



## Datasheet

# MPB Series - 300-450W

Outdoor Constant Voltage LED Driver Dimmable

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**Believe in the Power of Quality**

## PRODUCT:

## FEATURES:



- Efficiency up to 94%
- PF>0.97,THD<5%
- full power output within recommended operating voltage range
- Constant Voltage output
- Lightning protection level :
  - Standard: Difference module 4 kV
  - Common mode 6 kV
  - Optional: Difference module 6 kV
  - Common mode 20 kV
- IP67 rating for indoor and outdoor
- Protections: BOP、OVP、OTP、SCP、
- Warranty: 5 Years

## CERTIFICATIONS:

## APPLICATIONS:



LED Landscape lighting  
 LED Advertising Lighting  
 LED Exhibition Lighting  
 LED Stage Lighting

## PRODUCT OVERVIEW:

The MPB series constant voltage driver is an isolated two-stage circuit structure, with a rated power of up to 450W, designed for outdoor constant voltage power supply. It can operate within an input voltage range of 180-305Vac, featuring a high power factor, high energy conversion efficiency, and high lightning protection level. The product's housing adopts a full aluminum structure and encapsulation process, achieving an IP67 protection rating. The compact design ensures compatibility with efficient heat dissipation. Additionally, the product is equipped with comprehensive protection features, including under-voltage protection, over-voltage protection, short-circuit protection, and over-temperature protection, enhancing reliability and extending the product's lifespan. This product is suitable for applications such as LED strip lighting, billboards, landscape illumination, exhibition lighting, and stage lighting.

MODULE	Rated input voltage	Rated output power	Output voltage	Adjustable range of output current	Power factor	T.H.D	Efficiency	Max. Case Temp.
HJ-H300-A24E-MPB	200-277V	300W	24Vdc	0-12.5A	0.97	5%	94%	90°C
HJ-H350-A24E-MPB	200-277V	350W	24Vdc	0-14.58A	0.97	5%	94%	90°C
HJ-H400-A24E-MPB	200-277V	400W	24Vdc	0-16.66A	0.97	5%	94%	90°C
HJ-H450-A24E-MPB	200-277V	450W	24Vdc	0-18.75A	0.97	5%	94%	90°C

**Remarks:** Testing Conditions: 230Vac input, full load, rated output voltage/current, ambient temperature: 25°C.

**INPUT:**

Parameter	Min	Typ.	Max	Note
Rated input voltage	200Vac		277Vac	
Input voltage range	180Vac		305Vac	
Input frequency range	47Hz	50/60Hz	63Hz	
Input current				
HJ-H300-A24E-MPB			1.8A	200Vac, Full Load
HJ-H350-A24E-MPB			2.0A	200Vac, Full Load
HJ-H400-A24E-MPB			2.3A	200Vac, Full Load
HJ-H450-A24E-MPB			2.6A	200Vac, Full Load
Input power				
HJ-H300-A24E-MPB			360W	200Vac, Full Load
HJ-H350-A24E-MPB			400W	200Vac, Full Load
HJ-H400-A24E-MPB			460W	200Vac, Full Load
HJ-H450-A24E-MPB			520W	200Vac, Full Load
Input surge current peak value			100A	230Vac, Cold Start
Power factor	0.97	0.99		200Vac, Full Load
	0.96	0.98		230Vac, Full Load
	0.95	0.97		277Vac, Full Load
	0.9			200-277Vac 50/60Hz,70-100% Load
Total harmonic distortion		3%	5%	120Vac, Full Load
		3%	5%	230Vac, Full Load
		5%	7%	277Vac, Full Load
			10%	120-277Vac 50/60Hz,70-100% Load

**Remark:**

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

## OUTPUT:

Parameter	Min	Typ.	Max	Note
Output voltage range	22.8V	24V	25.2V	
Rated output voltage		24V		
Rated output current		12.5A		HJ-H300-A24E-MPB
		14.58A		HJ-H350-A24E-MPB
		16.66A		HJ-H400-A24E-MPB
		18.75A		HJ-H450-A24E-MPB
Maximum no-load output voltage			25.2V	
Efficiency HJ-H300-A24E-MPB HJ-H350-A24E-MPB	92.5%	93%		Input 200Vac, @Full Load Output
	93.5%	94%		Input 230Vac, @Full Load Output
	94%	94.5%		Input 277Vac, @Full Load Output
Efficiency HJ-H400-A24E-MPB HJ-H450-A24E-MPB	92.5%	93%		Input 200Vac, @Full Load Output
	93.5%	94%		Input 230Vac, @Full Load Output
	94%	94.5%		Input 277Vac, @Full Load Output
Current accuracy	-2%		+2%	50%-100% load
Output current ripple		3%	5%	Under the conditions of a 20MHz bandwidth oscilloscope, output in parallel with a 47uF electrolytic capacitor and a 0.1uF ceramic capacitor.
Startup time	500ms		1000ms	100%Load@120-277Vac
Linear regulation rate	-2%		+2%	100%Load
Load regulation rate	-2%		+2%	100%Load
Temperature coefficient	-0.03%/°C		+0.03%/°C	Casing Temp. : 0-90°C
Short circuit protection			20W	Not damaged by prolonged short circuits, automatic recovery upon fault resolution.
Input undervoltage protection	140Vac	150Vac	160Vac	Derated output, returns to normal after the abnormal condition is resolved.
Input overvoltage protection	310Vac	320Vac	330Vac	Turn off the output, returns to normal after the abnormal condition is resolved.
Output overvoltage protection	120%Vo		150%Vo	Burst mode, resumes normal operation after abnormal release

