



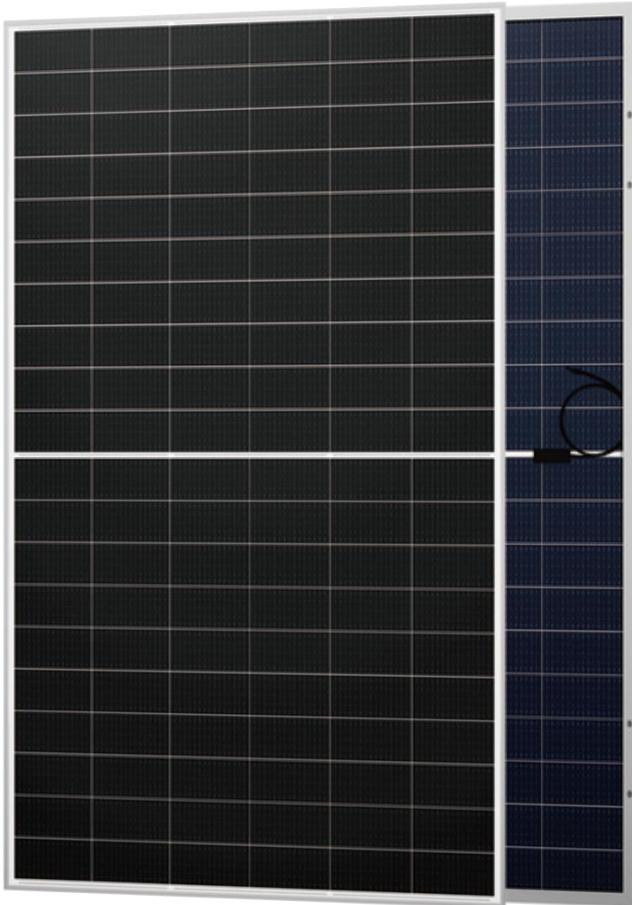
TOPCON Technology

1/2 Cut

Silver Frame Bifacial 645-660W

MS(645-660)MTDG-60HN
TOPCON 210mm 120 Cells

Advanced Solar Technology



Industry-leading Process Technology

Leading TOPCON cell/module design, taking into account both product performance and reliability.



Super Strong Power Generation Capacity

The most efficient mass-produced battery technology, with component efficiency reaching 23.32%.



G12 Battery Pack

Large-size silicon wafer modules effectively reduce LCOE costs and achieve higher returns.



High Reliability

Adapt to harsh installation environments, with 5400 Pa on the front and 2400 Pa on the back.



Strong Adaptability to Complex Environments

Excellent weak light response and lower temperature coefficient bring high power generation capacity around the clock.



Peace of Mind Warranty

Very low efficiency degradation (LID/PID) and longer service life.



23.32%

Maximum Efficiency

0 ~ +5W

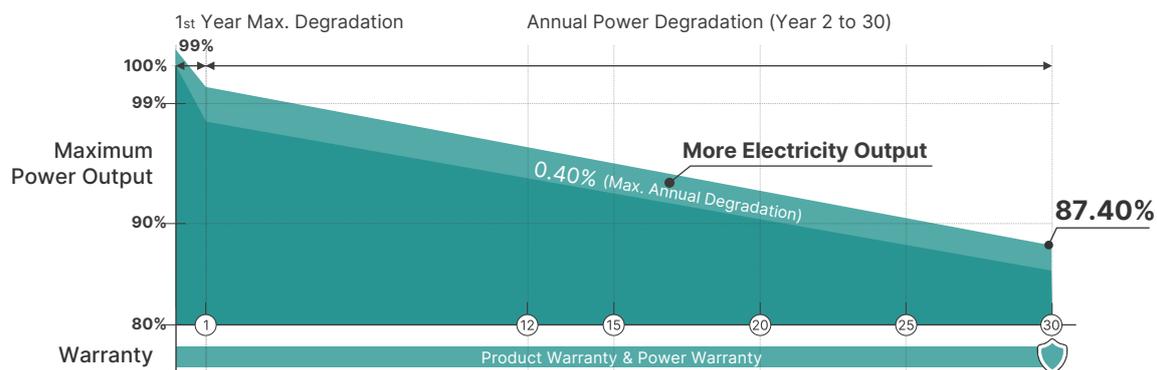
Positive Power Tolerance

30 Years

Product Warranty

30 Years

Power Warranty



Electrical Data(STC / NMOT)

