

Tier1

BloombergNEF



ISO 9001
ISO 45001

ISO 14001
OHSAS 18001

SA 8000



186.8R TOPCON BIFACIAL

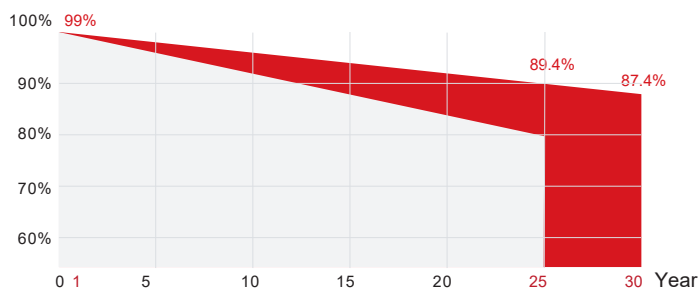
SPDGxxx-N120R1 0

470~500W

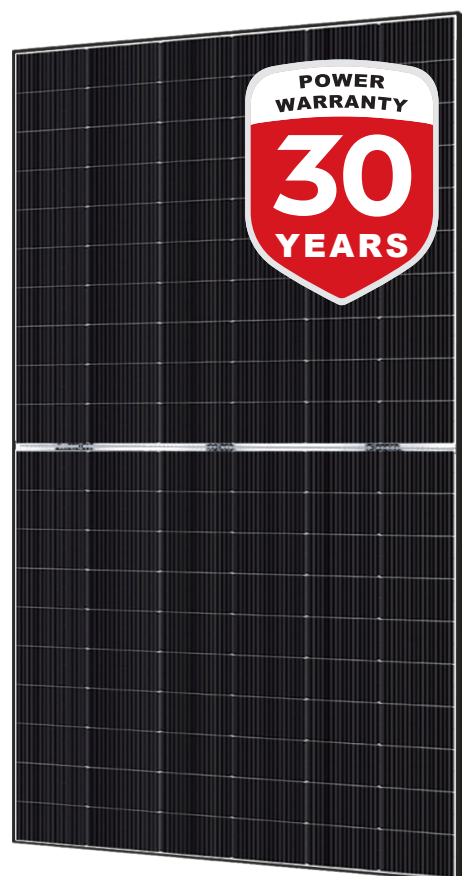
- Double glass
- Black frame
- Bifacial Transparent

25 Yr quality guarantee | 30 Yr power warranty

 SUNPRO TOPCon module (Additional value from 30-year warranty)
 Common module



*SUNPRO Standard tiered warranty



WARRANTY & GUARANTEE

Linear output power guarantee
25 years: 89.4% power output
30 years: 87.4% power output



WITHSTAND STRONG

Snow load **5400Pa**
Wind load **2400Pa**



PID RESISTANCE

Power positive tolerance
0~+5W.
The attenuation probability of
PID phenomenon is
minimized through battery
production technology
optimization and material control



R&D AND PRODUCTION

Advanced production line.
The leading solar cell
cutting process and **multi**
busbar design with
SUNPRO Technology.



HIGH EFFICIENCY

N-type , Components
have better reliability and
lower LID/LETID
attenuation. Efficiency can
reach **22.55%.** Excellent
low light performance.
Higher power output under
the conditions of haze,
overcast, etc.

Electrical parameters at standard test conditions (STC:AM=1.5, 1000W/m², Cells Temperature 25°C)

Typical type

	470W	475W	480W	485W	490W	495W	500W
Max power(Pmax)	470	475	480	485	490	495	500
Max power voltage(Vmp)	35.56	35.72	35.88	36.04	36.19	36.35	36.53
Max power current(Imp)	13.22	13.30	13.38	13.46	13.54	13.62	13.69
Open circuit voltage(Voc)	43.00	43.15	43.29	43.43	43.57	43.72	43.87
Short circuit current(Isc)	13.77	13.85	13.94	14.02	14.09	14.17	14.25
Module Efficiency(%)	21.20	21.43	21.65	21.88	22.10	22.33	22.55
Max system voltage	DC 1500V (TÜV)						
Maximum Series Fuse Rating	30A						

