Datasheet

NF Series - 50W

Outdoor LED Driver

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Believe in the Power of Quality

PRODUCT:

FEATURES:

- Efficiency up to 90%
- PF>0.95, THD<10%
- Constant Current output
- Lightning protection level : Difference module 6KV
- IP67 rating for indoor and outdoor
- Protections: BOP, SCP, OVP
- Warranty: 3 Years

APPLICATIONS:

LED Street lighting
LED Flood lighting
LED Industrial Lighting
Etc.

PRODUCT OVERVIEW:

The HJ-W50-NF series is an isolated single-stage outdoor constant current drive power supply with a rated output power of 50W. It boasts high energy conversion efficiency and can achieve constant power output within a certain range of output voltages. Its adjustable output current and precise dimming control are advantageous for LED lighting design. With comprehensive active and passive protection features, it can effectively handle various harsh conditions, ensuring reliability and low failure rates, thereby reducing costs for luminaire manufacturers.

MODEULE	Rated input voltage	Output voltage range	Output current	Power factor	T.H.D	Efficiency	Max. Case Temp.
HJ-W50-V40A-NF	100-277V	20-40Vdc	1.35A	0.95	10.0%	89%	90℃
HJ-W50-V56A-NF	100-277V	25-56Vdc	0.9A	0.95	10.0%	90%	90℃
HJ-W50-V86A-NF	100-277V	40-86Vdc	0.6A	0.95	10.0%	90%	90℃

Remarks: Test conditions: 230Vac input, maximum output voltage, full load operation for 30 minutes, ambient temperature: 25℃.

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INPUT:

Parameter	Min	Typ.	Max	Note
Rated input voltage	100Vac		277Vac	
Input voltage range	90Vac		305Vac	
Input frequency range	47Hz	50/60Hz	63Hz	
Input current			0.6A	100Vac，Full Load
Input power			60W	100Vac，Full Load
Input surge current peak value			50A	100Vac，Cold Start
			60A	230Vac，Cold Start
			70A	277Vac，Cold Start
Standby power consumption			1W	
Power factor	0.96	0.98		100Vac，Full Load
	0.95	0.97		230Vac，Full Load
	0.93	0.95		277Vac，Full Load
Total harmonic distortion		6%	8%	100Vac，Full Load
		7%	10%	230Vac，Full Load
		10%	15%	277Vac，Full Load
			20%	100-277Vac 50/60Hz, 70-100% Load

Remark: All performance parameters are measured at an ambient temperature of 25℃ and with the use of LED load, unless otherwise specified.

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OUTPUT: HJ-50W-V40A-NF

Parameter	Min	Typ.	Max	Note
Output voltage range	20V		40V	
Output current	1.2825A	1.35A	1.4175A	Input 100-277Vac
Maximum no-load output voltage			50V	
Efficiency	84.0%	85.0%		Input 100Vac, Output 20V/1.35A
	86.0%	87.0%		Input 230Vac, Output 20V/1.35A
	86.0%	87.0%		Input 277Vac, Output 20V/1.35A
	85%	87%		Input 100Vac, Output 40V/1.35A
	89%	90%		Input 230Vac, Output 40V/1.35A
	89%	90%		Input 277Vac, Output 40V/1.35A
Current accuracy	-5%		+5%	100% load Constant Power Range
Startup current overshoot			10%	LED Load
Startup time	300ms		1000ms	100%Load @ 100-277Vac
Linear regulation rate	-5%		+5%	100%Load
Load regulation rate	-5%		+5%	100%Load
Temperature coefficient	-0.03%/℃		+0.03%/℃	Casing Temp. : 0-90℃
Short circuit protection			5W	Not damaged by prolonged short circuits, automatic recovery upon fault resolution.
Input overvoltage protection	300Vac	305Vac	310Vac	No output, returns to normal after the exception is resolved
Input undervoltage protection	85Vac	90Vac	95Vac	No output, returns to normal after the exception is resolved

