



TS-M10/120H

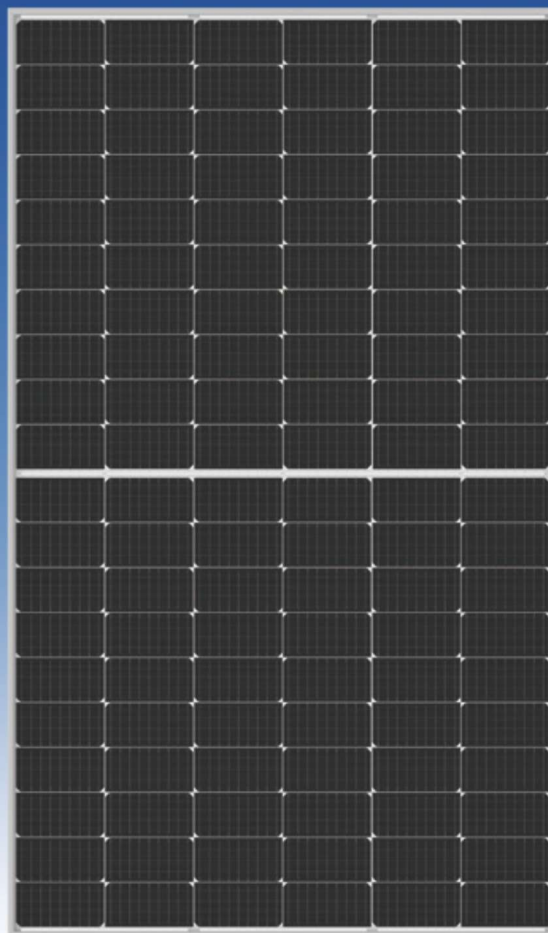
Monocrystalline Module

440-460W

Cell Type



9BB/10BB(182mm)



460W

Maximum Power Output

21.2%

Maximum Module Efficiency

0~+5W

Power Output Guarantee



Ideal choice for large scale ground installation



Special cutting and soldering technology leads to low hotspot risk



Optimized system performance due to module level current sorting

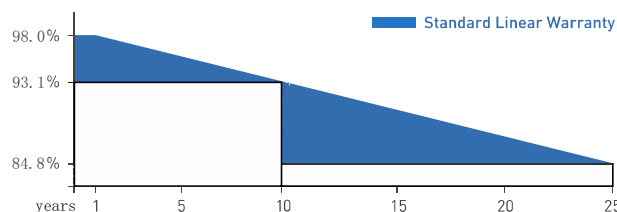


Highly transparent self-cleaning glass brings additional yield and easy maintenance

Deliver Reliable Performance Over Time

- manufacturer of crystalline silicon photovoltaic modules
- Fully automatic facility and world-class technology
- Rigorous quality control to meet the highest standard: ISO9001:2015, ISO14001: 2015 and OHSAS: 45001:2018
- 2×100% EL inspection ensuring defect-free modules

Linear Performance Warranty



12 Years Product Warranty 25 Years Linear Power Warranty

* Please refer to standard warranty for details

Product Certification



TS-M10/120H

Monocrystalline Module

440-460W

Electrical Specification (STC*)

Module		TS-M10/120H-440W	TS-M10/120H-445W	TS-M10/120H-450W	TS-M10/120H-455W	TS-M10/120H-460W
Maximum Power	P _{max} (W)	440	445	450	455	460
Maximum Power Voltage	V _{mp} (V)	33.72	33.82	33.91	34.06	34.20
Maximum Power Current	I _{mp} (A)	13.05	13.16	13.27	13.36	13.45
Open Circuit Voltage	V _{oc} (V)	41.02	41.10	41.18	41.33	41.48
Short Circuit Current	I _{sc} (A)	13.73	13.79	13.85	13.93	14.01
Module Efficiency	(%)	20.3	20.5	20.8	21.0	21.2
Power Output Tolerance	(W)	0~+5				
Measurement Tolerance	(%)	±3				

* Irradiance 1000W/m², Module Temperature 25°C, Air Mass 1.5

Electrical Specification (NOCT*)

