

SG-54TW1D-B

435-455W Full Black

N-type TOPCon Solar Single-glass Module

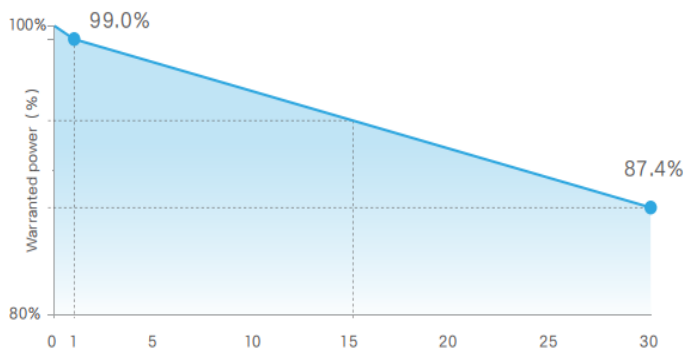
Maximum Efficiency 23.3%

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



25 Year

Warranty for Materials and Processing

30 Year

Warranty for Extra Linear Power Output

First Year Power Degradation <1%

Year 2-30 Power Degradation <0.4%

Power warranty applies at STC condition or only applies to the front side of the module

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



Non-destructive Laser Cutting Technology

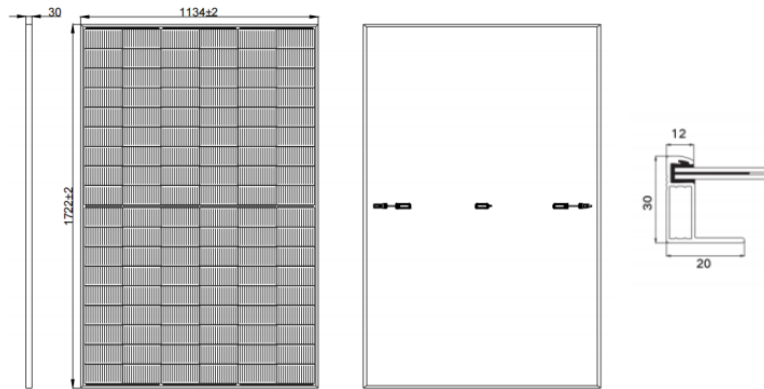
Achieving better cell strength, lower micro-cracks risk for better product reliability



Superior Mechanical Load Capacity

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

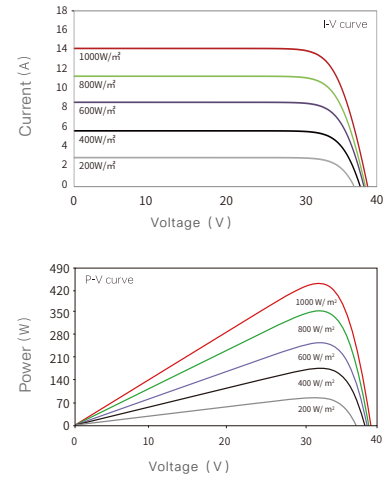
Engineering Drawings



Tolerance: Length: $\pm 2\text{mm}$ Width: $\pm 2\text{mm}$

I-V and P-V Curves

Temperature: $(25 \pm 2) ^\circ\text{C}$



Specifications (STC)

Module Type	SG-54TW1D-B-435	SG-54TW1D-B-440	SG-54TW1D-B-445	SG-54TW1D-B-450	SG-54TW1D-B-455
Maximum Power Pmax (W)	435	440	445	450	455
Voltage at Maximum Power (Vmp/V)	32.71	32.89	33.07	33.25	33.43
Current at Maximum Power (Imp/A)	13.30	13.38	13.46	13.54	13.62
Open Circuit Voltage (Voc/V)	39.40	39.60	39.80	40.00	40.20
Short Circuit Current (Isc/A)	13.94	14.02	14.10	14.18	14.26
Module Efficiency (%)	22.3	22.5	22.8	23.0	23.3
Pmax/Voc/Isc Tolerance	$\pm 3\%$		Maximum System Voltage	DC1500V	
Maximum Series Fuse Rating	30A		Operating Temperature	$-40^\circ\text{C} \sim +70^\circ\text{C}$	
Fire Rating	Class C		Power Sorting Tolerance	0~+5W	

STC: Irradiance 1000W/m^2 , 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	19.6kg
Glass	Single glass, 3.2mm coated tempered glass
Frame	Composite material
Junction Box	IP68 rated
Output Cables	4mm², (+): 1200mm, (-): 1200mm or customized length
Connector Type	Z4S-abcd(Zerun)/PV-ZH202B(Zhonghuan)/PV-HT03(x=0,1 or 2)(Haitian)/PV-KST4-EVO2A/xy, PV-KBT4-EVO2A/xy(Staubli)
Mechanical Load	+5400Pa (Front side) /-2400Pa (Rear side)

Temperature Characteristics

Temperature Coefficients of Pmax	$-0.30\%/^\circ\text{C}$
Temperature Coefficients of Voc	$-0.25\%/^\circ\text{C}$
Temperature Coefficients of Isc	$0.046\%/^\circ\text{C}$
Temperature Rating [T98]max	70°C

Packaging Configuration

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

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*Specifications included in this datasheet are subject to change without notice. Sungrow Renewables reserves the right of final interpretation.

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