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OUTPUT：HJ-50W-V56A-NF

Parameter	Min	Typ.	Max	Note
Output voltage range	25V		56V	
Output current	0.855A	0.90A	0.945A	Input 100-277Vac
Maximum no-load output voltage			65V	
Efficiency	84.0%	85.0%		Input 100Vac, Output 25V/0.9A
	87%	87.5%		Input 230Vac, Output 25V/0.9A
	87%	87.5%		Input 277Vac, Output 25V/0.9A
	87.0%	88.0%		Input 100Vac, Output 56V/0.9A
	89%	90%		Input 230Vac, Output 56V/0.9A
	89%	90%		Input 277Vac, Output 56V/0.9A
Current accuracy	-5%		+5%	100% load Constant Power Range
Startup current overshoot			10%	LED Load
Startup time	300ms		1000ms	100%Load @ 100-277Vac
Linear regulation rate	-5%		+5%	100%Load
Load regulation rate	-5%		+5%	100%Load
Temperature coefficient	-0.03%/℃		+0.03%/℃	Casing Temp. : 0-90℃
Short circuit protection			5W	Not damaged by prolonged short circuits, automatic recovery upon fault resolution.
Input overvoltage protection	300Vac	305Vac	310Vac	No output, returns to normal after the exception is resolved
Input undervoltage protection	85Vac	90Vac	95Vac	No output, returns to normal after the exception is resolved

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OUTPUT：HJ-50W-V86A-NF

Parameter	Min	Typ.	Max	Note
Output voltage range	40V		86V	
Output current	0.57A	0.6A	0.63A	Input 100-277Vac
Maximum no-load output voltage			100V	
Efficiency	84.0%	85.0%		Input 100Vac, Output 40V/0.6A
	87%	87.5%		Input 230Vac, Output 40V/0.6A
	87%	87.5%		Input 277Vac, Output 40V/0.6A
	87.0%	88%		Input 100Vac, Output 86V/0.6A
	89.5%	90%		Input 230Vac, Output 86V/0.6A
	89.5%	90%		Input 277Vac, Output 86V/0.6A
Current accuracy	-5%		+5%	100% load Constant Power Range
Startup current overshoot			10%	LED Load
Startup time	300ms		1000ms	100%Load @ 100-277Vac
Linear regulation rate	-5%		+5%	100%Load
Load regulation rate	-5%		+5%	100%Load
Temperature coefficient	-0.03%/℃		+0.03%/℃	Casing Temp. : 0-90℃
Short circuit protection			5W	Not damaged by prolonged short circuits, automatic recovery upon fault resolution.
Input overvoltage protection	300Vac	305Vac	310Vac	No output, returns to normal after the exception is resolved
Input undervoltage protection	85Vac	90Vac	95Vac	No output, returns to normal after the exception is resolved

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OTHER:

Parameter	Description	Note
Estimation of Mean Time Between Failures (MTBF)	150,000 hours	230Vac, full load, ambient temperature 25℃ (MIL-HDBK-217F)
Lifetime	25,000 hours	230Vac, full load, Tc=75℃
International Protection	IP67	Suitable for dry and humid environments, avoid prolonged exposure to rain.
Maximum casing temperature	90℃	
Warranty	3 Years	Casing temperature (Tc point) not exceeding 75℃
Weight	170g	Net weight
Dimension	115mm*39.5mm*25mm	Length * Width * Height

ENVIRONMENT:

Parameter	Min	Typ.	Max	Note
Operating temperature	-40℃	60℃	90℃	Casing temperature
Operating humidity	10%RH		90%RH	No condensation
Storage temperature	-40℃	25℃	90℃	
Storage humidity	10%RH		90%RH	No condensation

Safety and EMC:

Items	Standard	Note
Surge (shock)	EN 61000-4-5	Differential Mode L-N ± 6KV(2Ω)
Insulation	I/P-O/P:100MΩ / 500VDC / 25℃/ 70% RH	
Dielectric strength	I/P-O/P:1.5kVac	
Ground resistance	<0.1Ω，25A/1min	
Leakage current	<0.75mA 277Vac	

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Characteristics Curve:

Vin	Peak current	Duration (@10% peak current)	Duration (@50% peak current)
100Vac	24A	326us	155us
230Vac	49.6A	332us	162us
277Vac	63A	315us	165us

