



## ■ Features

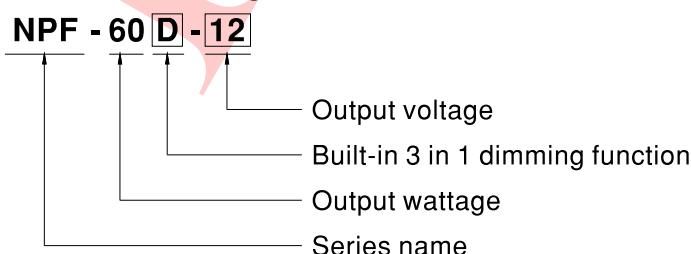
- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 90%
- Protections: Short circuit / Over load / Over voltage / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- Fully encapsulated with IP67 level
- Class II power unit, no FG
- Class 2 power unit
- 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

## ■ Description

NPF-60D is one 60W waterproof single-output LED power supply series. In addition to the fundamental LED driving function, NPF-60D 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-60D to be used in a highly dusty and highly humid harsh environment.

Providing a high efficiency up to 90% and a low no load power consumption below 0.5W, NPF-60D 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



## ■ Applications

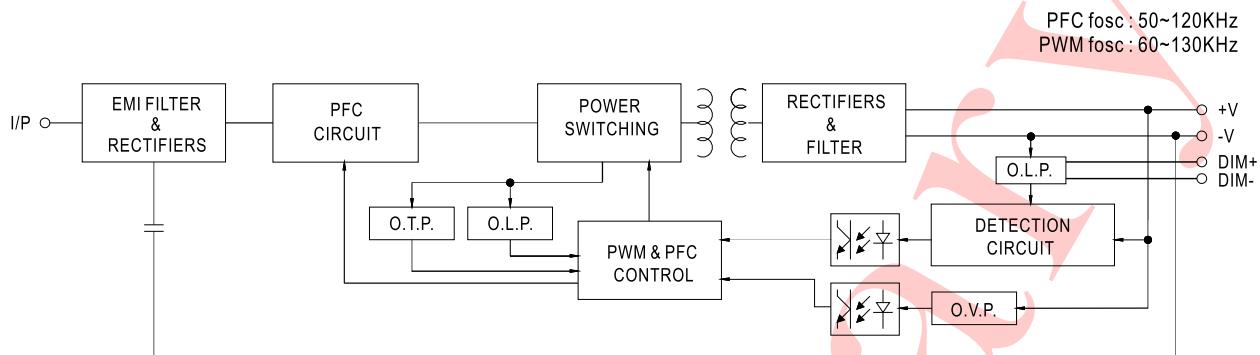
- Indoor LED lighting
- LED lighting decorative
- Architecture lighting
- Moving sign
- Tunnel lighting



