

SG-48TT4D

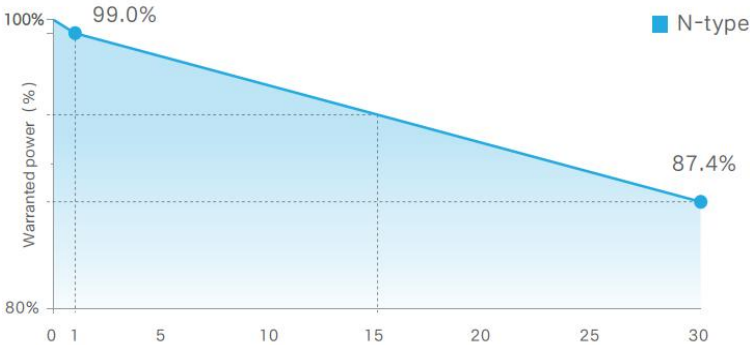
430-450W

N-type TOPCon Solar Single-glass
Double-sided Module
Maximum Efficiency 22.5%

Quality Certification



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 lightweighted design for convenient transportation and installation

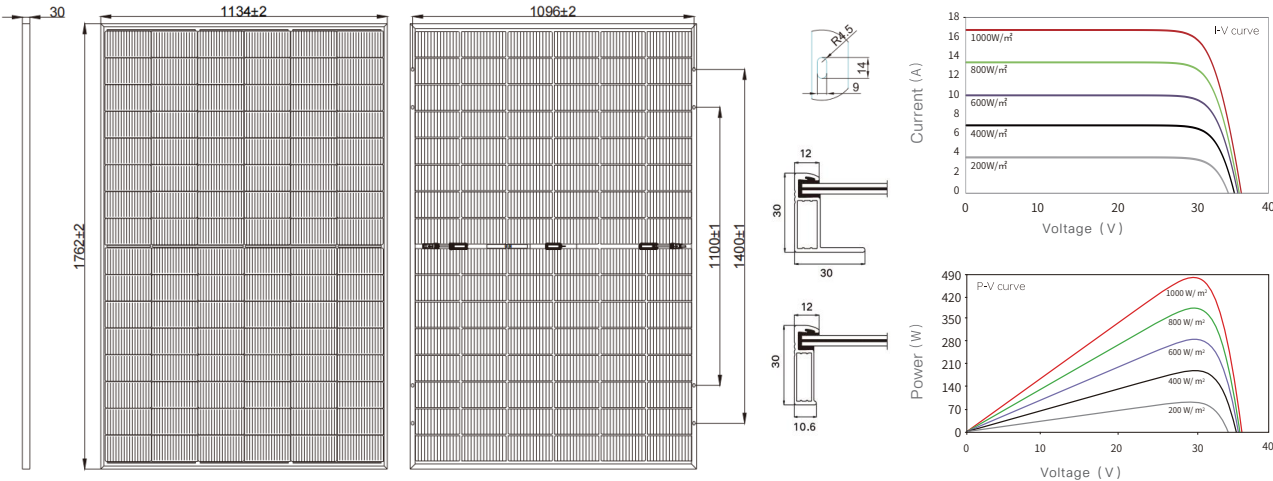
Higher Bifacial Factor
The rear power output and generation capacity are 20% and 3.5% higher than PERC, respectively

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



Electrical Characteristics

Module Type	SG-48TT4D - 430	SG-48TT4D - 435	SG-48TT4D - 440	SG-48TT4D - 445	SG-48TT4D - 450
Maximum Power Pmax (W)	430	435	440	445	450
Voltage at Maximum Power (Vmp/V)	29.36	29.54	29.72	29.90	30.08
Current at Maximum Power (Imp/A)	14.65	14.73	14.81	14.89	14.97
Open Circuit Voltage (Voc/V)	34.31	34.49	34.67	34.85	35.03
Short Circuit Current (Isc/A)	15.85	15.90	15.95	16.00	16.05
Module Efficiency (%)	21.5	21.8	22.0	22.3	22.5
Pmax/Voc/Isc Tolerance	±3%		Maximum System Voltage		DC1500V
Maximum Series Fuse Rating	30A		Operating Temperature		-40℃~+70℃
Fire Rating	Class C		Power Sorting Tolerance		0~+5W

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

Maximum Power Pmax (W)	473	479	484	490	495
Voltage at Maximum Power (Vmp/V)	29.36	29.54	29.72	29.90	30.08
Current at Maximum Power (Imp/A)	16.12	16.20	16.29	16.38	16.47
Open Circuit Voltage (Voc/V)	34.31	34.49	34.67	34.85	35.03
Short Circuit Current (Isc/A)	17.44	17.49	17.55	17.60	17.66
aBSI(A)	19.37	19.43	19.49	19.56	19.62
Pmax/Voc/Isc/aBSI Tolerance	±3%				
Bifaciality Coefficient	φVoc: 100±3 %, φIsc: 80±10 %, φPmax: 80±10 %				

BNPI: Irradiance Front 1000W/m², Rear 135W/m² Cell Temperature 25°C, AM=1.5
aBSI: Irradiance Front 1000W/m², Rear 300W/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	20.0kg
Glass	Single glass,3.2mm coated tempered glass
Frame	Anodized aluminum alloy
Junction Box	IP68 rated
Output Cables	4mm², (+): 300mm, (-): 200mm or customized length
Connector Type	Z4S-abcd(Zerun)/PV-ZH202B(Zhonghuan)/PV-HT03x(Haitian)

Mechanical Load +5400Pa / -2400Pa
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Temperature Characteristics

Temperature Coefficients of Pmax	-0.30%/℃
Temperature Coefficients of Voc	-0.25%/℃
Temperature Coefficients of Isc	0.046%/℃
Temperature Rating [T98]max	70℃

Packaging Configuration

Pallet Dimension	1792 x 1140 x 1249 mm
Packing Detail	36pcs/pallets, 72 pcs/stack, 936 pcs/ 40'HQ container

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