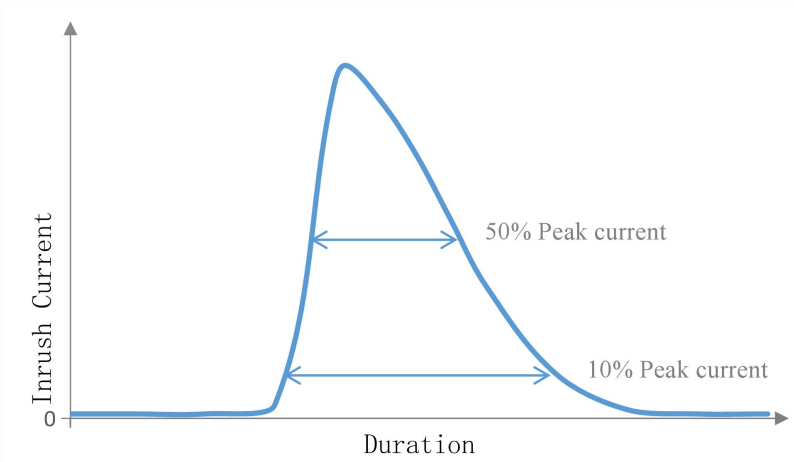

Fig.1. Inrush Current VS Duration

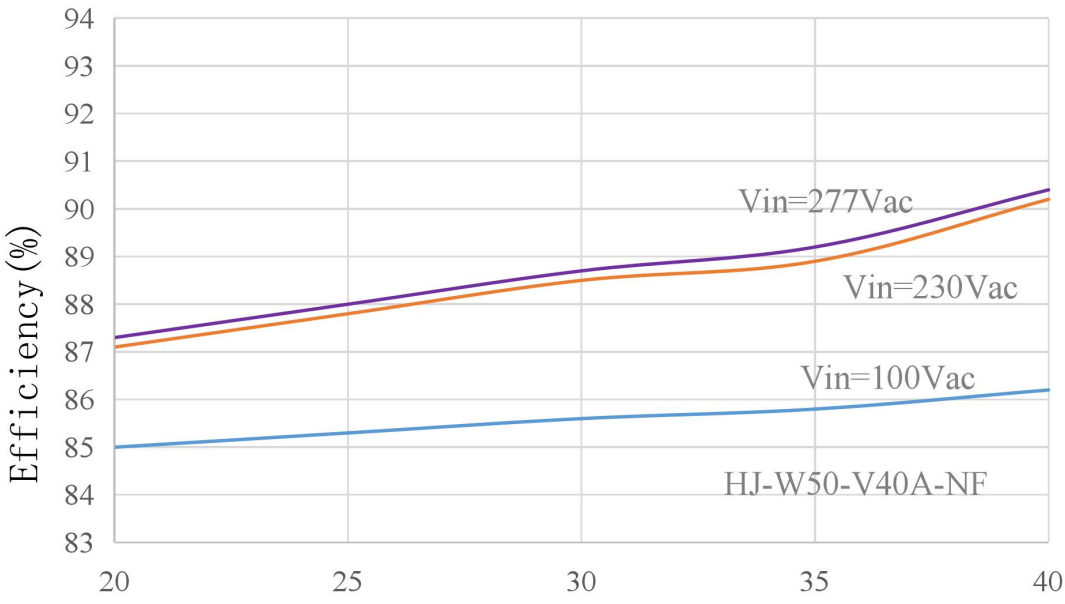

Fig.2.Efficiency VS Output Voltage

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Characteristics Curve:

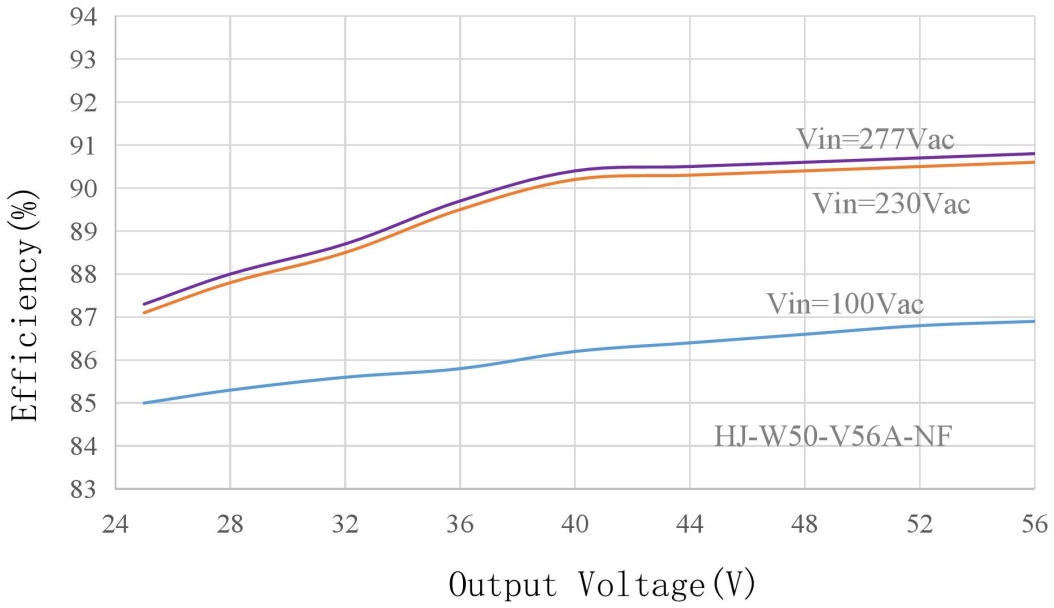

Fig.3.Efficiency VS Output Voltage

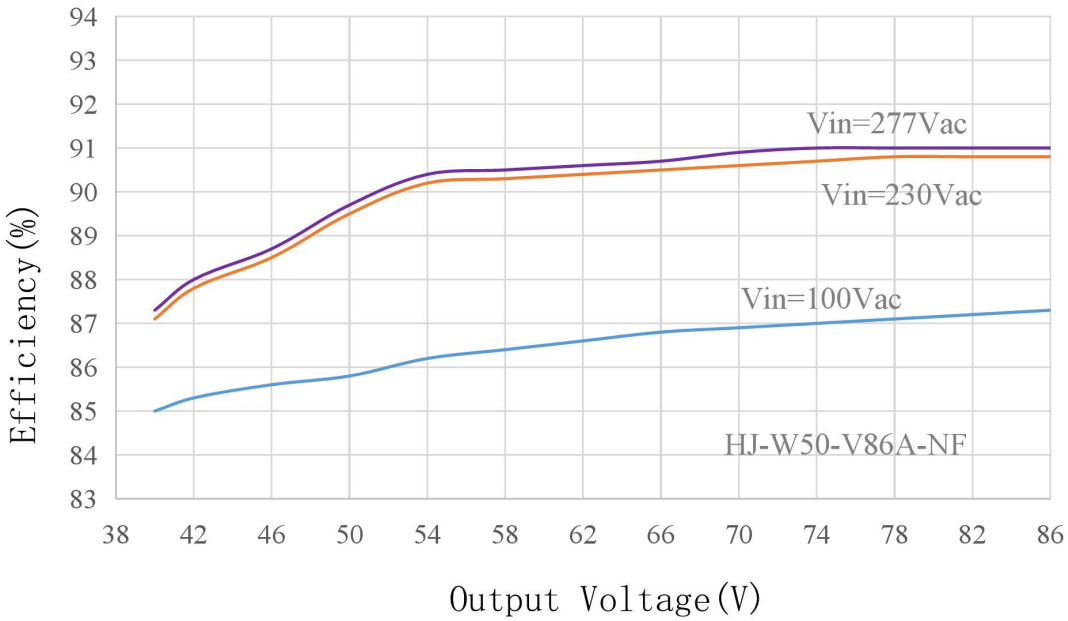

Fig.4.Efficiency VS Output Voltage

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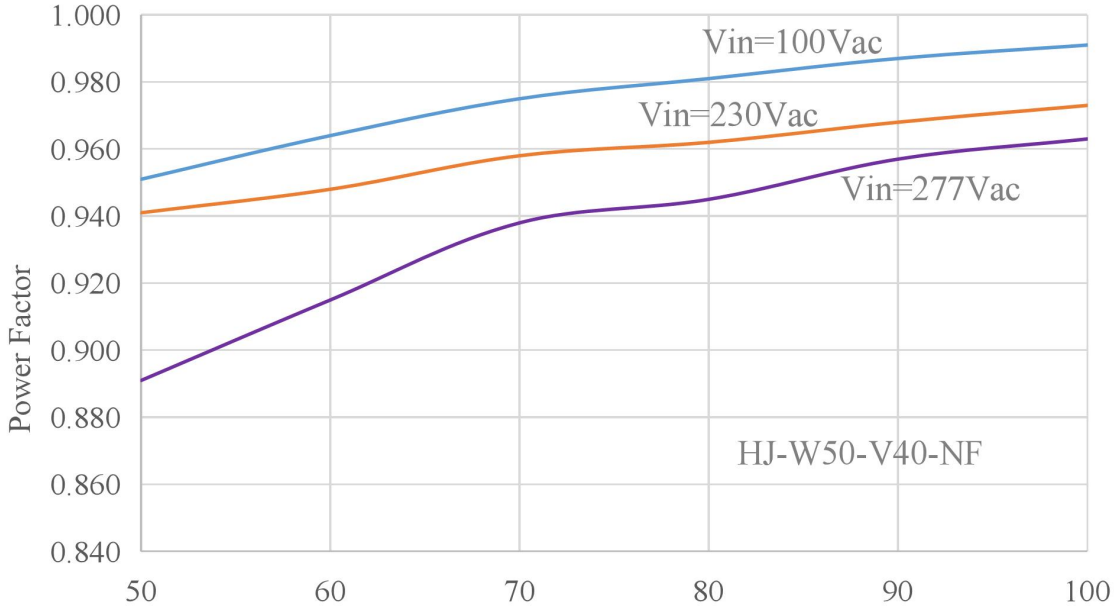