## OTHER:

Parameter	Description	Note
Estimation of Mean Time Between Failures (MTBF)	229,500 hours	230Vac, full load, ambient temperature 25°C (MIL-HDBK-217F).
Lifetime	70,000 hours	230Vac, full load, Tc=75°C
International Protection	IP 67	Suitable for dry and humid environments, avoid prolonged exposure to rain.
Maximum casing temperature	90°C	
Warranty	5 Years	Casing temperature (Tc point) not exceeding 75°C
Weight	1000g	HJ-H300-A24E-MPB
	1050g	HJ-H350-A24E-MPB
	1300g	HJ-H400-A24E-MPB
	1370g	HJ-H450-A24E-MPB
Dimension	217mm*63mm*37mm	HJ-H300-A24E-MPB
	227mm*63mm*37mm	HJ-H350-A24E-MPB
	237mm*71mm*42 mm	HJ-H400-A24E-MPB
	247mm*71mm*42 mm	HJ-H450-A24E-MPB

## ENVIRONMENT:

Parameter	Min	Typ.	Max	Note
Operating temperature	-40°C	50°C	90°C	Casing temperature
Operating humidity	10%RH		90%RH	No condensation
Storage temperature	-40°C	25°C	90°C	
Storage humidity	10%RH		90%RH	No condensation

## Safety and EMC:

Items	Standard	Note
CCC	GB 19510.14-2009、GB/T 17743-2021、GB17625.1-2022	
ENEC	EN 61347-1:2015 EN 61347-2-13:2014 EN 61347-2-13:2014/A1:2017	
CB	IEC 61347-1, IEC 61347-2-13-2016	
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	
Conducted emission	EN 55015/GB 17743	Conducted emission Test & Radiated emission Test
Radiated emission		
Harmonics Current	EN 61000-3-2	Harmonic current emissions
Voltage flicker	EN 61000-3-3	Voltage Fluctuations & Flicker
ESD	EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
Radiated Susceptibility	EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
Surge (transient)	EN 61000-4-5	Surge Immunity Test: Differential Mode 4 kV, Common Mode 6 kV
Conducted immunity	EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
Power frequency magnetic field	EN 61000-4-8	Power Frequency Magnetic Field Test
Voltage dips and interruption	EN 61000-4-11	Voltage Dips
Immunity of lighting equipment	EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment
Oscillatory wave immunity	EN 61000-4-12	Oscillatory Waves Immunity Test
Insulation	I/P-O/P, I/P-FG, O/P-FG:100MΩ / 500VDC / 25°C/ 70% RH	
Dielectric strength	I/P-O/P:3.75kVac I/P-FG:1.5kVac O/P-FG:500Vac I/P-DIM&Vaux:3.75kVac O/P-DIM&Vaux:1.5kVac DIM&Vaux-FG:1.5kV	
Ground resistance	<0.1Ω, 25A/1min	
Leakage current	<0.75mA 277Vac	

**Note:** The power supply complies with relevant EMC standards. As part of the terminal equipment system, EMC needs to be reconfirmed in conjunction with the entire system.

## Characteristics Curve:

Vin	Peak current	Duration (@10% peak current)	Duration (@50% peak current)
230Vac	81.6A	964us	420us
277Vac	97.6A	980us	420us

