

SG-48TW4D-B

435-455W Full Black

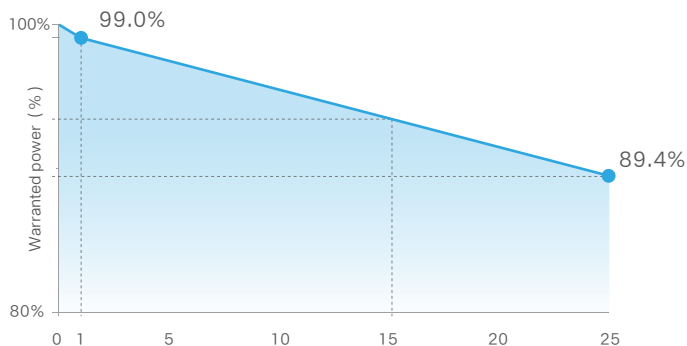
N-type TOPCon Solar Single-glass Module
Maximum Efficiency 22.8%

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



Outstanding Aesthetics

An elegant, all-black design that can be easily integrated into various roof types



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

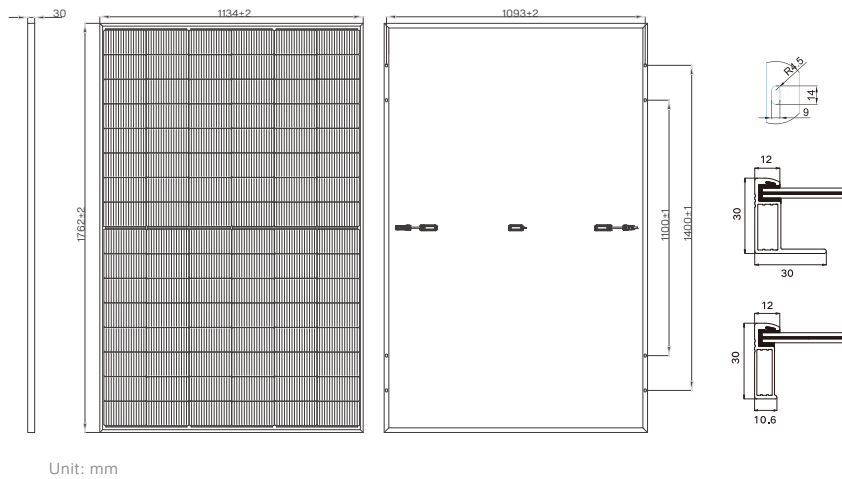
Minimizes the chance of degradation caused by PID phenomena through optimization of cell production technology and material control



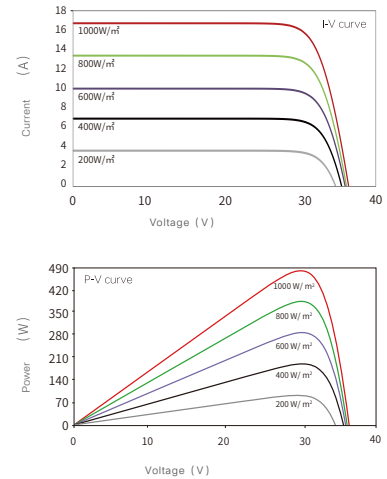
Superior Mechanical Load Capacity

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

Engineering Drawings



I-V and P-V Curves



Specifications (STC)

Maximum Power Pmax (W)	435	440	445	450	455
Voltage at Maximum Power (Vmp/V)	29.61	29.84	30.07	30.30	30.53
Current at Maximum Power (Imp/A)	14.71	14.76	14.81	14.86	14.91
Open Circuit Voltage (Voc/V)	35.56	35.76	35.96	36.16	36.36
Short Circuit Current (Isc/A)	15.49	15.54	15.59	15.64	15.69
Module Efficiency (%)	21.8	22.0	22.3	22.5	22.8
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	96 (2 x 48)
Dimension	1762 x 1134 x 30mm
Weight	19.5kg
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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