

MT5N

440-460W MS460M-48HBH

N-Type HJT Black Frame Bifacial
Double-glass Solar Module

Qualidade Garantida

25-Year Warranty for Materials and Processing

30-Year Warranty for Extra Linear Power Output

23.02%

Max. Module Efficiency



HJT 3.0 Technology

Combining gettering process and double-sided $\mu\text{c-Si}$ to maximize cell efficiency and module power.

Up to 90% Bifaciality

Natural symmetrical bifacial structure bringing more energy yield from the backside.

Sealing with PIB based sealant

Stronger water resistance, greater air impermeability to extent module lifespan.

Higher reliability

Industrial leading product and performance warranty, ensuring modules' consistent outstanding performance.

High customer value

Higher container space utilization electively reduces the freight cost

Quality Management System and Product Certification

IEC61215/61730, IEC62804(PID), IEC61701(Salt).

IEC62716 (Ammonia), IEC60068-2-68(Sand).

ISO 9001:2015/quality management system.

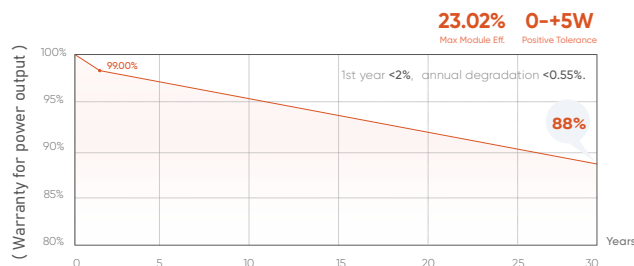
ISO 14001:2015/environmental management system.

ISO 45001:2018/occupation health safety management system.

ISO 50001:2011/energy management system.

IEC TS 62941-2016/PV industry quality management system.

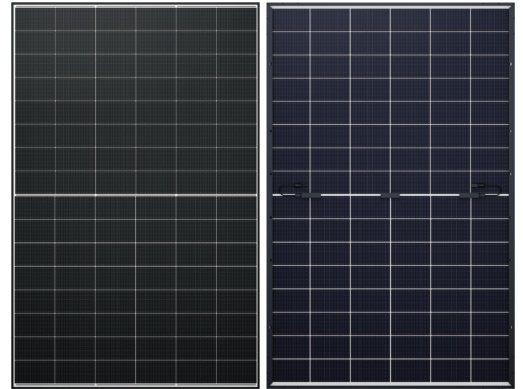
Quality Guarantee



Mechanical Characteristics

Solar Cells	HJT Mono 182 x 105mm
No. of Cells	96 (6x16)
Dimensions	1762 x 1134 x 30mm
Weight	23.0kg
Glass Thickness	(F)2.0mm anti-reflective solar glass (B) 2.0mm solar glass
Frame	Anodized aluminium alloy
Junction Box	IP68
Output Cables	4mm ² , 300mm ² in length, length can be customized /UV resistant
Connectors	MC4 original /MC4 compatible
Mechanical Load Test	5400Pa
Packaging	36pcs/box,936pcs/40'HQ

Product Image



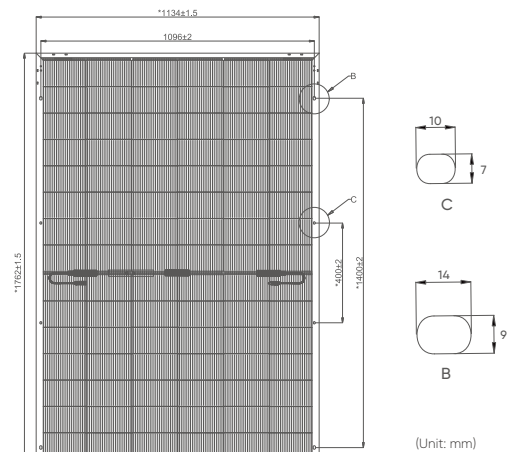
Operating Parameters

Operational Temperature	-40°C~+85°C
Power Output Tolerance	0~3%
Voc and Isc Tolerance	±3%
Maximum System Voltage	DC1500V (IEC/UL)
Maximum Series Fuse Rating	30A
Nominal Operating Cell Temperature	45±2°C

Temperature Ratings (NOCT*)

Temperature Coefficient of Isc	+0.040%/°C
Temperature Coefficient of Voc	-0.220%/C
Temperature Coefficient of Pmax	-0.260%/C

Drawings



Electrical Parameters (STC*)

Module Type: MS460M-48HBH	440	445	450	455	460
Maximum Power (Pmax/W)	440	445	450	455	460
Open Circuit Voltage (Voc/V)	36.68	36.95	37.22	37.47	37.72
Short Circuit Current (Isc/A)	15.26	15.30	15.36	15.41	15.45
Voltage at Maximum Power (Vmp/V)	30.43	30.66	30.88	31.10	31.30
Current at Maximum Power (Imp/A)	14.47	14.53	14.60	14.66	14.72
Module Efficiency (%)	22.02	22.27	22.52	22.77	23.02

*STC: Irradiance 1000 W/m², cell temperature 25°C, AM=1.5. Tolerance of Pmax is within ±3%.

Electrical Parameters (BSTC**)

Maximum Power (Pmax/W)	490	495	500	505	510
Open Circuit Voltage (Voc/V)	36.68	36.95	37.22	37.47	37.72
Short Circuit Current (Isc/A)	17.01	17.05	17.12	17.17	17.22
Voltage at Maximum Power (Vmp/V)	30.43	30.66	30.88	31.10	31.30
Current at Maximum Power (Imp/A)	16.11	16.15	16.19	16.24	16.30

**BSTC: Front side irradiation 1000W/m², back side reflection irradiation 135W/m², AM=1.5, ambient temperature 25°C