



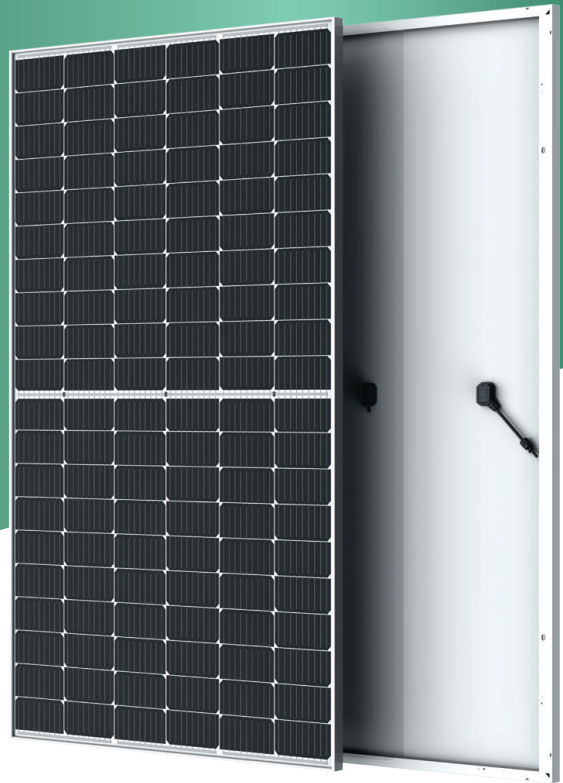
Mono Crystalline Half 120Cells 440-460 watt

MONO MODULE

Positive power tolerance of 0~+3%

ISO9001:2015 ISO14001:2015

IEC61215/IEC61730



MBB half-cut cell technology

Multi busbar solar cell adopts new technology to improve the efficiency of modules, offers a better aesthetic appearance, making it perfect for rooftop installation.



High Efficiency

Higher module conversion efficiency (up to 21.32%) benefit from half cellstructure (low resistance characteristic).



PID Resistance

Excellent Anti-PID performance guarantee limited power degradation for mass production.



Low-light Performance

Advanced glass and cell surface textured design ensure excellent performance in low-light environment.



Severe Weather Resilience

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).

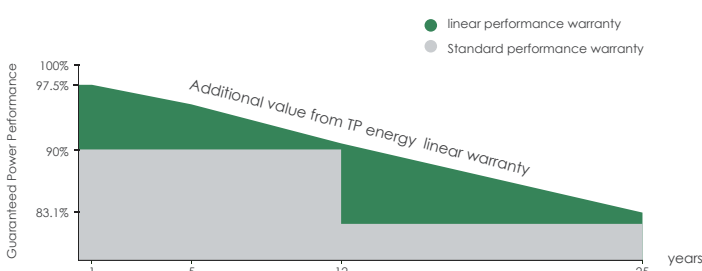


Durability Against Extreme Environmental Conditions

High salt mist and ammonia resistance certified by TUV Rheinland.

► Superior Warranty

TP ENERGY SOLAR PERFORMANCE WARRANTY



► Comprehensive Certificates

IEC61215/IEC61730/IEC61701/IEC62716

ISO 9001: Quality Management System

ISO 14001: Environmental Management System

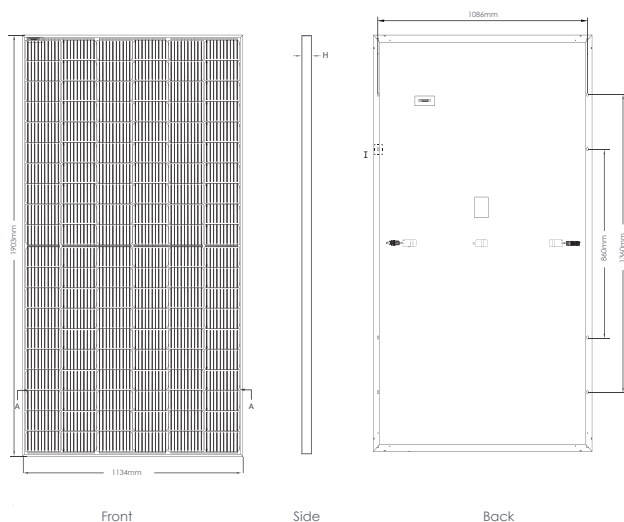
ISO14064: Greenhouse Gases Emissions Verification

OHSAS 18001: Occupation Health and Safety

Management System



DIMENSIONS OF PV MODULE(mm)



MECHANICAL DIAGRAMS

Cell Type	Mono PERC 182x182mm
No.of cells	6x10x2
Dimensions	1903x1134x30mm
Weight	24.2kg
Front Glass	3.2mmAnti-Reflection,Coating, High Transmission,Low Iron, Tempered Glass
Frame	Anodized Aluminium Alloy
J-Box	IP 68rated
Output Cables	TÜV 1x4.0mm, ² Length 300+/400- (mm) length can be customized

Electrical Characteristics

Module Type	TP120-440M/MB-8		TP120-445M/MB-8		TP120-450M/MB-8		TP120-455M/MB-8		TP120-460M/MB-8	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	440Wp	327Wp	445Wp	331Wp	450Wp	335Wp	455Wp	339Wp	460Wp	342Wp
Maximum Power Voltage (Vmp)	33.72V	31.39V	33.82V	31.56V	33.91V	31.73V	34.06V	31.91V	34.20V	32.07V
Maximum Power Current (Imp)	13.05A	10.43A	13.61A	10.49A	13.27A	10.55A	13.06A	10.61A	13.45A	10.67A
Open-circuit Voltage (Voc)	41.02V	38.72V	41.10V	38.79V	41.18V	38.87V	41.33V	39.01V	41.48V	39.15V
Short-circuit Current (Isc)	13.73A	11.09A	13.79A	11.14A	13.85A	11.19A	13.93A	11.25A	14.01A	11.32A
Module Efficiency STC (%)	20.39%		20.62%		20.85%		21.08%		21.32%	

Temperature Ratings

NMOT (Nominal Module Operating Temperature)	45°C (±2°C)
Temperature Coefficient of PMAX	- 0.350%/°C
Temperature Coefficient of Voc	- 0.280%/°C
Temperature Coefficient of Isc	+0.048%/°C

Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1000/1500VDC (IEC)
Max Series Fuse Rating	25A

Warranty

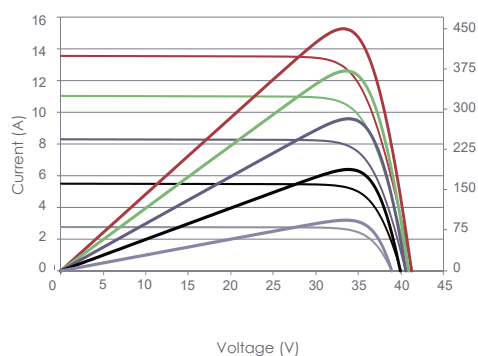
12 Years Product Workmanship Warranty
25 Years Power Warranty

Packaging Configuration

Modules per pallet:	35pcs
Modules per 40HQ container	840pcs

I-V-Curve

Current-Voltage Curve (TP120-450M/MB-8)



Temperature Dependence of Isc,Voc,Pmax