Fig 5.Power Factor VS Out Power

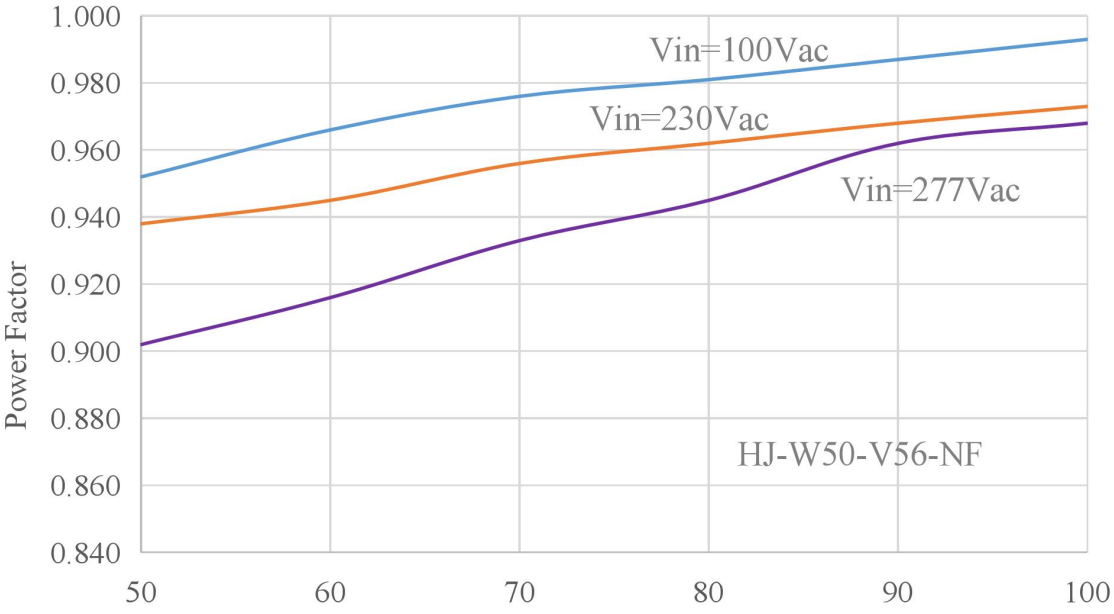

Fig 6.Power Factor VS Out Power

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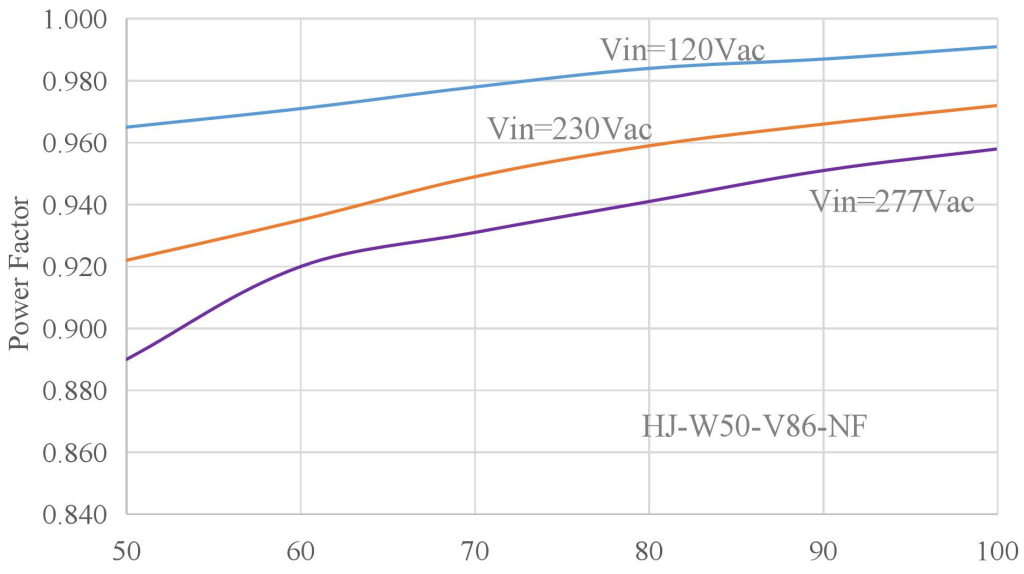