Module		TS-M10/120H-440W	TS-M10/108H-445W	TS-M10/120H-450W	TS-M10/120H-455W	TS-M10/120H-460W
Maximum Power	P _{max} (W)	329	333	337	341	345
Maximum Power Voltage	V _{mp} (V)	31.66	31.82	31.98	32.06	32.25
Maximum Power Current	I _{mp} (A)	10.40	10.48	10.56	10.64	10.71
Open Circuit Voltage	V _{oc} (V)	38.30	38.41	38.57	38.67	38.74
Short Circuit Current	I _{sc} (A)	10.96	11.04	11.12	11.20	11.28

* Irradiance 800W/m², Ambient Temperature 20°C, Wind Speed 1m/s

Mechanical Data

Number of Cells	120 Cells (6×20)
Dimensions of Module L*W*H (mm)	1908×1134×35mm [75.11×44.64×1.38 inches]
Weight (kg)	24.0 kg
Glass	High transparency solar glass 3.2mm (0.13 inches)
Backsheet	White
Frame	Silver, anodized aluminium alloy
J-Box	IP68 Rated
Cable	4.0mm ² (0.006 inches ²), 300mm (11.8 inches)
Number of diodes	3
Wind/ Snow Load	Maximum static load (front): 3600Pa, safety factor 1.5 Maximum static load (back): 1600 Pa, safety factor 1.5
Connector	PV-H4, manufactured by Ningbo huayu Photovoltaic Technology Co., Ltd. Z4S-abcde, manufactured by Zerun Co., Ltd.

* For more details please check the installation manual

Temperature Ratings

Nominal Operating Cell Temperature [NOCT]	44±2°C
Temperature Coefficient of I _{sc}	+0.048%/°C
Temperature Coefficient of V _{oc}	-0.270%/°C
Temperature Coefficient of P _{max}	-0.350%/°C

Packaging Configuration

Module per box	31 pieces
Module per 40' container	744 pieces

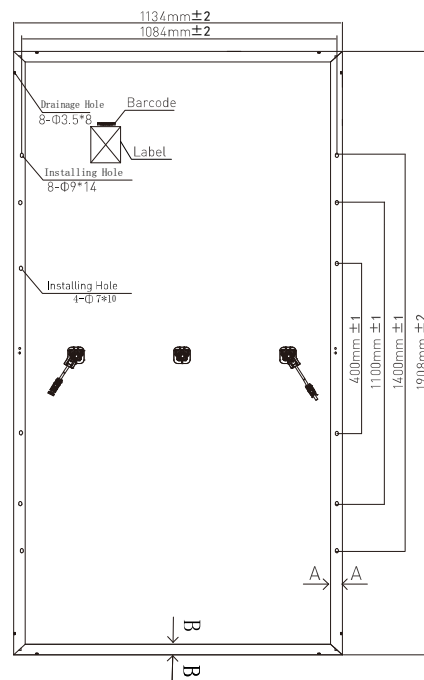
Maximum Ratings

Operational Temperature	-40~+85°C
Maximum System Voltage	1500V DC -(H)
Max Series Fuse Rating	25A

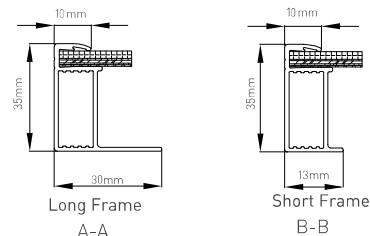
Other information

Country of Manufacture	Made in China
Fire Safety Class based on UL 790	Class C

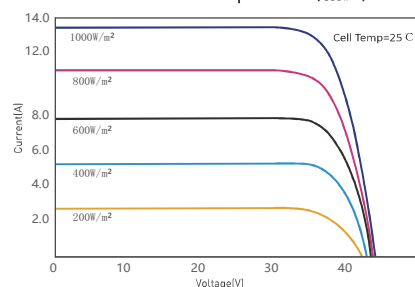
Module Dimension



Back View



I-V Curve at Different Temperature (455W)



I-V/P-V Curve at Different Irradiation (455W)