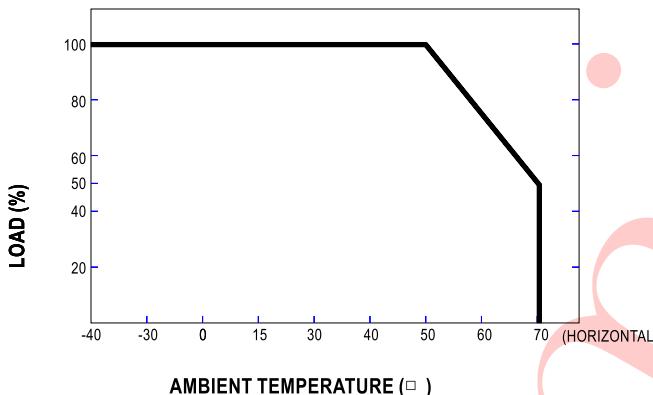
## SPECIFICATION

MODEL	NPF-60D-12	NPF-60D-15	NPF-60D-20	NPF-60D-24	NPF-60D-30	NPF-60D-36	NPF-60D-42	NPF-60D-48	NPF-60D-54	
OUTPUT	<b>DC VOLTAGE</b>	12V	15V	20V	24V	30V	36V	42V	48V	54V
	<b>CONSTANT CURRENT REGION</b>	7.2 ~ 12V	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V
	<b>RATED CURRENT</b>	5A	4A	3A	2.5A	2A	1.67A	1.43A	1.25A	1.12A
	<b>RATED POWER</b>	60W	60W	60W	60W	60W	60.12W	60.06W	60W	60.48W
	<b>RIPPLE &amp; NOISE (max.) Note.2</b>	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	350mVp-p
	<b>VOLTAGE TOLERANCE Note.3</b>	±4.0%	±4.0%	±4.0%	±3.0%	±3.0%	±2.0%	±1.0%	±1.0%	±1.0%
	<b>LINE REGULATION</b>	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	<b>LOAD REGULATION</b>	±1.5%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	<b>SETUP, RISE TIME Note.4</b>	500ms, 80ms at 95% load 115VAC / 230VAC								
INPUT	<b>HOLD UP TIME (Typ.)</b>	16ms/230VAC 16ms/115VAC at full load								
	<b>VOLTAGE RANGE</b>	90 ~ 305VAC 127 ~ 431VDC								
	<b>FREQUENCY RANGE</b>	47 ~ 63Hz								
	<b>POWER FACTOR (Typ.)</b>	PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC at full load (Please refer to "Power Factor Characteristic" curve)								
	<b>TOTAL HARMONIC DISTORTION</b>	THD< 20% when output loading ≥ 60% at 115VAC/230VAC input and output loading ≥ 75% at 277VAC input								
	<b>EFFICIENCY (Typ.)</b>	86%	87%	88%	89%	90%	90%	90%	90%	90%
	<b>AC CURRENT (Typ.)</b>	0.8A / 115VAC	0.4A / 230VAC	0.25A / 277VAC						
	<b>INRUSH CURRENT(Typ.)</b>	COLD START 30A(twidth=210μs measured at 50% Ipeak) at 230VAC								
	<b>LEAKAGE CURRENT</b>	<0.25mA / 277VAC								
PROTECTION	<b>OVER CURRENT</b>	95 ~ 108%								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	<b>OVER VOLTAGE</b>	15 ~ 17V	17.5 ~ 21V	23 ~ 27V	28 ~ 34V	34 ~ 40V	41 ~ 46V	46 ~ 54V	54 ~ 60V	59 ~ 66V
ENVIRONMENT	<b>OVER TEMPERATURE</b>	Protection type : Shut down o/p voltage, re-power on to recover								
	<b>WORKING TEMP.</b>	-40 ~ +70°C (Refer to "Derating Curve")								
	<b>WORKING HUMIDITY</b>	20 ~ 95% RH non-condensing								
	<b>STORAGE TEMP., HUMIDITY</b>	-40 ~ +80°C, 10 ~ 95% RH								
	<b>TEMP. COEFFICIENT</b>	±0.03%/C (0 ~ 50°C)								
SAFETY & EMC	<b>VIBRATION</b>	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
	<b>SAFETY STANDARDS</b>	UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13, EN62384 independent, IP67 approved; Design refer to EN60335-1								
	<b>WITHSTAND VOLTAGE</b>	I/P-O/P:3.75KVAC								
	<b>ISOLATION RESISTANCE</b>	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH								
OTHERS	<b>EMC EMISSION</b>	Compliance to EN55015, EN61000-3-2 Class C (≥60% load) ; EN61000-3-3								
	<b>EMC IMMUNITY</b>	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level(surge 2KV), criteria A								
	<b>MTBF</b>	K hrs min. MIL-HDBK-217F (25°C)								
NOTE	<b>DIMENSION</b>	150*53*35mm (L*W*H)								
	<b>PACKING</b>	Kg; pcs/ Kg/ CUFT								
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C 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.										

