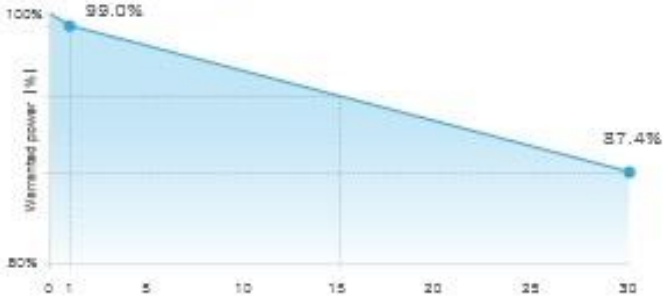
SUNGROW BiFacial 465w Black Module



| 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%

| 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

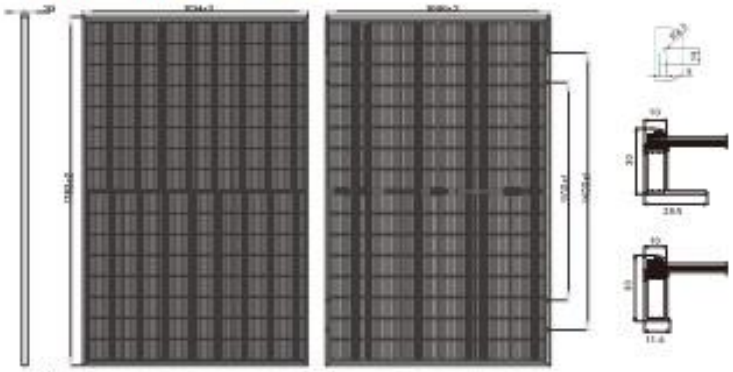
Higher Bifacial Factor
The rear power output and generation capacity are 20% and 3.5% higher than P-type, respectively

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

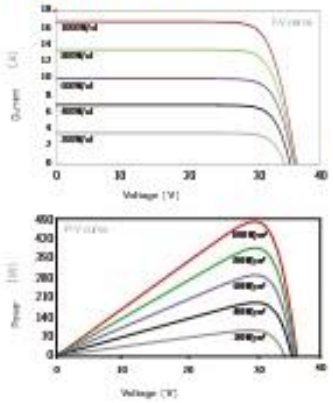
Superior Mechanical Load Capacity
Heavy snow load up to 5400 Pa
wind load up to 2400 Pa

Engineering Drawings



Unit: mm

I-V and P-V Curves



Specifications (STC)

Maximum Power Pmax (W)		465	
Voltage at Maximum Power (Vmp/V)		30.94	
Current at Maximum Power (Imp/A)		15.03	
Open Circuit Voltage (Voc/V)		36.32	
Short Circuit Current (Isc/A)		15.93	
Module Efficiency (%)		23.3	
Power Tolerance	0~+3%	Maximum System Voltage	DC1500V
Maximum Series Fuse Rating	30A	Operating Temperature	-40°C~+70°C
Bifacial Factor	80±5%		

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

Specifications (BNPI)

Maximum Power Pmax (W)		512	
Voltage at Maximum Power (Vmp/V)		30.94	
Current at Maximum Power (Imp/A)		16.53	
Open Circuit Voltage (Voc/V)		36.32	
Short Circuit Current (Isc/A)		17.52	

BNPI: Irradiance Front 1000W/m², Rear 135W/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	24.3kg
Glass	Dual glass, 2.0mm+2.0mm semi-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

SUNGROW