Fig 7.Power Factor VS Out Power

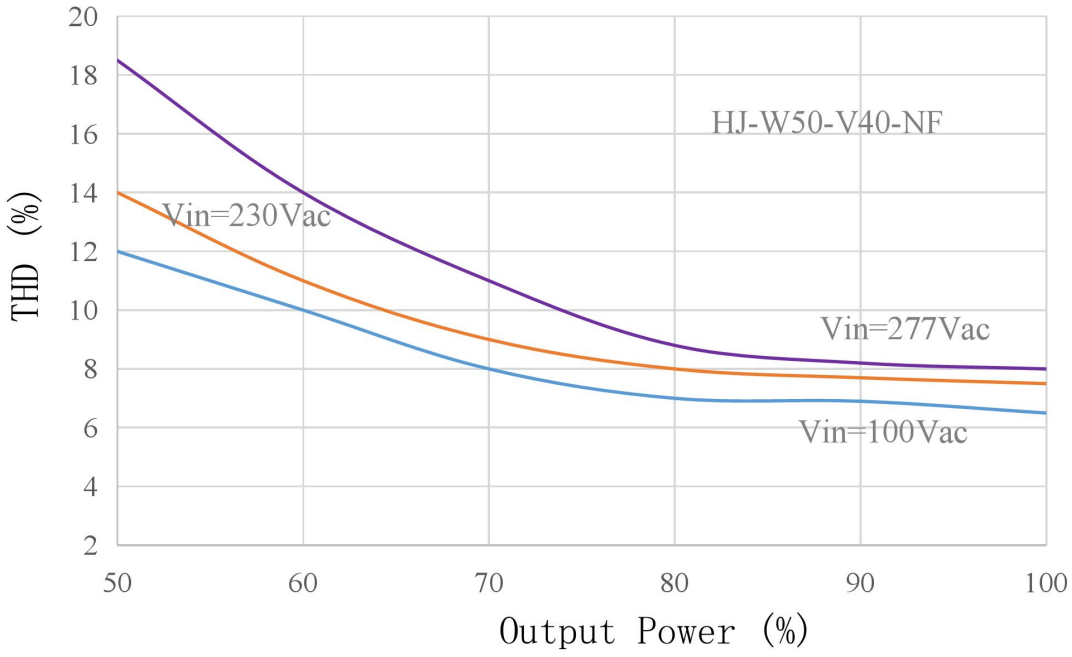

Fig 8.THD VS Output Power

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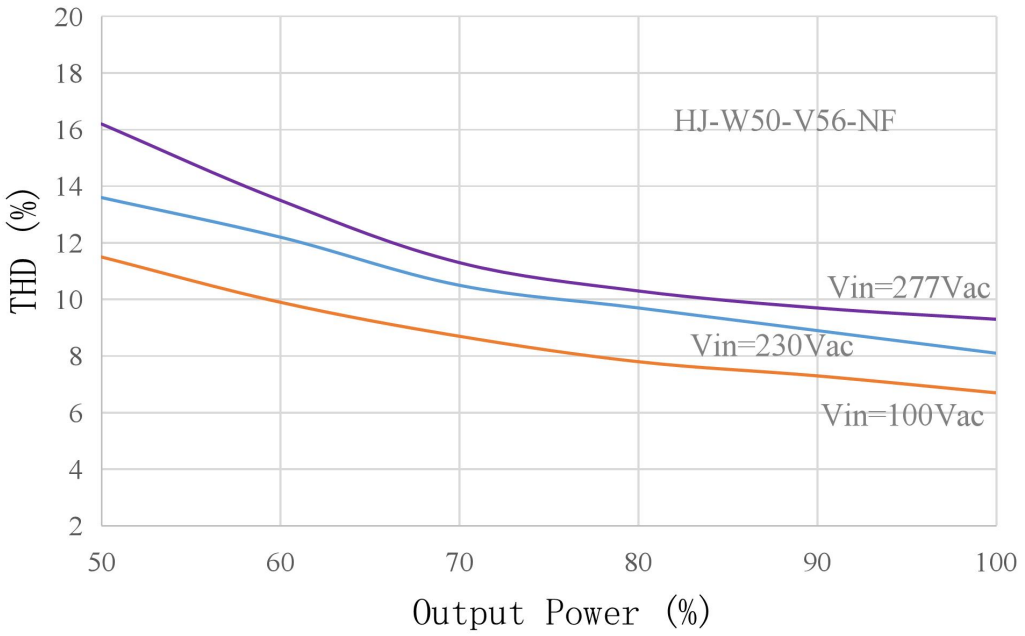

