



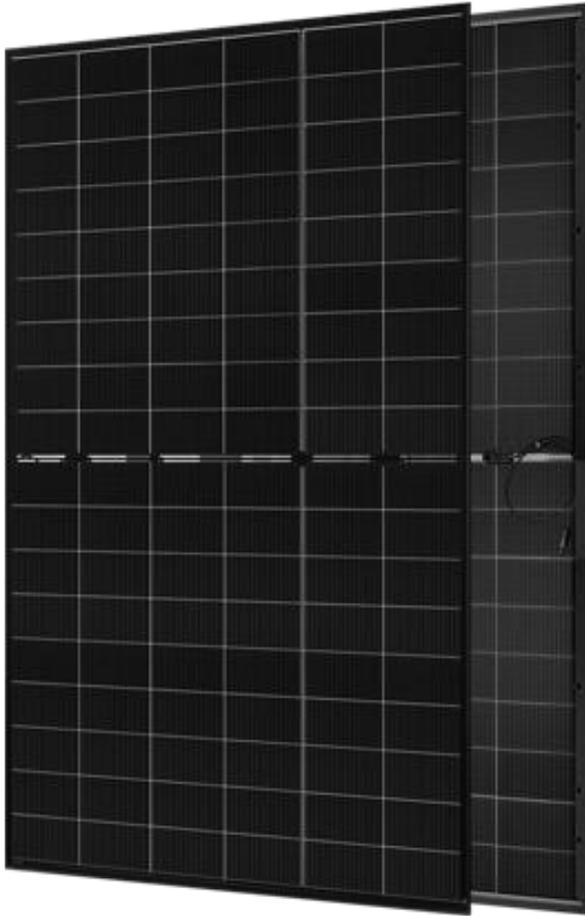
## TOPCON Technology

1/2 Cut

Full Black 490-530W

MS(490-530)MTDG-54HR  
TOPCON 210mm 108 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 23.87%.



### G12R Cell / Module

Innovative rectangular silicon wafer, effectively reduced LCOE and improved ROI.



### 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 bringing high power generation capacity around the clock.



### Peace of Mind Warranty

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

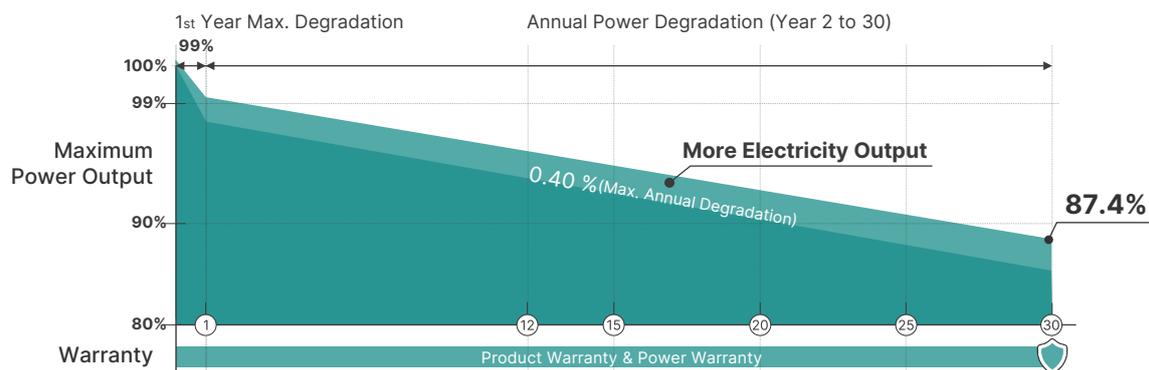


**23.87%**  
Maximum Efficiency

**0 ~ +5W**  
Positive Power Tolerance

**30 Years**  
Product Warranty

**30 Years**  
Power Warranty



## Electrical Data(STC)

Test Conditions	STC	STC	STC	STC	STC	STC	STC	STC	STC
Peak Power Watts- $P_{MAX}$ (Wp)*	490	495	500	505	510	515	520	525	530
Power Tolerance- $P_{MAX}$ (W)	0 ~ +5								
Maximum Power Voltage- $V_{MPP}$ (V)	32.65	32.85	33.05	33.25	33.45	33.65	33.85	34.05	34.25
Maximum Power Current- $I_{MPP}$ (A)	15.01	15.07	15.13	15.19	15.25	15.31	15.36	15.42	15.48
Open Circuit Voltage- $V_{OC}$ (V)	39.61	39.81	40.02	40.22	40.42	40.62	40.82	41.02	41.22
Short Circuit Current- $I_{SC}$ (A)	15.74	15.81	15.88	15.95	16.02	16.09	16.16	16.23	16.30
Module Efficiency $\eta_m$ (%)	22.05	22.27	22.50	22.72	22.95	23.18	23.41	23.64	23.87

\* STC: Air Mass AM1.5, Irradiance at 1000W/m<sup>2</sup>, Cell Temperature 25°C / Measuring tolerance: ±3%.

