

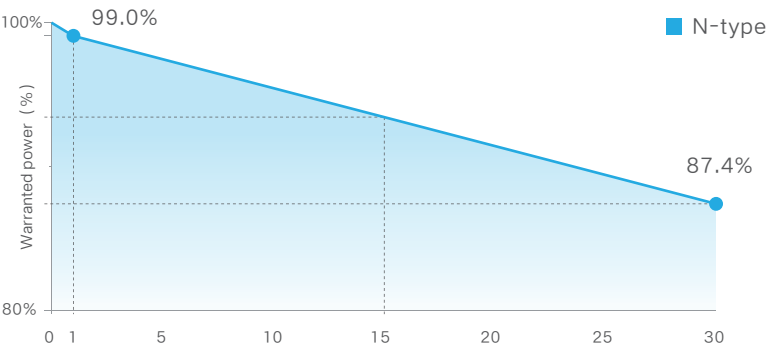
SG-48TG4D-B
445-465W

N-type TOPCon Solar Double Glass Bifacial Module
Maximum Efficiency 23.3%

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

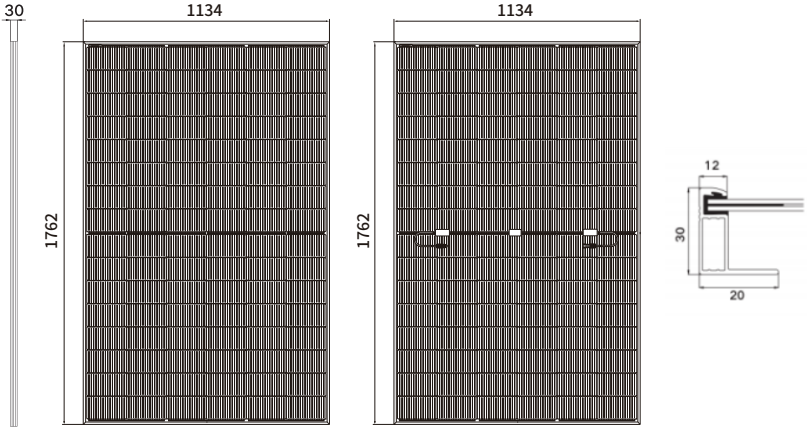
Higher Bifacial Factor
The rear power output and generation capacity are 20% and 3.5% higher than PERC, respectively

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

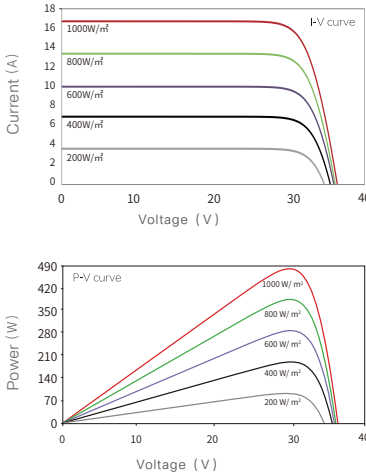
Superior Mechanical Load Capacity
Heavy snow load up to 5400 Pa
wind load up to 2400 Pa

Engineering Drawings



Tolerance: Length: ±2mm Width: ±2mm

I-V and P-V Curves Temperature: (25 ± 2) °C



Electrical Characteristics

Module Type	SG-48TG4D - B-445	SG-48TG4D - B-450	SG-48TG4D - B-455	SG-48TG4D - B-460	SG-48TG4D - B-465
Maximum Power Pmax (W)	445	450	455	460	465
Voltage at Maximum Power (Vmp/V)	29.86	30.13	30.40	30.67	30.94
Current at Maximum Power (Imp/A)	14.91	14.94	14.97	15.00	15.03
Open Circuit Voltage (Voc/V)	35.64	35.81	35.98	36.15	36.32
Short Circuit Current (Isc/A)	15.81	15.84	15.87	15.90	15.93
Module Efficiency (%)	22.3	22.5	22.8	23.0	23.3
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

Maximum Power Pmax (W)	490	495	501	506	512
Voltage at Maximum Power (Vmp/V)	29.86	30.13	30.40	30.67	30.94
Current at Maximum Power (Imp/A)	16.40	16.43	16.47	16.50	16.53
Open Circuit Voltage (Voc/V)	35.64	35.81	35.98	36.15	36.32
Short Circuit Current (Isc/A)	17.39	17.42	17.46	17.49	17.52
aBSI(A)	19.32	19.36	19.40	19.43	19.47
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	24.5kg
Glass	Dual glass, 2.0mm+2.0mm semi-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-HT03x(x=0,1or 2)(Haitian)/QC4.10-cds(QC Solar)/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%/°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