Fig 9. THD VS Output Power

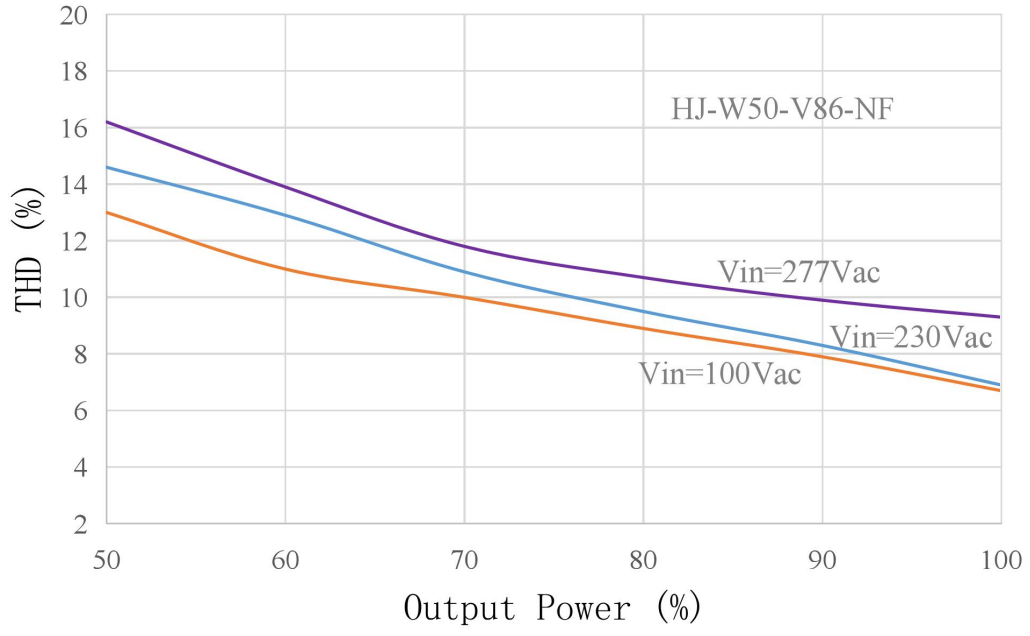

Fig 10. THD VS Output Power

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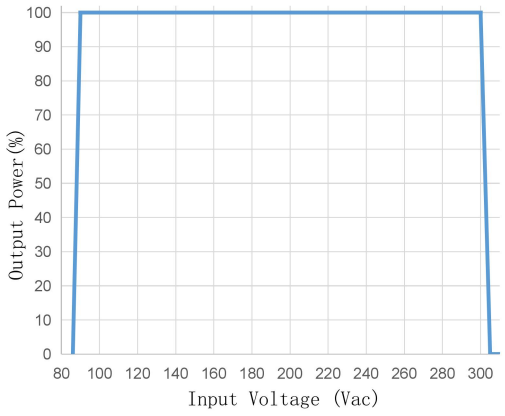