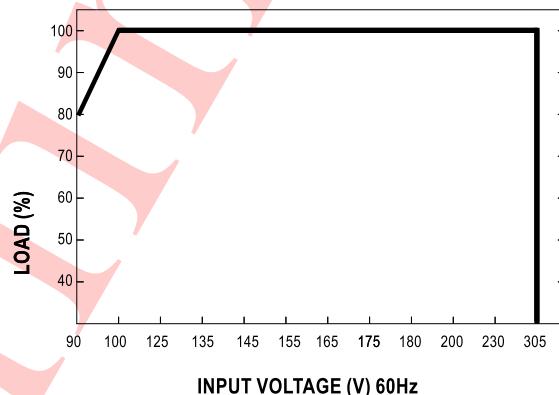
## ■ Block Diagram



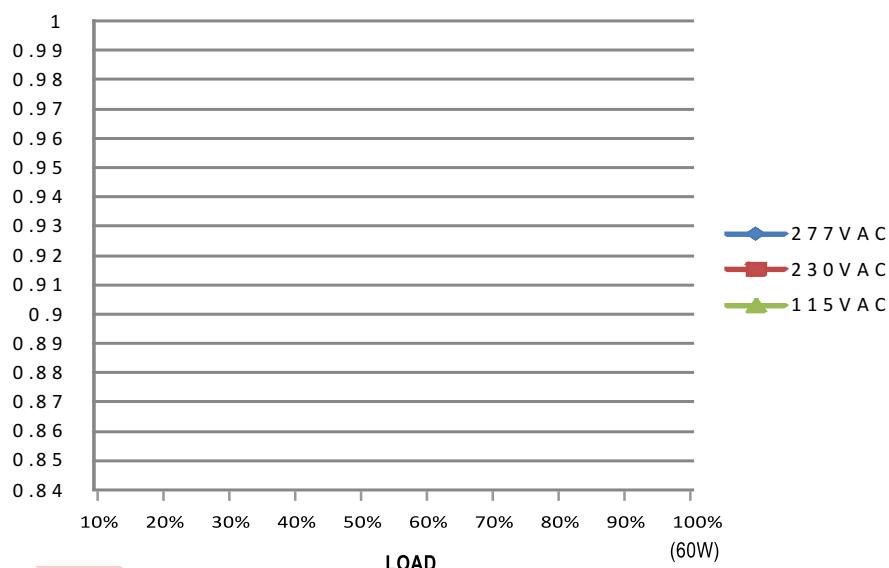
## ■ Derating Curve

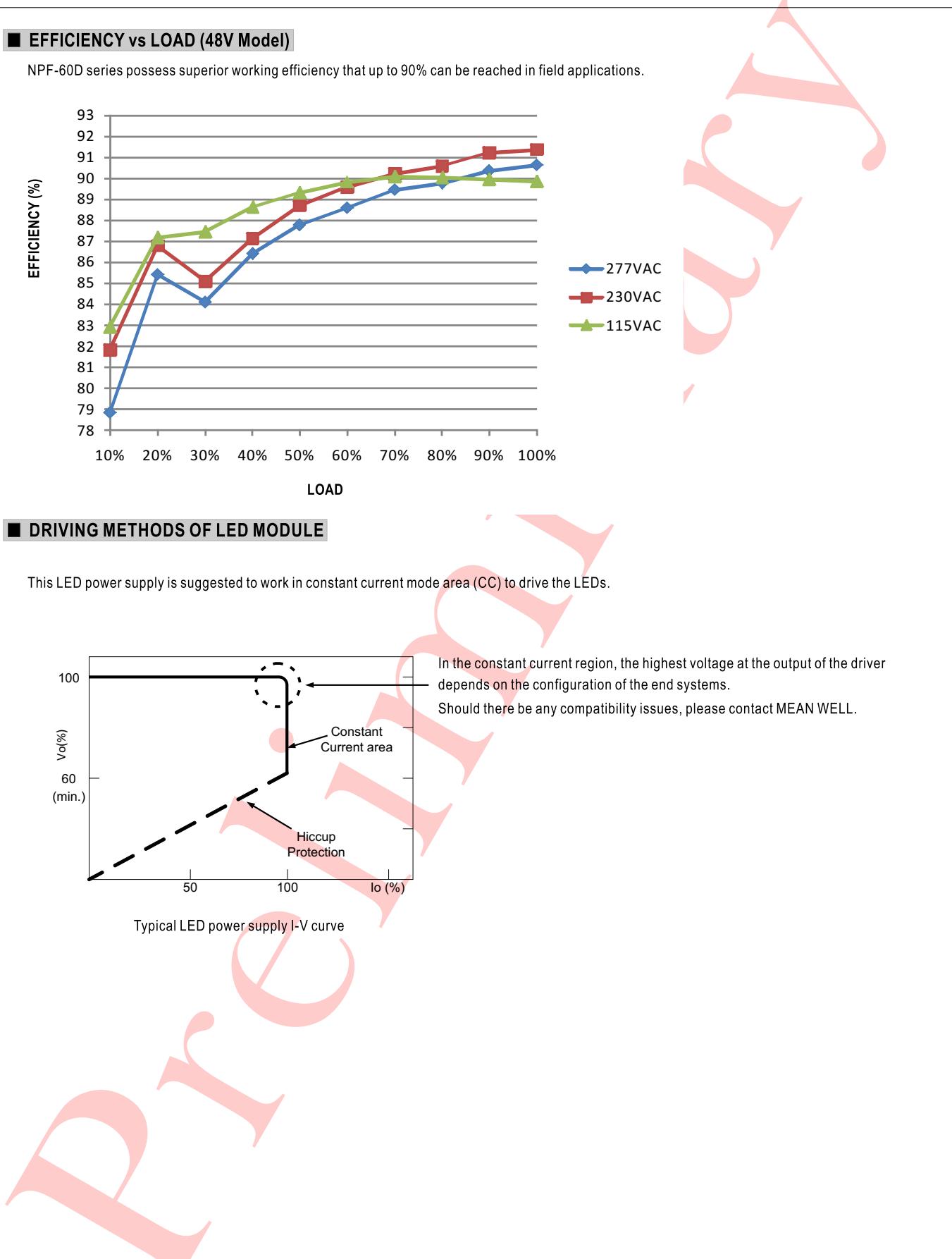


