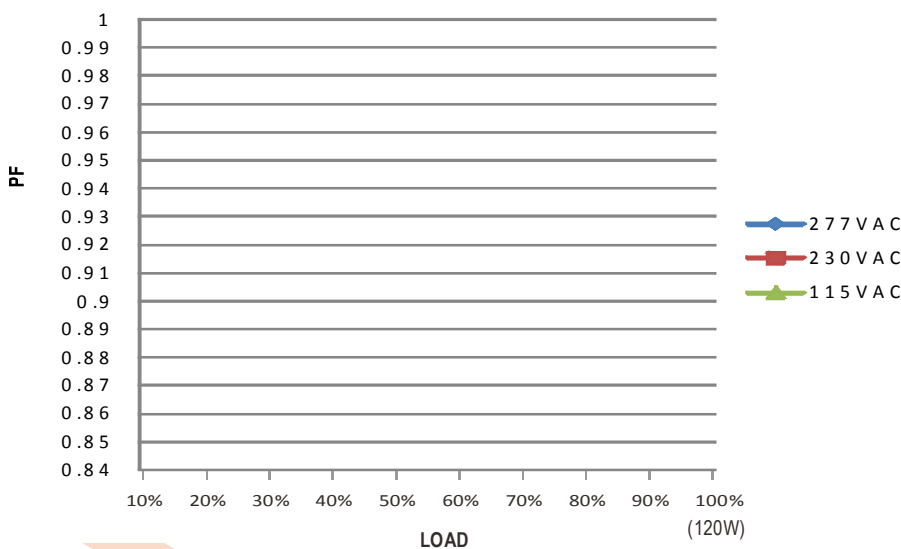
### Derating Curve



### Static Characteristics

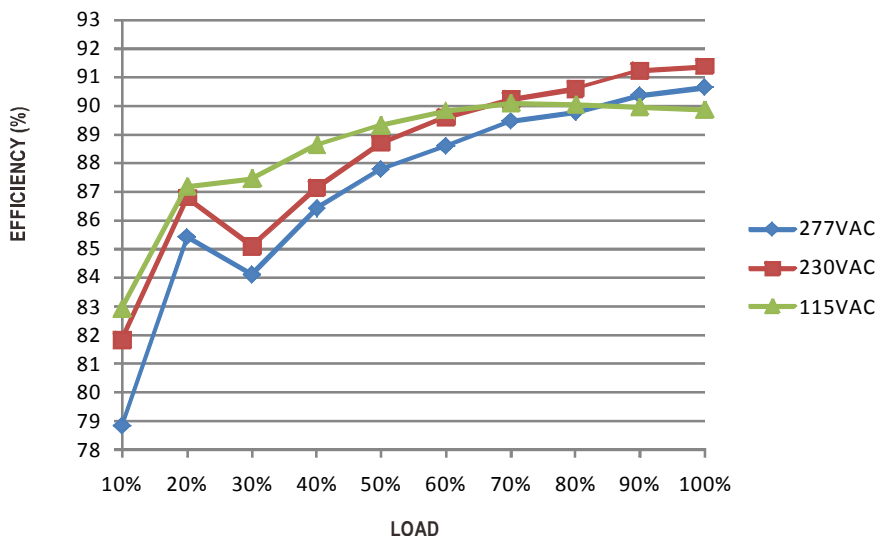


### Power Factor Characteristic



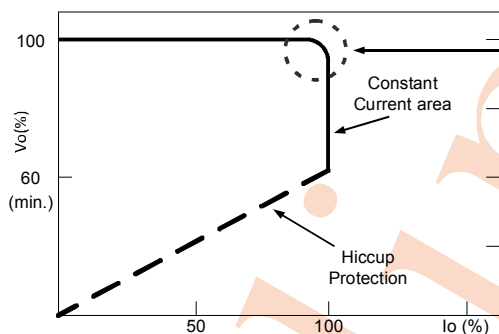
### ■ EFFICIENCY vs LOAD (48V Model)

NPF-120D series possess superior working efficiency that up to 91% can be reached in field applications.



