

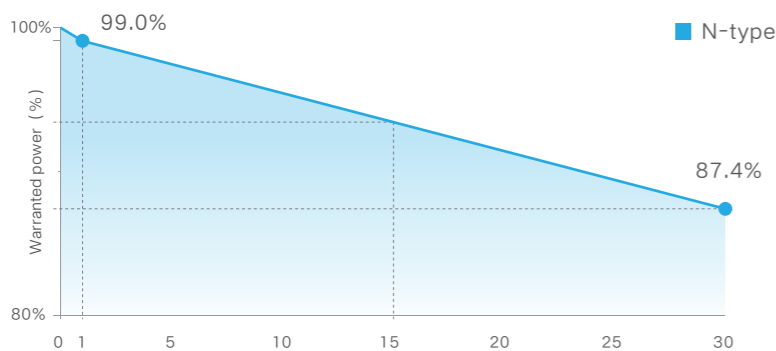
SG-48TG4D 440-450W

N-type TOPCon Solar Double Glass Bifacial 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 lightweight design for convenient transportation and installation

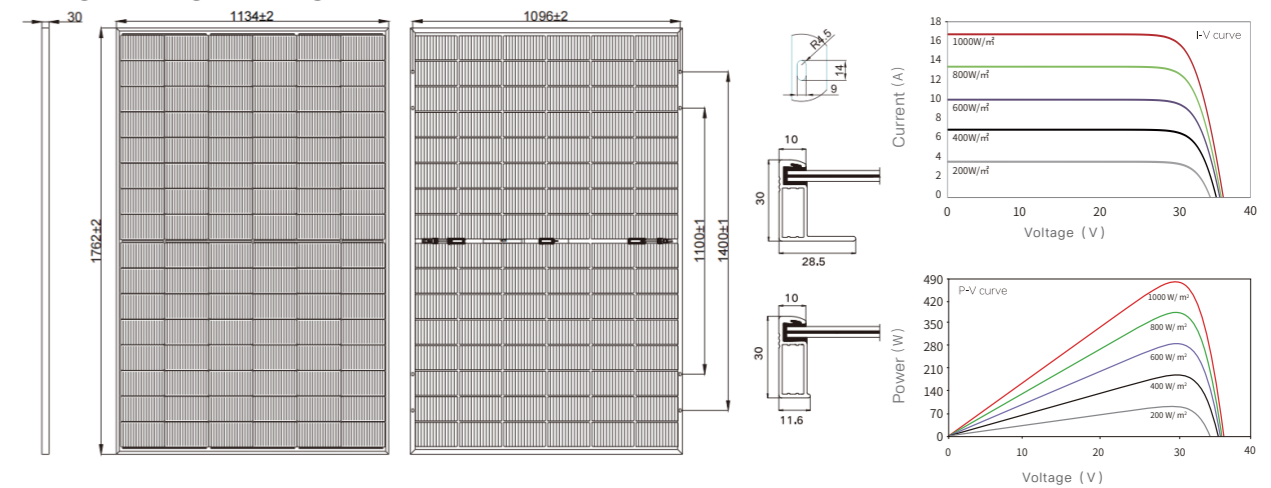
Higher Bifacial Factor
The rear power output and generation capacity are 20% and 3.5% higher than PERC, respectively

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-48TG4D -440 previous	SG-48TG4D -440 updated	SG-48TG4D -445 previous	SG-48TG4D -445 updated	SG-48TG4D -450 previous	SG-48TG4D -450 updated
Maximum Power Pmax (W)	440	440	445	445	450	450
Voltage at Maximum Power (Vmp/V)	29.72	29.59	29.90	29.86	30.08	30.13
Current at Maximum Power (Imp/A)	14.81	14.88	14.89	14.91	14.97	14.94
Open Circuit Voltage (Voc/V)	34.67	35.47	34.85	35.64	35.03	35.81
Short Circuit Current (Isc/A)	15.95	15.78	16.00	15.81	16.05	15.84
Module Efficiency (%)	22.0	22.0	22.3	22.3	22.5	22.5
Pmax/Voc/Isc Tolerance	±3%		Maximum System Voltage		DC1500V	
Maximum Series Fuse Rating	30A		Operating Temperature		-40°C~+70°C	
Fire Rating	Class C		Power Sorting Tolerance		0~+5W	

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

Note: Models may contain multiple ratings and installers/users shall verify the rating before installation.

Maximum Power Pmax (W)	484	484	490	490	495	495
Voltage at Maximum Power (Vmp/V)	29.72	29.59	29.90	29.86	30.08	30.13
Current at Maximum Power (Imp/A)	16.29	16.37	16.38	16.40	16.47	16.43
Open Circuit Voltage (Voc/V)	34.67	35.47	34.85	35.64	35.03	35.81
Short Circuit Current (Isc/A)	17.55	17.36	17.60	17.39	17.66	17.42
aBSI(A)	19.49	19.29	19.56	19.32	19.62	19.36
Pmax/Voc/Isc/aBSI Tolerance	±3%					
Bifaciality Coefficient	Voc: 100±3 %, Isc: 80±10 %, Pmax: 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	24.5kg
Glass	Dual glass, 2.0mm+2.0mm semi-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)/QC4.10-cds(QC Solar)
Mechanical Load	+5400Pa / -2400Pa

Temperature Characteristics

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

Packaging Configuration

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