

Tier1

BloombergNEF



ISO 9001
ISO 45001

ISO 14001
OHSAS 18001

SA 8000



210R TOPCON BIFACIAL

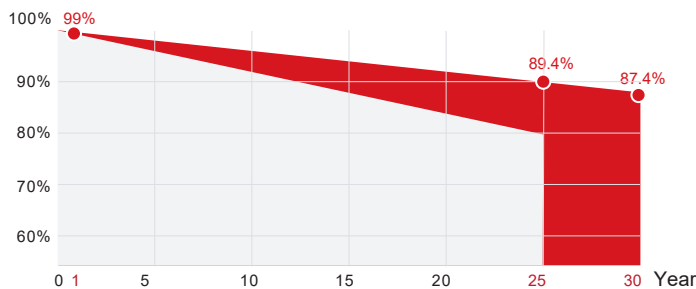
SPDGxxx-N108R12

480~505W

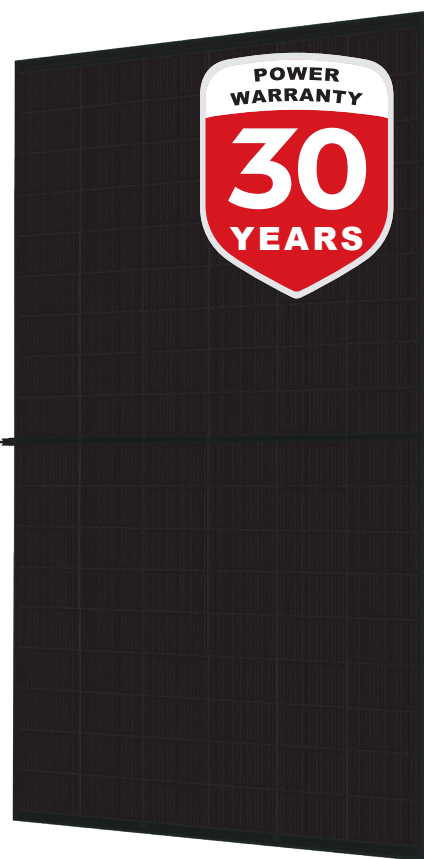
- Double glass
- Full black
- Silver frame
- Black frame

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.
Bifaciality>80%,effectively
improves backside power
generation.The leading
solar cell cutting process
and multi busbar design
with SUNPRO Technolo-
gy.



HIGH EFFICIENCY

N-type , Components have
better reliability and
lower LID/LETID attenuation.
Efficiency can reach
22.72%. 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

	480W	485W	490W	495W	500W	505W
Max power(Pmax)	480	485	490	495	500	505
Max power voltage(Vmp)	32.42	32.66	32.91	33.14	33.38	33.6
Max power current(Impp)	14.81	14.85	14.89	14.94	14.98	15.03
Open circuit voltage(Voc)	38.96	39.24	39.49	39.75	40.01	40.24
Short circuit current(Isc)	15.66	15.7	15.75	15.79	15.83	15.88
Module Efficiency(%)	21.60	21.82	22.05	22.27	22.50	22.72
Max system voltage	DC 1500V (TÜV)					
Maximum Series Fuse Rating	30A					

Electrical Characteristics with 15% Rear Side Power Gain

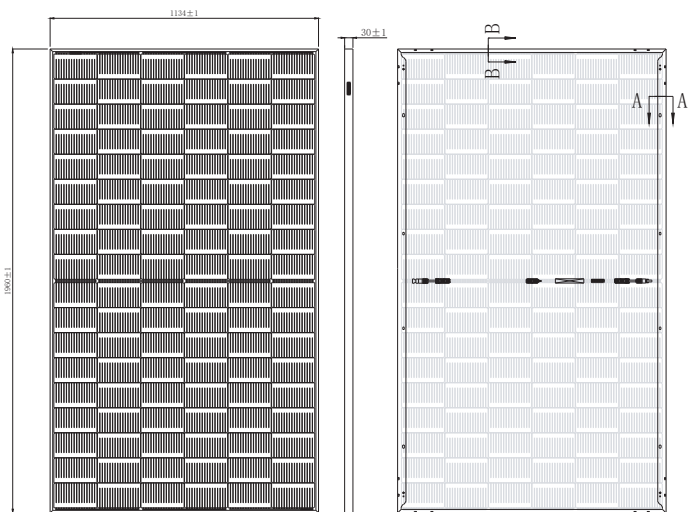
Front power Pmax/W	480W	485W	490W	495W	500W	505W
Total power Pmax/W	552	557.75	563.5	569.25	575	580.75
Vmp/V(Total)	32.42	32.66	32.91	33.14	33.38	33.60
Impp/A(Total)	17.03	17.08	17.12	17.18	17.23	17.28
Voc/V(Total)	38.96	39.24	39.49	39.75	40.01	40.24
Isc/A(Total)	18.01	18.06	18.11	18.16	18.20	18.26

Electrical parameters at NMOT test conditions

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

Typical type	480W	485W	490W	495W	500W	505W
Max power(Pmax)	361.8	365.9	370	374	378.1	382.2
Max power voltage(Vmp)	30.40	30.70	30.90	31.10	31.40	31.60
Max power current(Impp)	11.89	11.93	11.97	12.01	12.04	12.08
Open circuit voltage(Voc)	36.80	37.10	37.40	37.60	37.90	38.10
Short circuit current(Isc)	12.61	12.64	12.68	12.72	12.75	12.79

DIMENSIONS AND STRUCTURE



Mechanical Data

Dimensions	1960×1134×30mm
Weight	26.6 kg
Glass	(F)2.0mm ultra clear embossed double layer colorless glass (B)2.0mm black mesh semi-tempered glass
Output cables	4mm ² , symmetrical lengths 1100mm
Connectors	MC4 compatible IP68
Cell type	Mono-Crystalline, N type Bifacial, 105mm×182.2mm
Number of cells	108cells (Half-Cell)

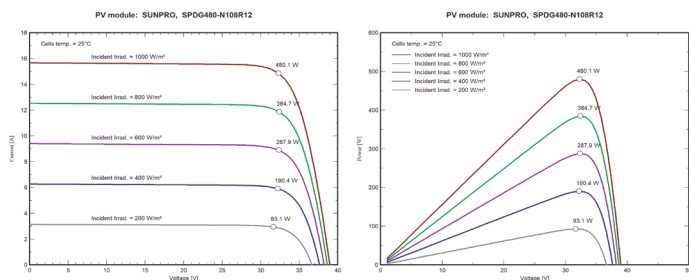
Temperature Characteristics

Temp.Coeff.of Isc(TK Isc)	0.045%/°C
Temp.Coeff.of Voc(TK Voc)	-0.25%/°C
Temp.Coeff.of Pmax(TK Pmax)	-0.30%/°C
Operating temperature	-40~+85°C
Normal operating cell temperature	45±2°C

Packing Configuration

Container	40'HQ
Pieces per pallet	36
Pallets per container	24
Pieces per container	864

I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



Tests, Certifications and Warranties

Standard tests	IEC 61215, IEC 61730
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