### ■ DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.

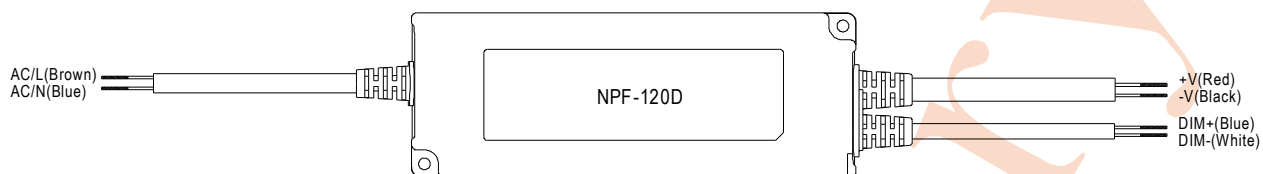


Typical LED power supply I-V curve

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.

## DIMMING OPERATION



✓ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 0 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

✓ Please DO NOT connect "DIM-" to "-V".

✓ Reference resistance value for output current adjustment (Typical)

Resistance value	Single driver	Short	10KJ	20KJ	30KJ	40KJ	50KJ	60KJ	70KJ	80KJ	90KJ	100KJ	OPEN
	Multiple drivers (N=driver quantity for synchronized dimming operation)	Short	10KJ/N	20KJ/N	30KJ/N	40KJ/N	50KJ/N	60KJ/N	70KJ/N	80KJ/N	90KJ/N	100KJ/N	-----
Percentage of rated current		0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

✓ 0 ~ 10V dimming function for output current adjustment (Typical)

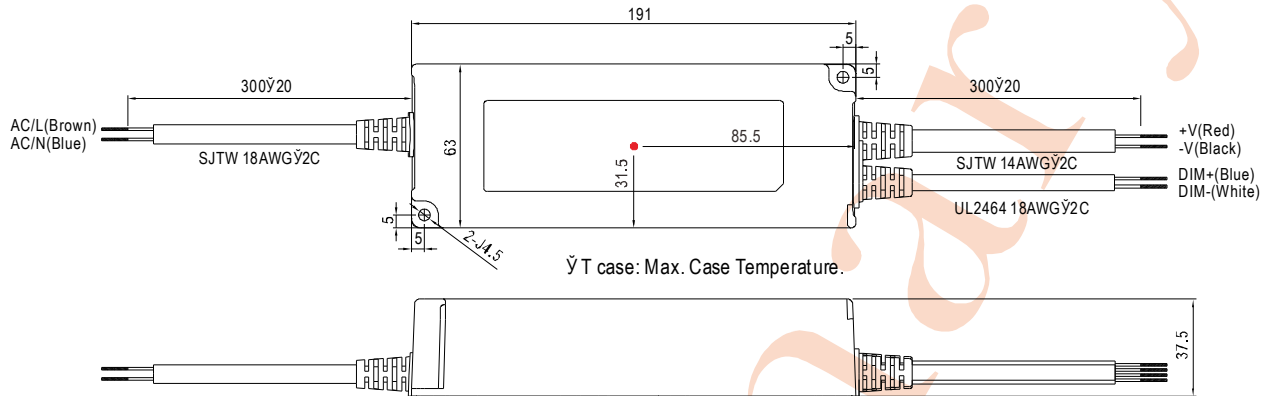
Dimming value	0V	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Percentage of rated current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

✓ 10V PWM signal for output current adjustment (Typical): Frequency range: 100Hz ~ 3KHz

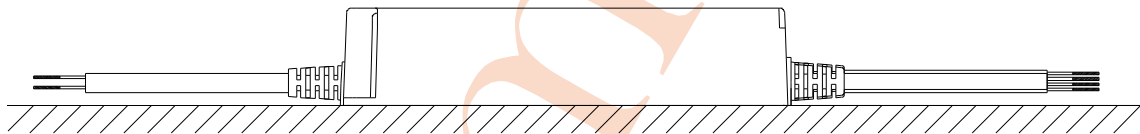
Duty value	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Percentage of rated current	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%~108%

### Mechanical Specification

Case No. Unit:mm



### Recommend Mounting Direction



### Installation Manual

Please refer to : <http://www.meanwell.com/webnet/search/InstallationSearch.html>