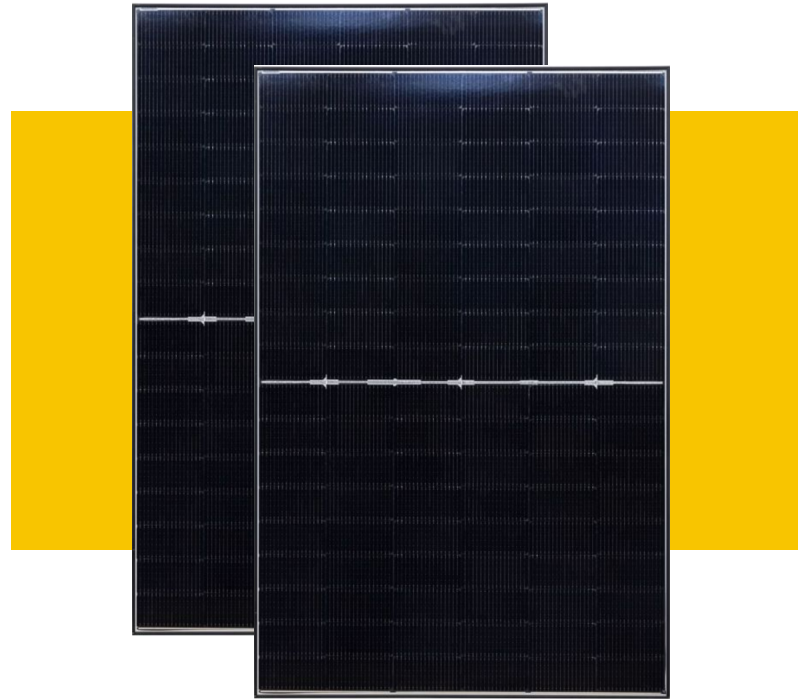


MSMDxxxM10N -108BG

415-440W

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



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%

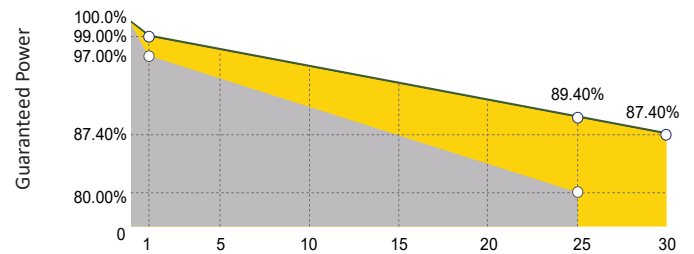
Module efficiency

440W

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

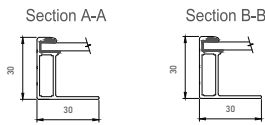
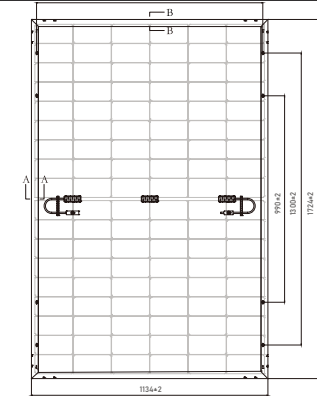
Product Certification



MSMDxxxM10N-108BG

Engineering Drawings

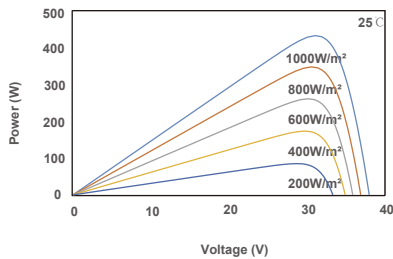
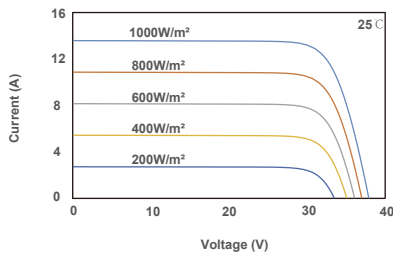
Unit: mm



Note mm

I-V CURVE

Current-Voltage & Power-Voltage Curve (430)



Temperature Characteristics

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

Safety & Warranty

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

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

Electrical Characteristics(STC*)

MSMDxxxM10N-108BG

Maximum Power (Pmax)	415	420	425	430	435	440
Module Efficiency (%)	21.2	21.5	21.7	22.0	22.3	22.5
Optimum Operating Voltage (Vmp)	31.9	32.1	32.3	32.5	32.7	32.9
Optimum Operating Current (Imp)	13.01	13.09	13.16	13.24	13.31	13.38
Open Circuit Voltage (Voc)	38.5	38.7	38.9	39.1	39.3	39.5
Short Circuit Current (Isc)	13.72	13.81	13.91	14.01	14.10	14.19
Operating Module Temperature	-40~+85°C					
Maximum System Voltage	1500V DC (IEC)					
Maximum Series Fuse	25 A					
Power Tolerance	0~+5W					

STC: Irradiance 1000W/m², module temperature 25°C, AM=1.5; *Measuring tolerance: ±3%

Electrical Characteristics(BNPI*)

Maximum Power (Pmax)	440	445	450	455	460	465
Optimum Operating Voltage (Vmp)	31.9	32.1	32.3	32.5	32.7	32.9
Optimum Operating Current (Imp)	13.79	13.86	13.93	14.00	14.07	14.14
Open Circuit Voltage (Voc)	38.5	38.7	38.9	39.1	39.3	39.5
Short Circuit Current (Isc)	14.47	14.56	14.64	14.73	14.82	14.91

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

NMOT **

Maximum Power (Pmax)	317	321	325	329	333	337
Optimum Operating Voltage (Vmp)	30.0	30.2	30.4	30.6	30.8	31.0
Optimum Operating Current (Imp)	10.57	10.63	10.70	10.76	10.82	10.88
Open Circuit Voltage (Voc)	36.4	36.6	36.8	37.0	37.2	37.4
Short Circuit Current (Isc)	11.10	11.18	11.25	11.33	11.41	11.48

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

Mechanical Characteristics

Cell Type	N-Type TOPCon Monocrystalline
Cell Connection	108 cells (6 x 18)
Module Dimension	1724x1134x30 mm
Weight	25.1 kg
Junction Box	IP 68 rated
Output Cable	1200mm
Connectors Type	MC4 compatible
Frame	30 mm Anodized Aluminium Alloy
Front Load	5400 Pa
Rear Load	2400 Pa
Glass Thickness	2.0+2.0mm Transparent back glass

Shipping Configurations

	HC
Container Length	40'
Pallets Per Container	26
Modules Per Pallet (pcs)	36
Modules Per Container (pcs)	936