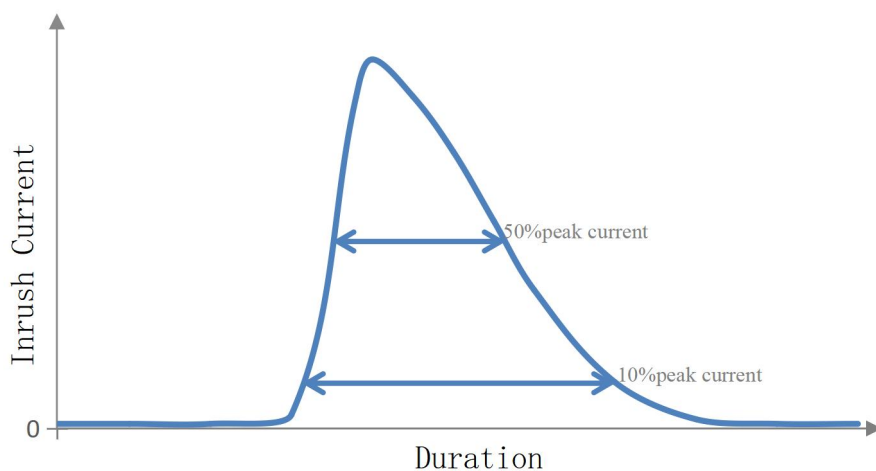


Fig 1. Inrush Current VS Duration

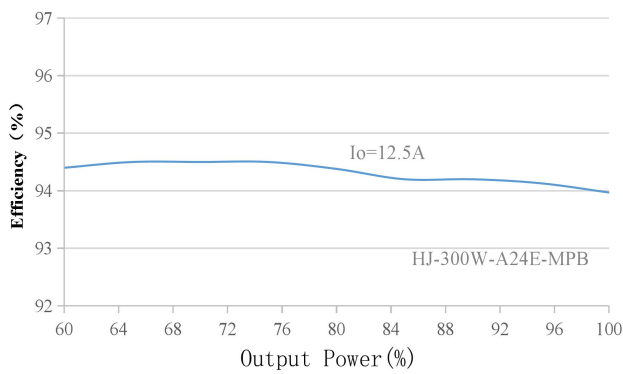


Fig 2. Efficiency VS Output Power

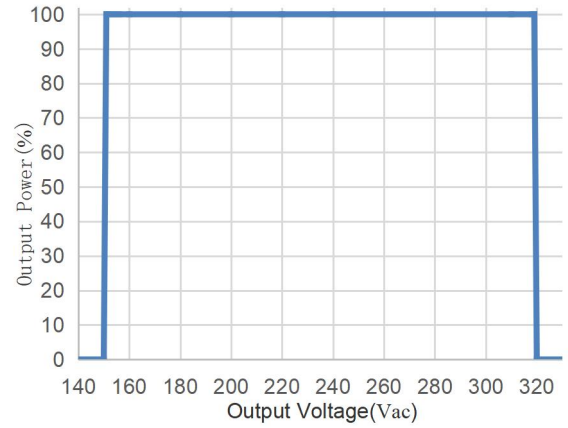


Fig 3. Output Power VS Output Voltage

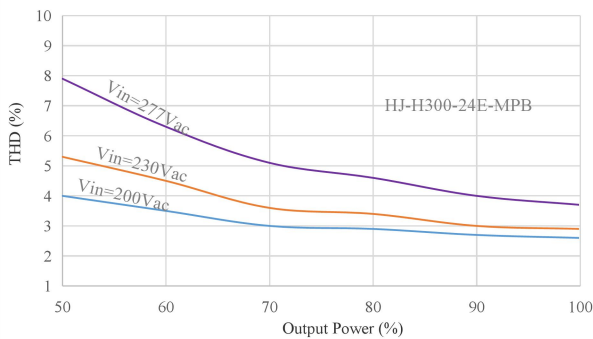


Fig 4. THD VS Output Power

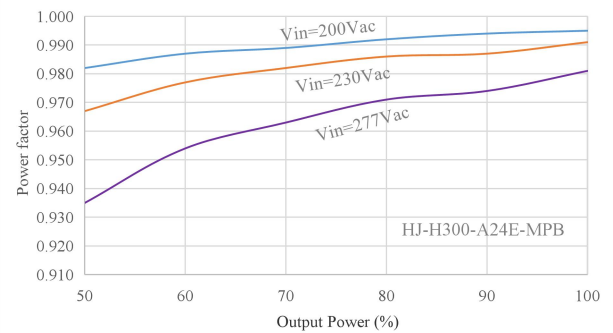


Fig 5. Power Factor VS Output Power

