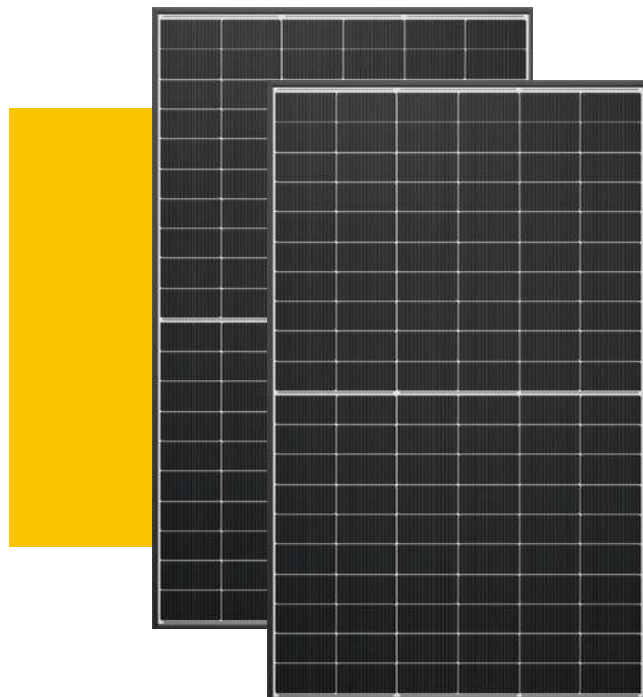


MSMDxxxM10NR-120BG

500-510W

N-Type cells (TOPCon) Cut Bifacial Dual
Glass Module Black Frame



Product Advantages



High module conversion efficiency

Module efficiency up to 22.5% achieved through advanced cell technology and manufacturing process



Lower operating temperature

Lower operating temperature and temperature coefficient increase the power output



Excellent weak light performance

More power output in weak light condition, such as cloudy, morning and sunset



Extended wind and snow load tests

Module certified to withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal)



IP68 junction box

High waterproof & dustproof level

22.5%

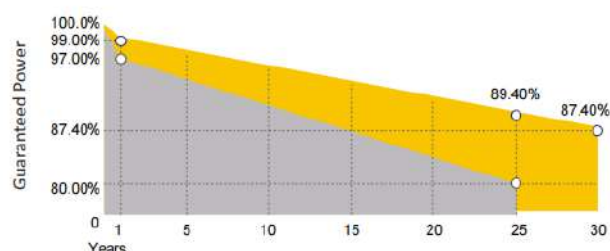
Module
efficiency

510W

Highest
power output

Performance Warranty

● Standard Module ● MSMD TOPCon Module



-1.00%

First year power degradation

-0.40%

Annual degradation

15 Years

Materials and
workmanship warranty

30 Years

Linear power
warranty

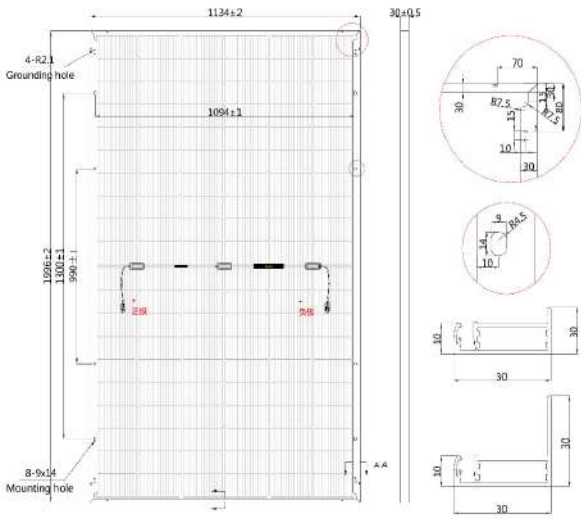
Product Certification



MSMDxxxM10NR-120BG

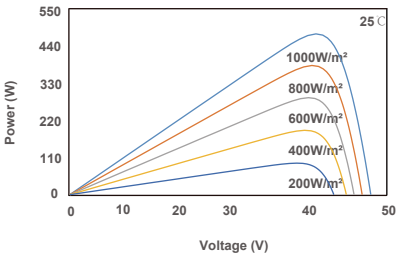
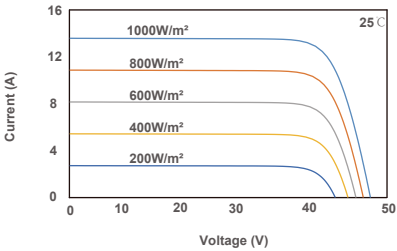
Engineering Drawings

Unit: mm



I-V CURVE

Current-Voltage & Power-Voltage Curve (500



Temperature Characteristics

Nominal Operating Cell Temp. (NOCT)	42 °C ± 2 °C
Temperature Coefficiency of Pmax	-0.29%/ °C
Temperature Coefficiency of Voc	-0.25%/ °C
Temperature Coefficiency of Isc	0.046%/ °C

Safety & Warranty

Safety Class	Class II
Product Warranty	15 yrs Workmanship
Performance Warranty	30 yrs Linear Warranty*

*1st year 99% , after 2nd year 0.40% annual degradation to year 30.

Electrical Characteristics (STC*)

MSMDxxxM10NR-120BG	500	505	510
Maximum Power (Pmax)	500W	505W	510W
Module Efficiency (%)	22.1%	22.3%	22.5%
Optimum Operating Voltage (Vmp)	36.9V	37.1V	37.3V
Optimum Operating Current (Imp)	13.55A	13.61A	13.67A
Open Circuit Voltage (Voc)	44.2V	44.4V	44.6V
Short Circuit Current (Isc)	14.14A	14.22A	14.29A
Operating Module Temperature	-40 to +85 °C		
Maximum System Voltage	DC1500V (IEC)		
Maximum Series Fuse	25A		
Power Tolerance	0~+5W		

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

Electrical Characteristics (BNPI*)

Maximum Power (Pmax)	545W	550W	555W
Optimum Operating Voltage (Vmp)	36.9	37.1	37.3
Optimum Operating Current (Imp)	14.77	14.82	14.88
Open Circuit Voltage (Voc)	44.2	44.4	44.6
Short Circuit Current (Isc)	15.75	15.82	15.89

*BNPI: Irradiance 1000W/m², module temperature 25 °C

NMOT **

Maximum Power (Pmax)	377W	381W	385W
Optimum Operating Voltage (Vmp)	34.3V	34.5V	34.7V
Optimum Operating Current (Imp)	10.99A	11.04A	11.10A
Open Circuit Voltage (Voc)	42.1V	42.3V	42.5V
Short Circuit Current (Isc)	11.38A	11.44A	11.51A

**NMOT: Irradiance 800W/m², ambient temperature 20 °C, AM=1.5, wind speed 1m/s

Mechanical Characteristics

Cell Type	N-Type TOPCon Monocrystalline 182*191.6mm
Cell Connection	120 (6×20)
Module Dimension	1996×1134×30 mm
Weight	28.5 kg
Junction Box	IP68
Output Cable	1200 mm or customized length
Connectors Type	MC4 compatible
Frame	Anodised aluminum alloy
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	2.0+2.0mm Back glass black glazed

Shipping Configurations

	HC
Container Length	40'
Pallets Per Container	22
Modules Per Pallet (pcs)	36
Modules Per Container (pcs)	792