

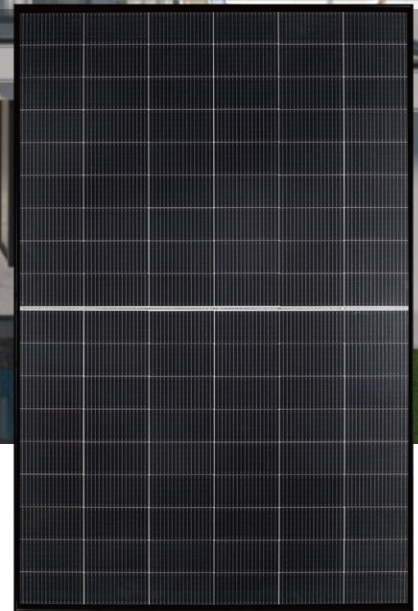
SG-54TW1D 440-460W

N-type TOPCon Solar Single-glass Module

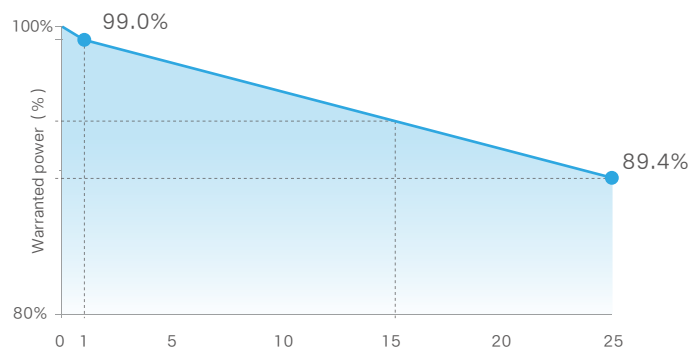
Maximum Efficiency 23.6%

Quality Certification

- IEC61215:2021 / IEC61730:2023
- IEC61701 / IEC62716 / IEC60068 / IEC62804
- ISO9001:2015: Quality Management System
- ISO14001:2015: Environment Management System
- ISO45001:2018: Occupational health and safety management systems



Product Warranty



25Year

Warranty for Materials and Processing

25Year

Warranty for Extra Linear Power Output

First Year Power Degradation <1%

Year 2-25 Power Degradation <0.4%

Product Performance



Superior Low Irradiation Performance

Higher power output in the morning and evening, cloudy days, haze and other low-light scenarios



Smaller Size

A lightweight design for convenient transportation and installation



Lower LCOE

Effectively reduce system BOS costs and shorten the return on investment cycle



Superior Temperature Coefficient

Generating 1%-2% more power than P-type modules in high temperature regions



Anti-PID Guarantee

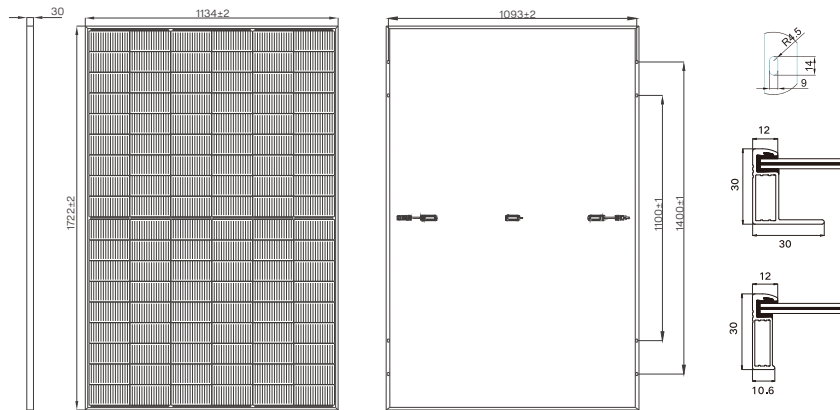
Minimizes the chance of degradation caused by PID phenomena through optimization of cell production technology and material control



Superior Mechanical Load Capacity

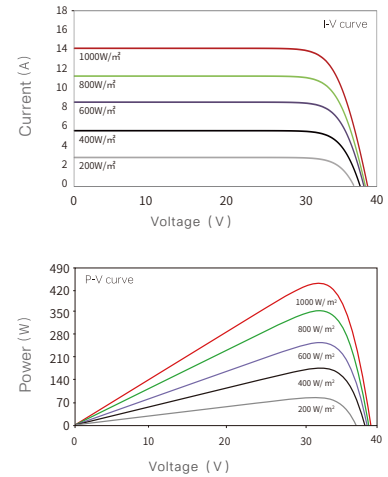
Heavy snow load up to 5400 Pa
wind load up to 2400 Pa

Engineering Drawings



Unit: mm

I-V and P-V Curves



Specifications (STC)

Maximum Power Pmax (W)	440	445	450	455	460
Voltage at Maximum Power (Vmp/V)	32.84	33.02	33.20	33.38	33.56
Current at Maximum Power (Imp/A)	13.40	13.48	13.56	13.64	13.72
Open Circuit Voltage (Voc/V)	39.51	39.71	39.91	40.11	40.31
Short Circuit Current (Isc/A)	14.07	14.15	14.23	14.31	14.39
Module Efficiency (%)	22.5	22.8	23.0	23.3	23.6
Power Tolerance	0~+3%		Maximum System Voltage	DC1500V	
Maximum Series Fuse Rating	30A		Operating Temperature	-40°C~+70°C	

STC: Irradiance 1000W/m², Cell Temperature 25°C, AM=1.5

Mechanical Characteristics

Cell Type	N- type mono-crystalline
Cell Orientation	108 (2 x 54)
Dimension	1722 x 1134 x 30mm
Weight	19.0kg
Glass	Single glass, 2.8mm coated tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68 rated
Output Cables	4mm², (+): 1200mm, (-): 1200mm or customized length
Connector Type	MC4-EVO2A/others
Mechanical Load	5400Pa (Front side) /2400Pa (Rear side)

Temperature Characteristics

Temperature Coefficients of Pmax	-0.29%/°C
Temperature Coefficients of Voc	-0.25%/°C
Temperature Coefficients of Isc	0.045%/°C

Packaging Configuration

Packing Detail	36 pcs/pallets, 72 pcs/stack, 936 pcs/ 40'HQ container
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