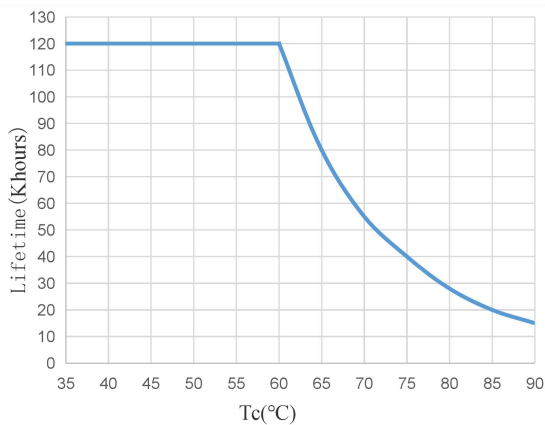


Fig 6. Lifetime VS Tc



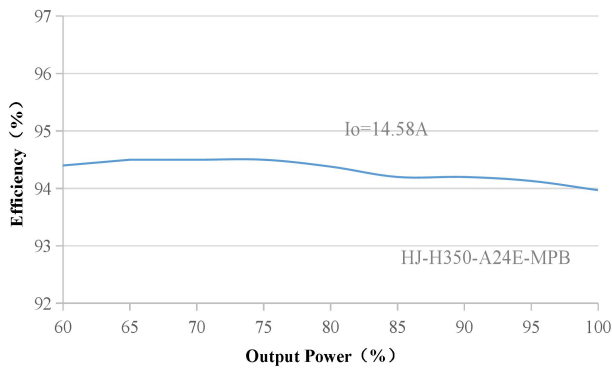


Fig 7. Efficiency VS Output Power

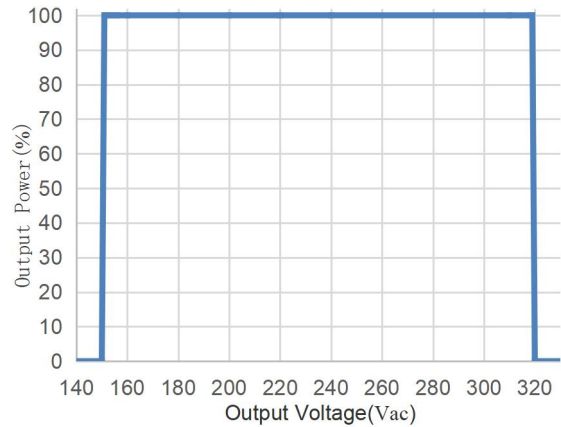


Fig 8. Output Power VS Output Voltage

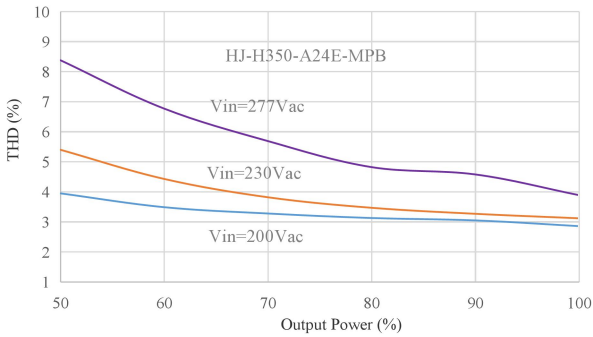


Fig 9. THD VS Output Power

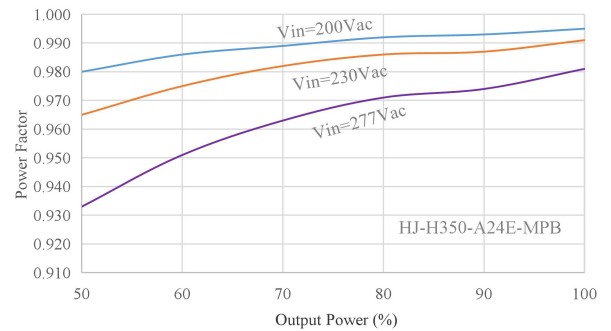


Fig 10. Power Factor VS Output Power

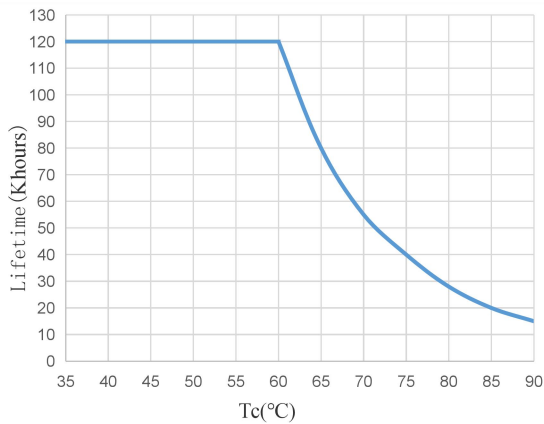