Electrical Characteristics with 15% Rear Side Power Gain

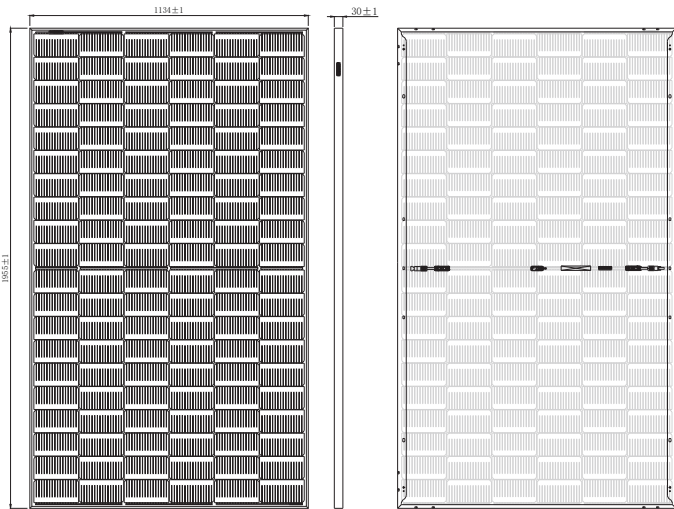
Front power Pmax/W	470W	475W	480W	485W	490W	495W	500W
Total power Pmax/W	540.5	546.25	552	557.75	563.50	569.25	575
Vmp/V(Total)	35.56	35.72	35.88	36.04	36.19	36.35	36.53
Imp/A(Total)	15.20	15.29	15.38	15.48	15.57	15.66	15.74
Voc/V(Total)	43.00	43.15	43.29	43.43	43.57	43.72	43.87
Isc/A(Total)	15.84	15.93	16.03	16.12	16.20	16.30	16.39

Electrical parameters at NMOT test conditions

(Irradiance 800W/m², Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s)

Typical type	470W	475W	480W	485W	490W	495W	500W
Max power(Pmax)	354.6	358.5	362.2	366.2	370	374	377.8
Max power voltage(Vmp)	33.7	33.9	34	34.2	34.4	34.5	34.7
Max power current(Imp)	10.51	10.57	10.64	10.71	10.77	10.83	10.9
Open circuit voltage(Voc)	40.6	40.7	40.9	41	41.2	41.3	41.5
Short circuit current(Isc)	11.10	11.16	11.24	11.30	11.36	11.42	11.48

DIMENSIONS AND STRUCTURE



Mechanical Data

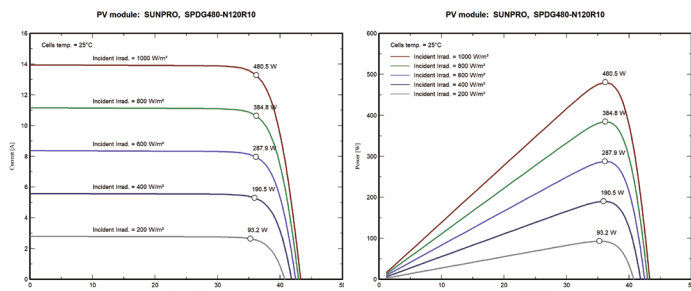
Dimensions	1955x1134x30mm
Weight	26.5kg
Glass	(F) 2.0mm ultra clear embossed double layer colorless glass (B) 2.0mm semi-tempered glass
Output cables	4mm ² , symmetrical lengths 1100mm
Connectors	MC4 compatible IP68
Cell type	N type Mono-Crystalline, 182mm×93.4mm
Number of cells	120cells (Half-Cell)

Temperature Characteristics

Packing Configuration

Temp.Coeff.of Isc(TK Isc)	0.046%/°C	Container	40'HQ
Temp.Coeff.of Voc(TK Voc)	-0.25%/°C	Pieces per pallet	31
Temp.Coeff.of Pmax(TK Pmax)	-0.30%/°C	Pallets per container	24
Operating temperature	-40~+85°C	Pieces per container	744
Normal operating cell temperature	45±2°C		

I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



Tests, Certifications and Warranties

Standard tests	IEC 61215, IEC 61730, IEC 61701, IEC 62716, PPP 58042
System certs	ISO 9001, ISO14001, ISO45001
Certifications	TÜV, CE, WEEE
Extreme wind and snow loads testing	Withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal)
Power tolerance	0~+5W
Junction box	IP 68
Warranties	25 years product warranty and 30 years 87.4% of power