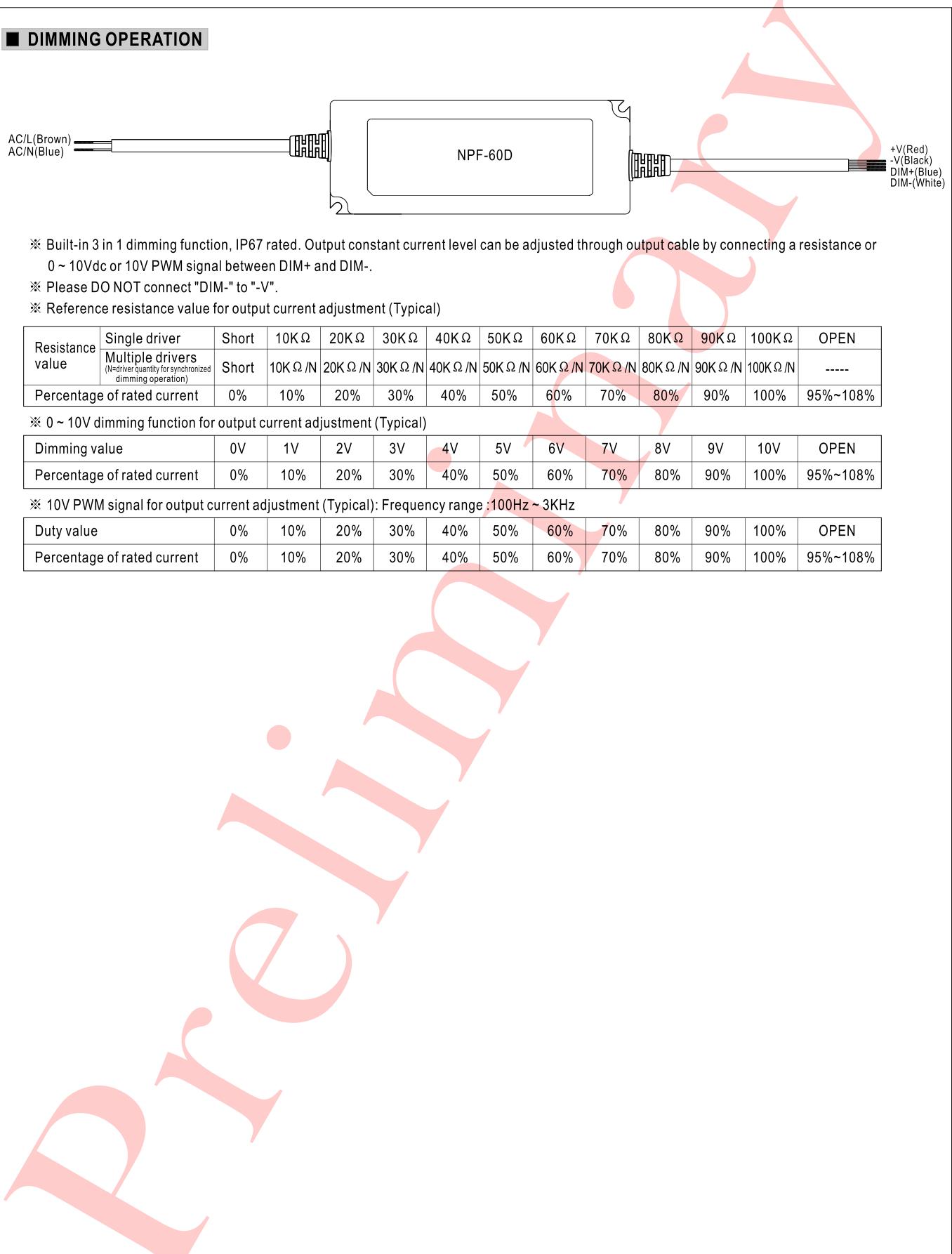
## ■ Static Characteristics

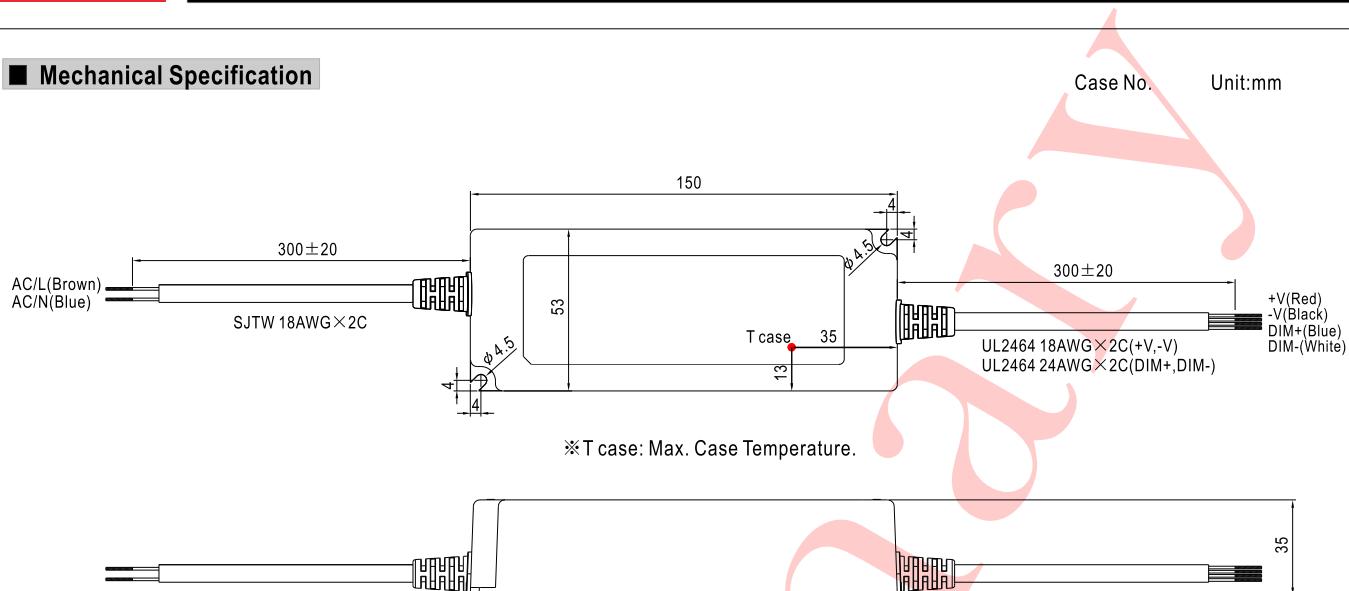
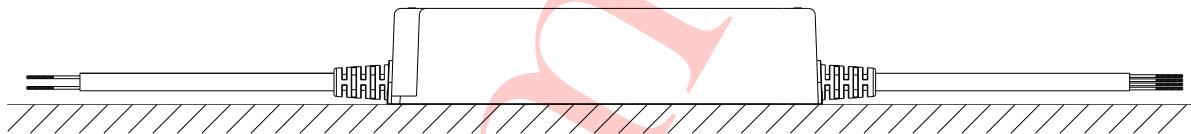


## ■ Power Factor Characteristic







**■ Mechanical Specification****■ Recommend Mounting Direction****■ Installation Manual**

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