Fig 6. Lifetime VS Tc

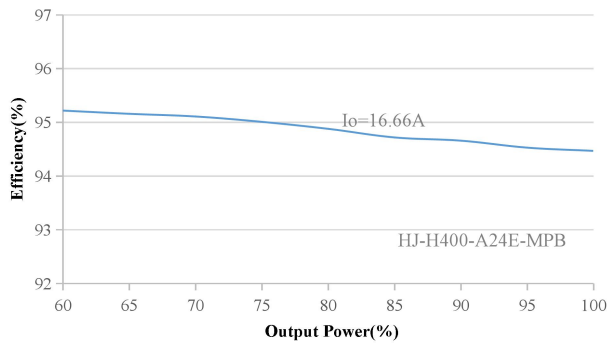


Fig 12. Efficiency VS Output Power

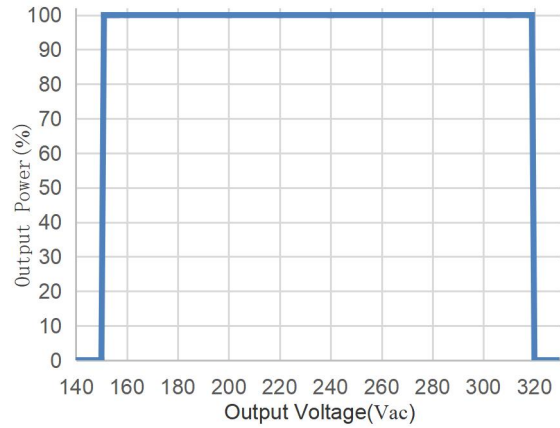


Fig 8. Output Power VS Output Voltage

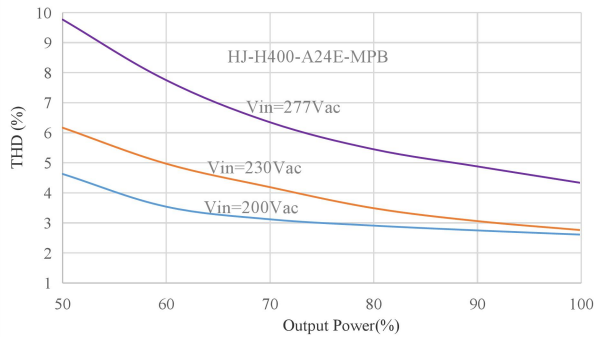


Fig 14. THD VS Output Power

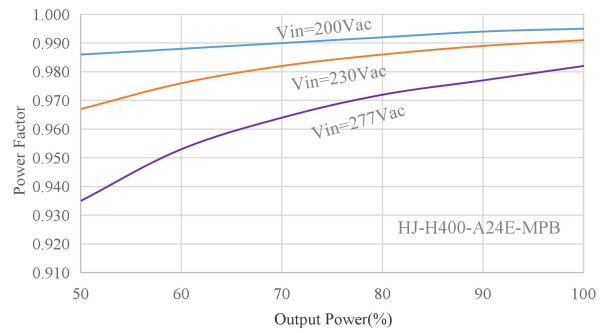


Fig 15. Power Factor VS Output Power

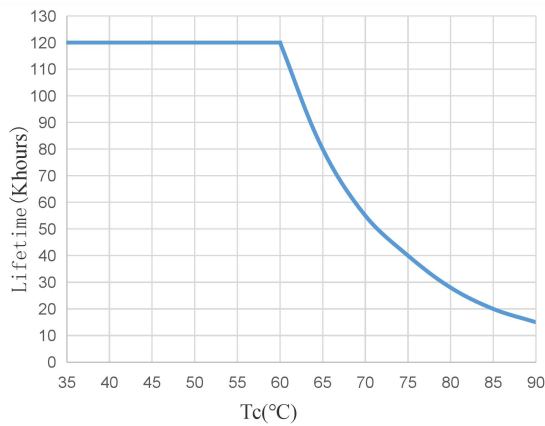


Fig 6. Lifetime VS Tc