Test Conditions	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Peak Power Watts- P_{MAX} (Wp)*	645	488.30	650	491.10	655	495.20	660	499.30
Power Tolerance- P_{MAX} (W)	0 ~ +5							
Maximum Power Voltage- V_{MPP} (V)	37.09	34.70	37.30	34.90	37.50	35.10	37.70	35.30
Maximum Power Current- I_{MPP} (A)	17.39	14.05	17.43	14.08	17.47	14.10	17.51	14.13
Open Circuit Voltage- V_{OC} (V)	44.05	41.80	44.28	41.90	44.52	42.20	44.75	42.40
Short Circuit Current- I_{SC} (A)	18.45	14.84	18.48	14.87	18.51	14.89	18.54	14.92
Module Efficiency η m (%)	22.79	22.79	22.97	22.97	23.14	23.14	23.32	23.32

* STC: (Electrical parameters at standard test conditions (STC:AM=1.5, 1000W/m², Cells Temperature 25°C)

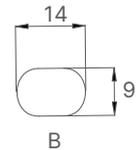
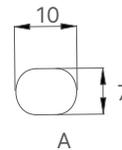
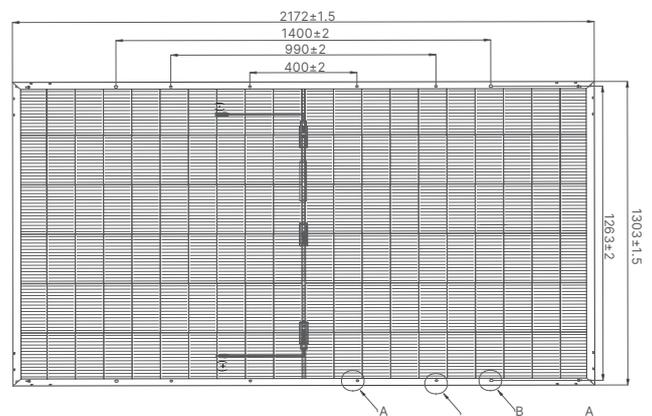
* NMOT: (Irradiance 800W/m², Ambient Temperature 20°C, AM1.5, Wind Speed 1m/s)

Mechanical Data

Solar Cells	Monocrystalline, TOPCON
Cell Orientation	120cells (6 x 20)
Module Dimensions	2172mm x 1303mm x 30mm
Weight	36kg
Front Glass	2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE
Back Glass	2.0mm, High Transmission, Heat Strengthened Glass
Frame	30mm Silver, Galvanized Steel or Powder-coated Steel Frame
J-Box	IP 68 Rated(3 Bypass Diodes)
Cables	Photovoltaic Technology Cable 4.0mm ² Portrait: N 300mm / P 300mm Length Can be Customized
Connector	MC4 Compatible

* Please refer to regional datasheet for specific connector.

Dimensions of PV Module (mm)



Temperature Ratings

NOCT(Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of P_{MAX}	-0.29% / °C
Temperature Coefficient of V_{OC}	-0.25% / °C
Temperature Coefficient of I_{SC}	0.045% / °C

* Do not connect fuse in combiner box with two or more strings in parallel connection.

Application Environment

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	(IEC)35A
Mechanical Performance	P 5400Pa / N 2400Pa

Warranty

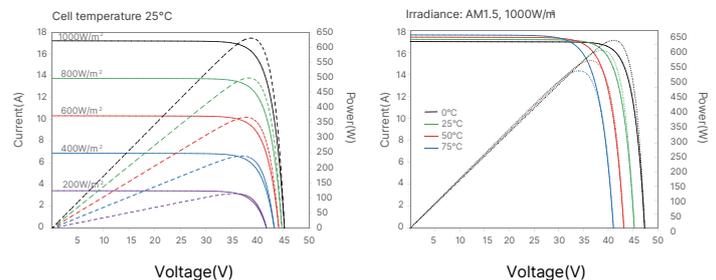
30 Years Product Warranty

30 Years Power Warranty

1% First Year Degradation

0.40% Annual Power Degradation

* Please refer to product warranty for details.



Packaging Configuration

Modules Per Pallet: 36 Pieces

Modules Per 40' Container: 648 Pieces