Fig 11.Output Power VS Input Voltage

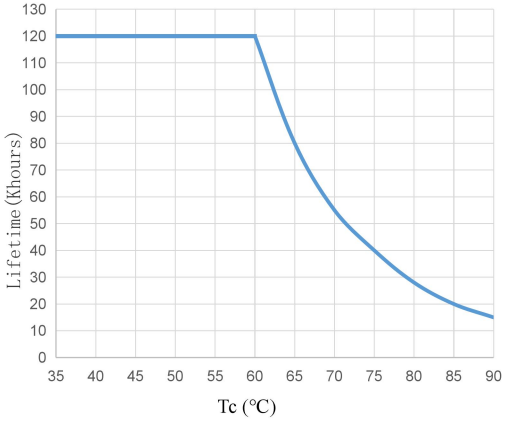

Fig 12.Output Power VS Tc

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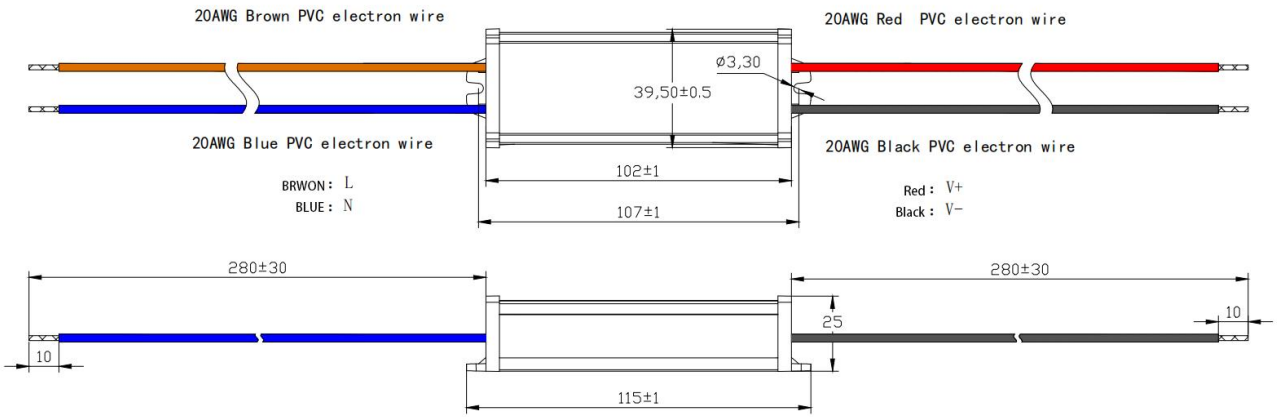
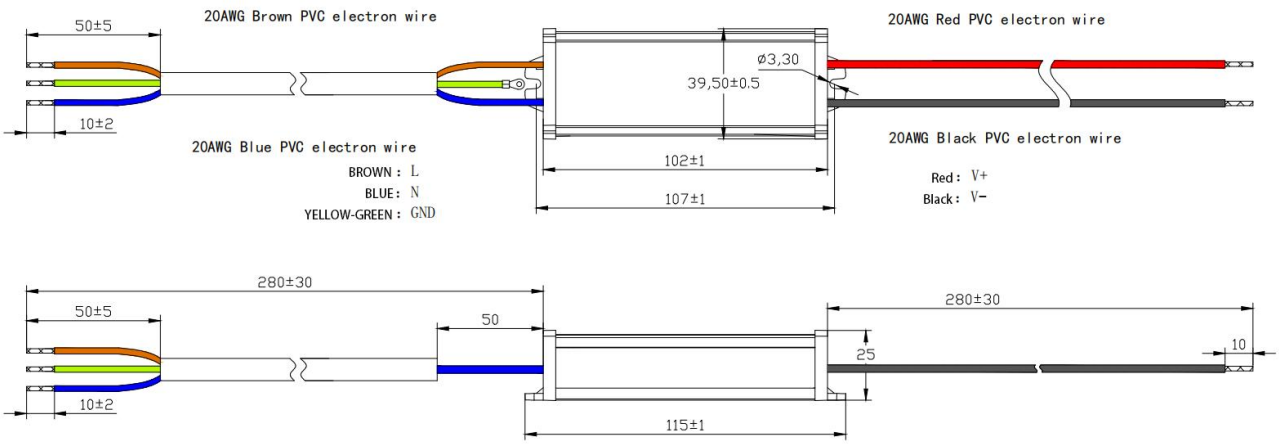
Mechanical Specification:

HJ-W50-V40A/56A/86A-NF

Standard wire:



Optional wires:



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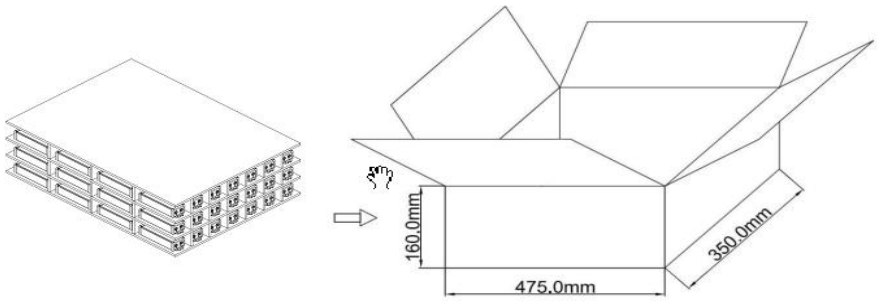
Packaging:



Packaging Description:

- The external dimensions of the packaging box (unit: mm) are: Length x Width x Height = 475 x 350 x 160;
- Each box contains 84units, arranged in 3layers with 28units per layer. The gross weight is16kg;
- Net weight per unit: 170g;
- The packaging box includes product name, model, manufacturer's identification, quality department's inspection certificate, manufacturing date, and other information.

Shipping:

The packaging is suitable for transportation by car, ship, and airplane. During transport, it should be protected from moisture, sunlight, and handled with care during loading and unloading.

Storage:

Product storage should comply with the provisions of GB 3873-83.

Products stored for more than 1 year should undergo re-inspection, and only after passing the inspection can they be used.

RoHS:

The product complies with the European Union RoHS Directive (2011/65/EU) and the European Parliament Amendment 2015/863/EU.

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Update History:

Versions	Description of Update	Update Date	Note
V00	Initial release	2024.03.20	

Edit	Audit	Approval
2024.03.21 15:44:48 +08'00'	2024.03.21 15:45:56 +08'00'	

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