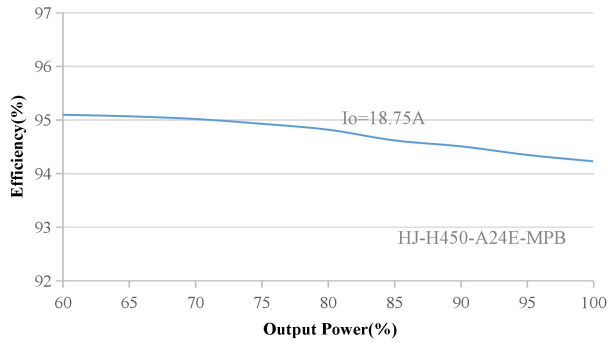


Fig 17. Efficiency VS Output Power

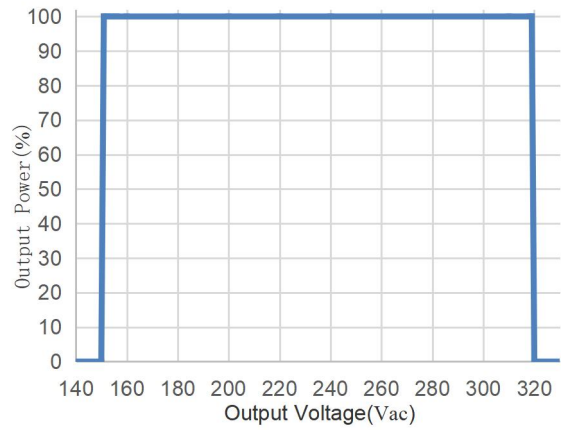


Fig 8. Output Power VS Output Voltage

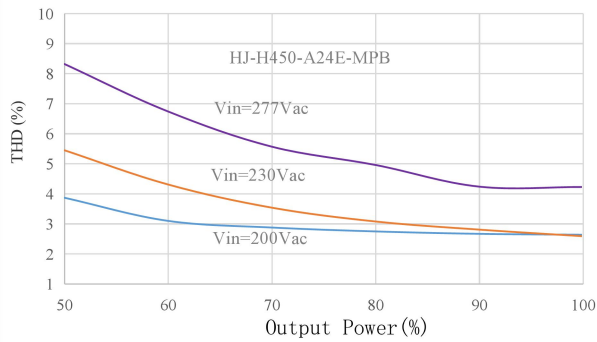


Fig19. THD VS Output Power

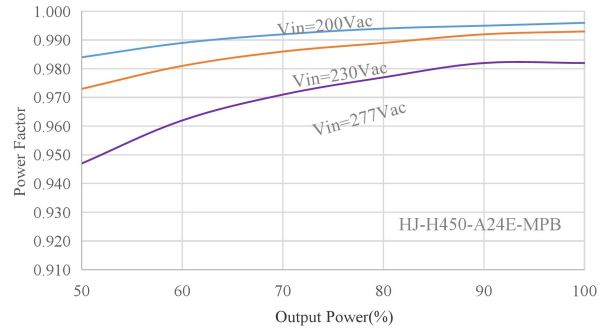


Fig20. Power Factor VS Output Power

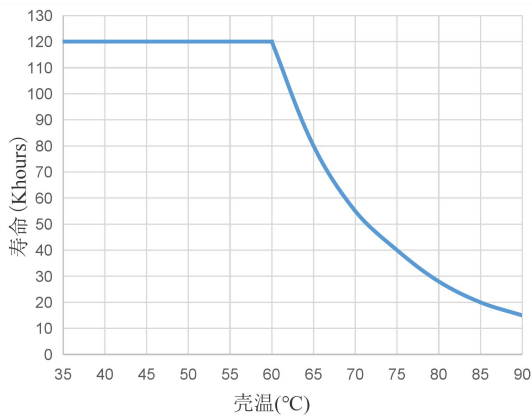
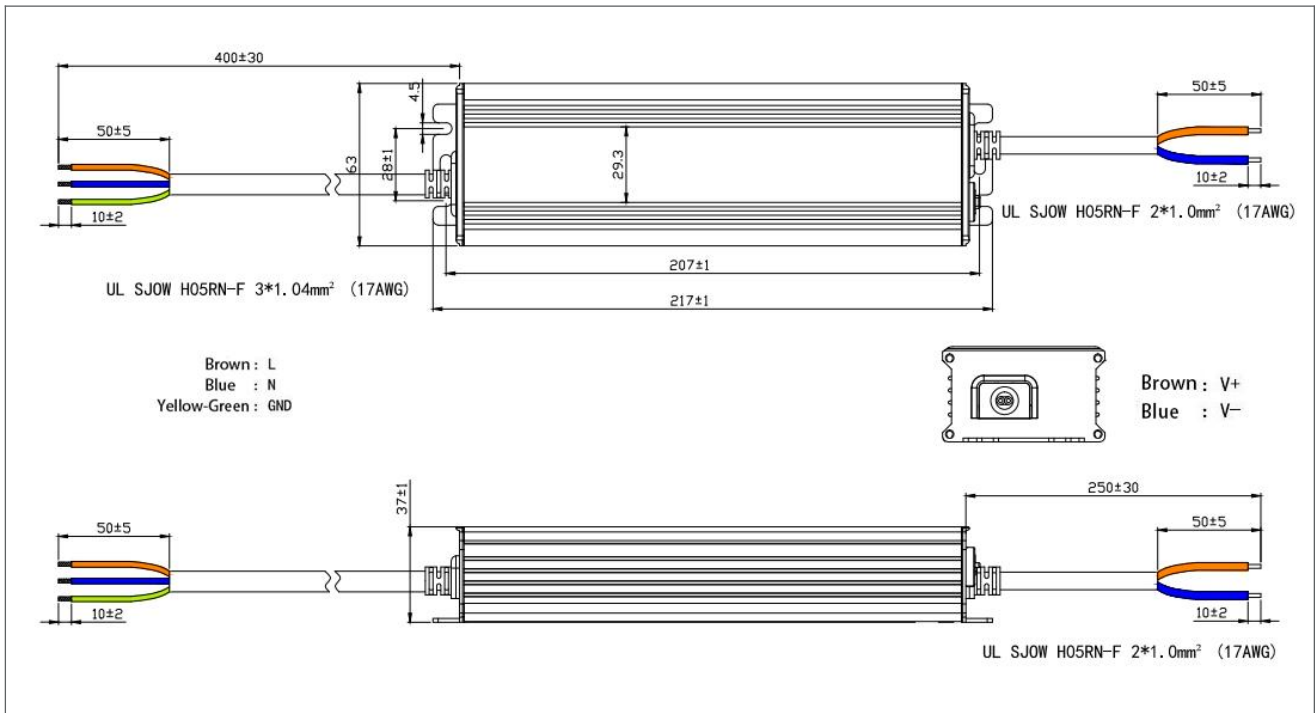


