

Tier1

BloombergNEF



ISO 9001 ISO 14001 SA 8000
ISO 45001 OHSAS 18001



M12 TOPCON BIFACIAL

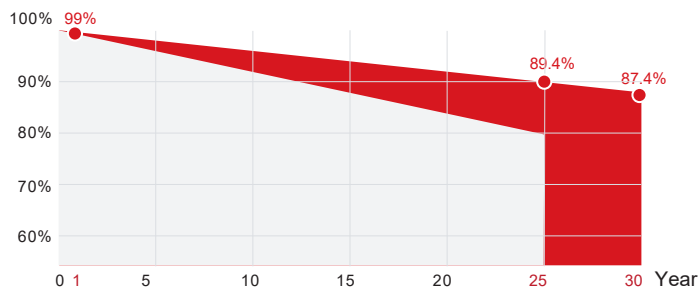
SPDGxxx-N132M12

685~710W

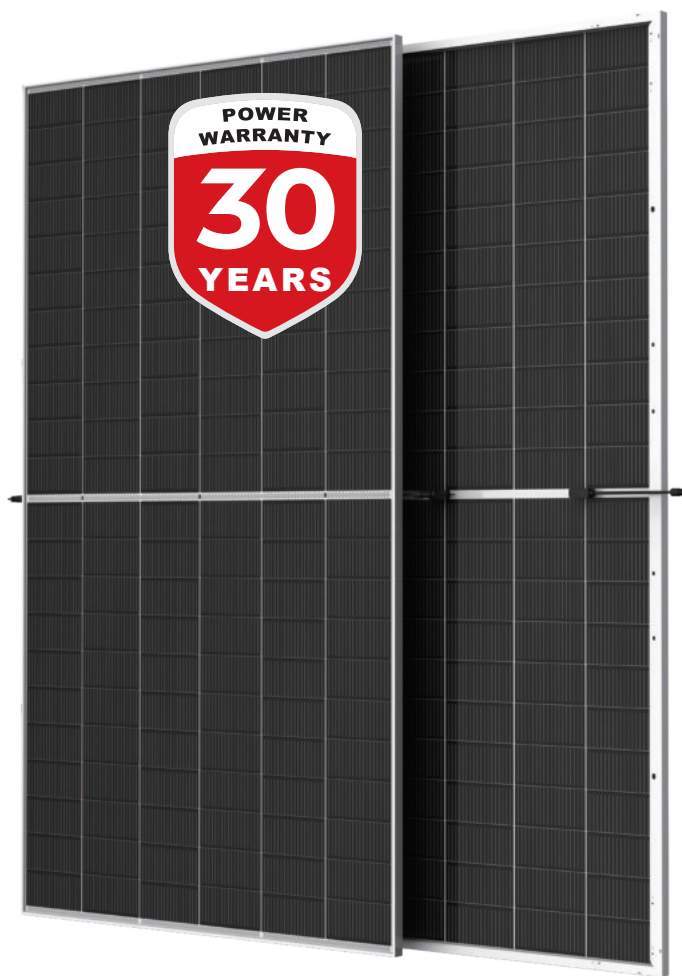
- Double glass
- Silver frame
- White mesh

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 Technology.



HIGH EFFICIENCY

N-type, Components have
better reliability and
lower LID/LETID attenuation.
Efficiency can reach
22.86%. 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

	685W	690W	695W	700W	705W	710W
Max power(Pmax)	685	690	695	700	705	710
Max power voltage(Vmp)	39.91	40.12	40.32	40.51	40.69	40.88
Max power current(Imp)	17.17	17.2	17.24	17.28	17.33	17.37
Open circuit voltage(Voc)	47.69	47.88	48.08	48.27	48.46	48.65
Short circuit current(Isc)	18.21	18.25	18.28	18.32	18.36	18.40
Module Efficiency(%)	22.05	22.21	22.37	22.53	22.70	22.86
Max system voltage	DC 1500V (TÜV)					
Maximum Series Fuse Rating	35A					

Electrical Characteristics with 15% Rear Side Power Gain

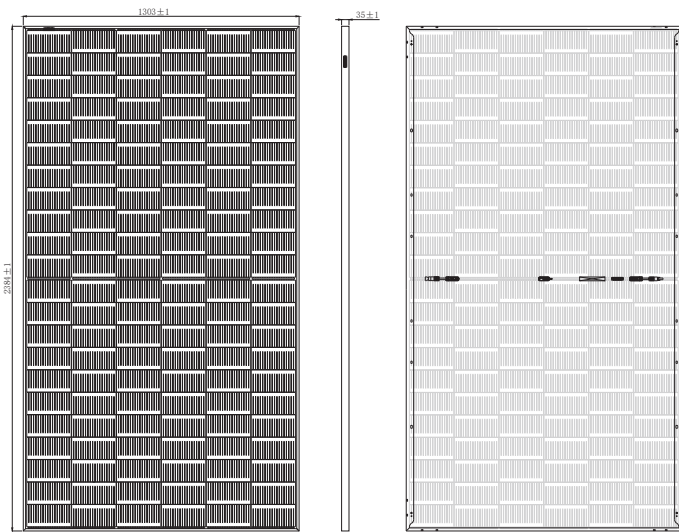
Front power Pmax/W	685W	690W	695W	700W	705W	710W
Total power Pmax/W	787.75	793.5	799.25	805	810.75	816.5
Vmp/V(Total)	39.91	40.12	40.32	40.51	40.69	40.88
Imp/A(Total)	19.74	19.78	19.82	19.87	19.93	19.97
Voc/V(Total)	47.69	47.88	48.08	48.27	48.46	48.65
Isc/A(Total)	20.94	20.99	21.02	21.07	21.11	21.16

Electrical parameters at NMOT test conditions

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

Typical type	685W	690W	695W	700W	705W	710W
Max power(Pmax)	517.7	521.7	525.6	529.5	533.8	537.9
Max power voltage(Vmp)	37.40	37.60	37.80	38.00	38.20	38.40
Max power current(Imp)	13.84	13.87	13.91	13.94	13.98	14.01
Open circuit voltage(Voc)	45.20	45.40	45.60	45.80	46.00	46.20
Short circuit current(Isc)	14.65	14.68	14.70	14.74	14.77	14.80

DIMENSIONS AND STRUCTURE



Mechanical Data

Dimensions	2384×1303×35mm
Weight	38.3kg
Glass	(F) 2.0mm ultra clear embossed double layer colorless glass (B) 2.0mm white mesh glazed tempered glass
Output cables	4mm ² , symmetrical lengths 1300mm
Connectors	MC4 compatible IP68
Cell type	Mono-Crystalline, N type Bifacial, 210mm x 105mm
Number of cells	132cells (Half-Cell)

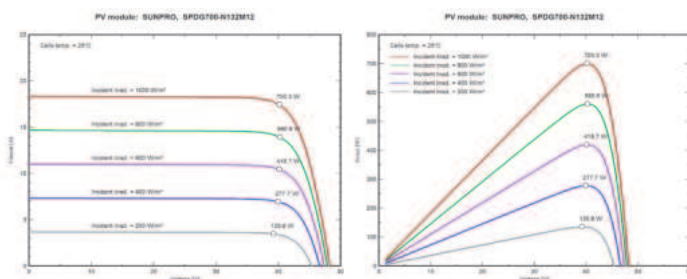
Temperature Characteristics

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	31
Pallets per container	18
Pieces per container	558

I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



Tests, Certifications and Warranties

Standard tests	IEC 61215, IEC 61730
System certs	ISO 9001, ISO14001, ISO45001
Certifications	TÜV, 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