## Electrical Data(NOCT)

Test Conditions	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT	NOCT
Peak Power Watts- $P_{MAX}$ (Wp)*	371	375	379	383	388	393	398	403	408
Power Tolerance- $P_{MAX}$ (W)	0 ~ +5								
Maximum Power Voltage- $V_{MPP}$ (V)	30.29	30.47	30.67	30.85	31.03	31.21	31.39	31.57	31.75
Maximum Power Current- $I_{MPP}$ (A)	12.26	12.29	12.36	12.42	12.50	12.58	12.66	12.74	12.82
Open Circuit Voltage- $V_{OC}$ (V)	36.83	37.01	37.21	37.39	37.56	37.73	37.90	38.07	38.24
Short Circuit Current- $I_{SC}$ (A)	12.92	12.97	13.01	13.09	13.17	13.25	13.33	13.41	13.49

\* NOCT: Irradiance at 800W/m<sup>2</sup>, Cell Temperature 20°C, Wind Speed 1m/s / Measuring tolerance: ±3%.

## Mechanical Data

Solar Cells	Monocrystalline, TOPCON
Cell Orientation	108cells (6 x 18)
Module Dimensions	1960mm x 1134mm x 30mm
Weight	28.00kg
Front Glass	2.0mm, High Transmission, AR Coated Heat Strengthened Glass
Encapsulant material	POE
Back Glass	2.0mm, High Transmission, Heat Strengthened Glass
Frame	Galvanized Steel or Powder-coated Steel Frame
J-Box	IP 68 Rated(3 Bypass Diodes)
Cables	Photovoltaic Technology Cable 4.0mm <sup>2</sup> Portrait: N 1200mm / P 1200mm Length Can be Customized
Connector	MC4 Compatible

\* Please refer to regional datasheet for specific connector.

## Temperature Ratings

NOCT(Nominal Operating Cell Temperature)	44°C (±2°C)
Temperature Coefficient of $P_{MAX}$	-0.24% / °C
Temperature Coefficient of $V_{OC}$	-0.22% / °C
Temperature Coefficient of $I_{SC}$	0.04% / °C

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

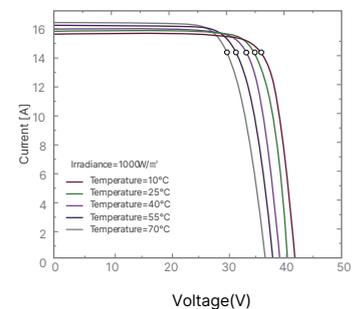
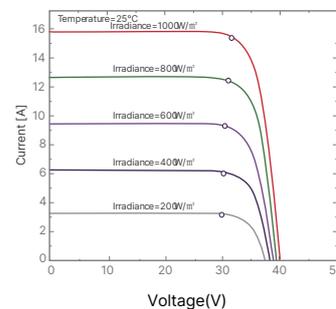
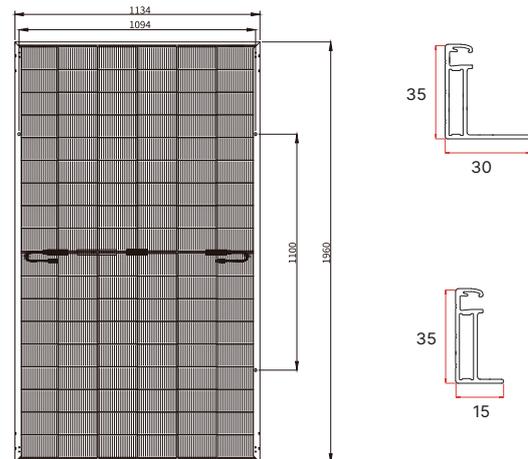
## Application Environment

Operational Temperature	-40 ~ +85°C
Maximum System Voltage	1500V DC
Max Series Fuse Rating	(IEC)30A
Mechanical Performance	P 5400Pa / N 2400Pa

## Packaging Configuration

Modules Per Pallet:	36 Pieces
Modules Per 40' Container:	864 Pieces

## Dimensions of PV Module (mm)



## 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.