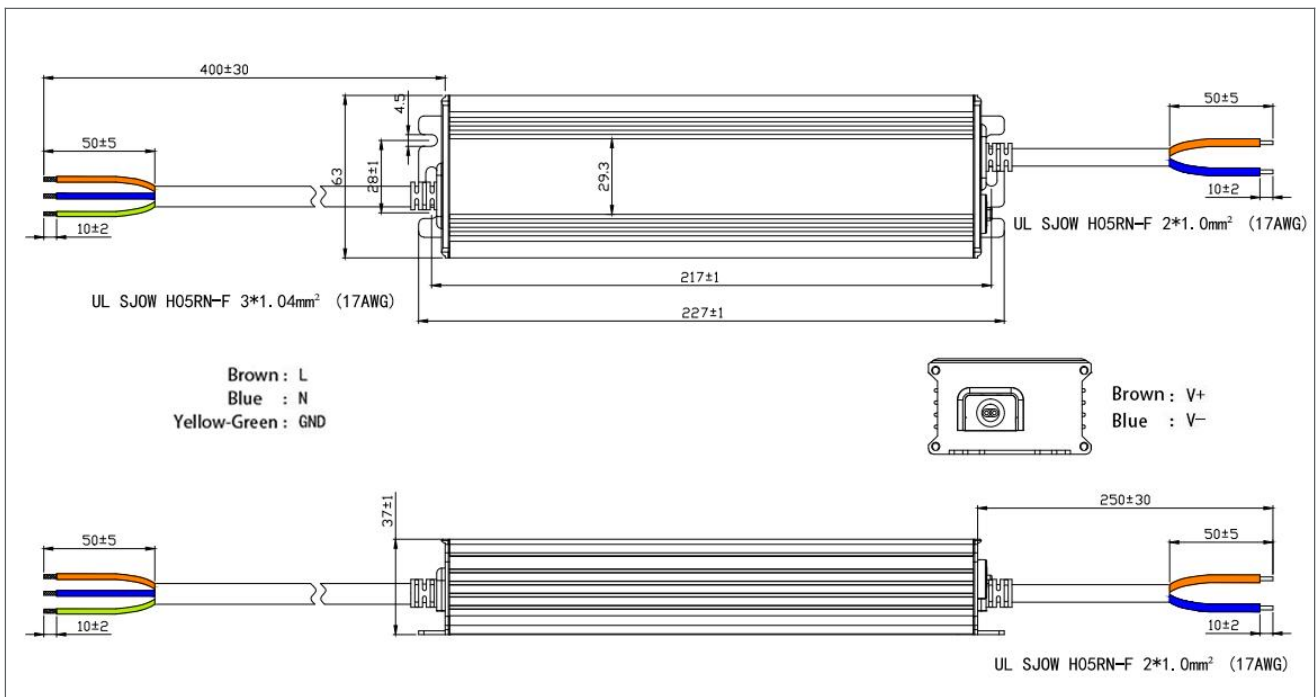
图21.寿命VS壳温

Mechanical Specification:

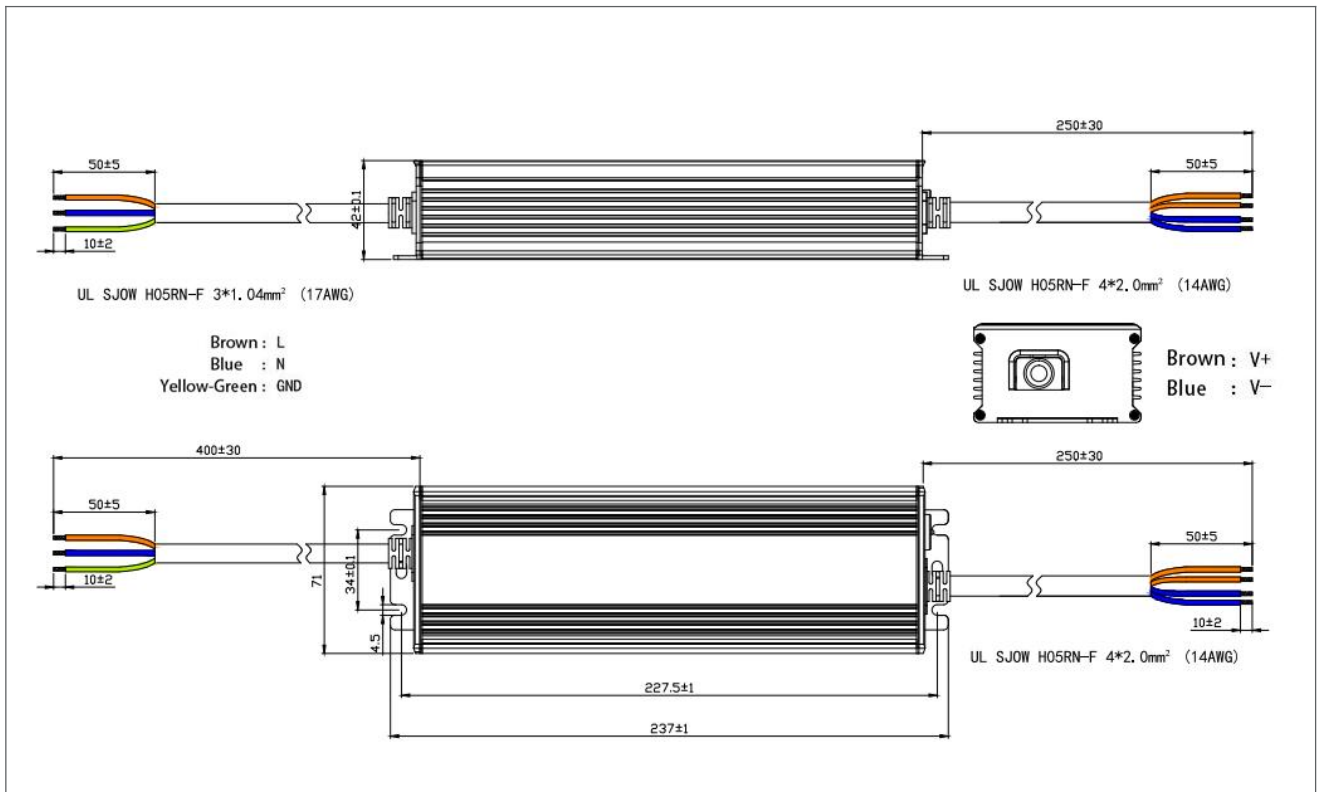
HJ-H300-A24E-MPB



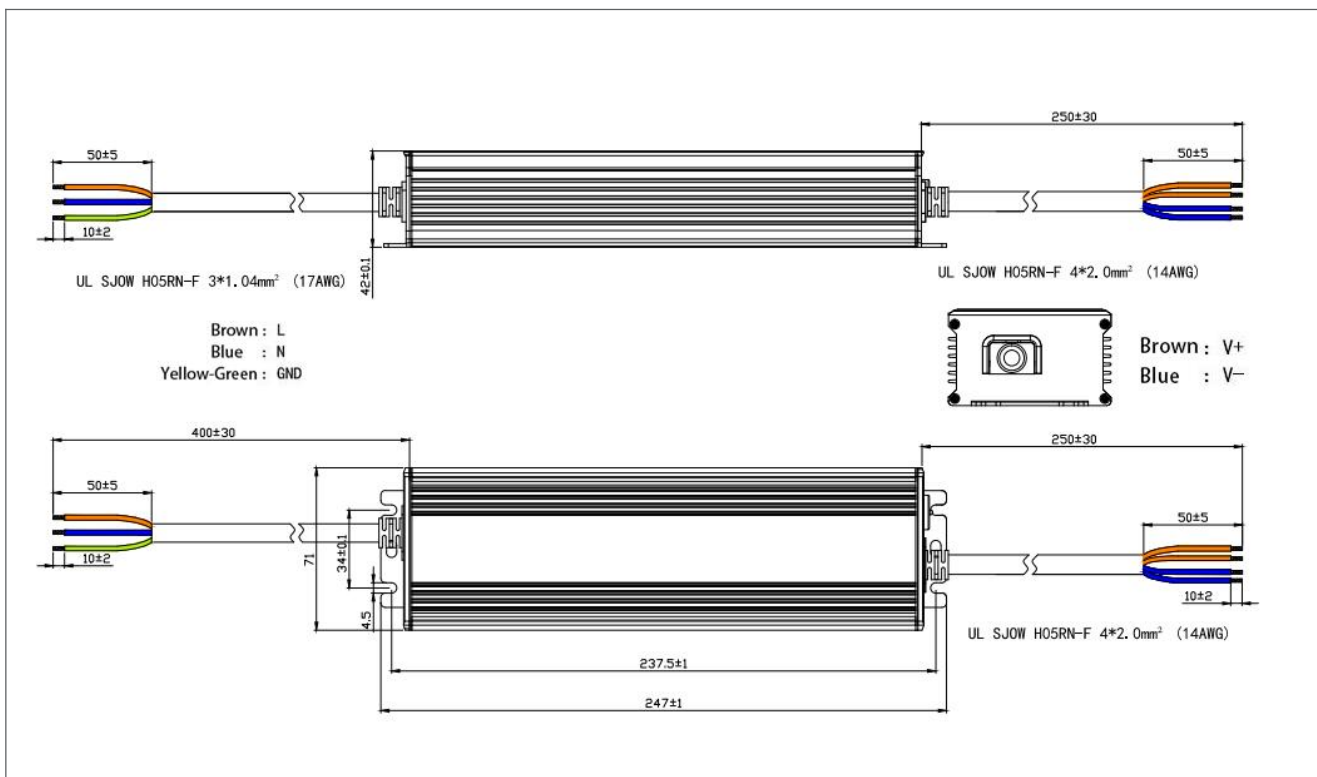
HJ-H350-A24E-MPB



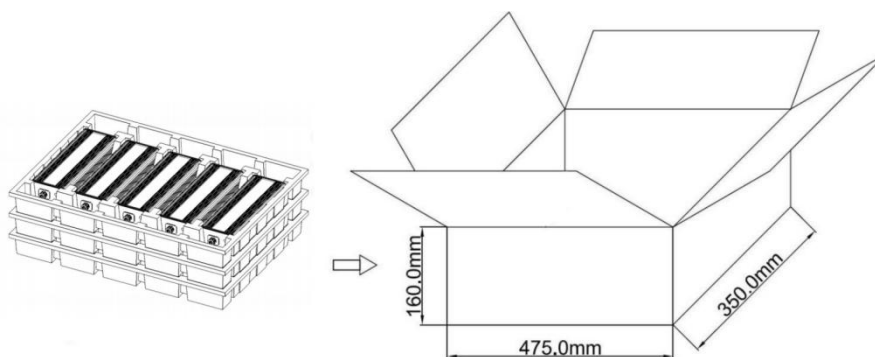
### HJ-H400-A24E-MPB



### HJ-H450-A24E-MPB



## Packaging:



Module	HJ-H300-A24E-MPB	HJ-H350-A24E-MPB	HJ-H400-A24E-MPB	HJ-H450-A24E-MPB
Unit Net Weight	1000g	1050	1300g	1370
Gross Weight	15Kg	16kg	19.5kg	20.5kg

## 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 15 units, arranged in 3 layers with 5 units per layer.
- 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.

## Update History:

Versions	Description of Update	Update Date	Note
V00	NEW	2024.01.15	

Edit	Audit	Approval
Zhukun Jun	Lisheng Pang	Jiyuan Chen