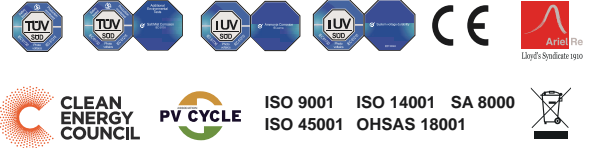


Tier1

BloombergNEF



M12 TOPCON BIFACIAL

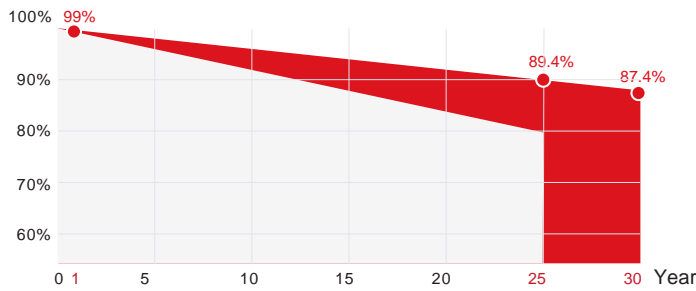
SPDGxxx-N132M12

685~710W

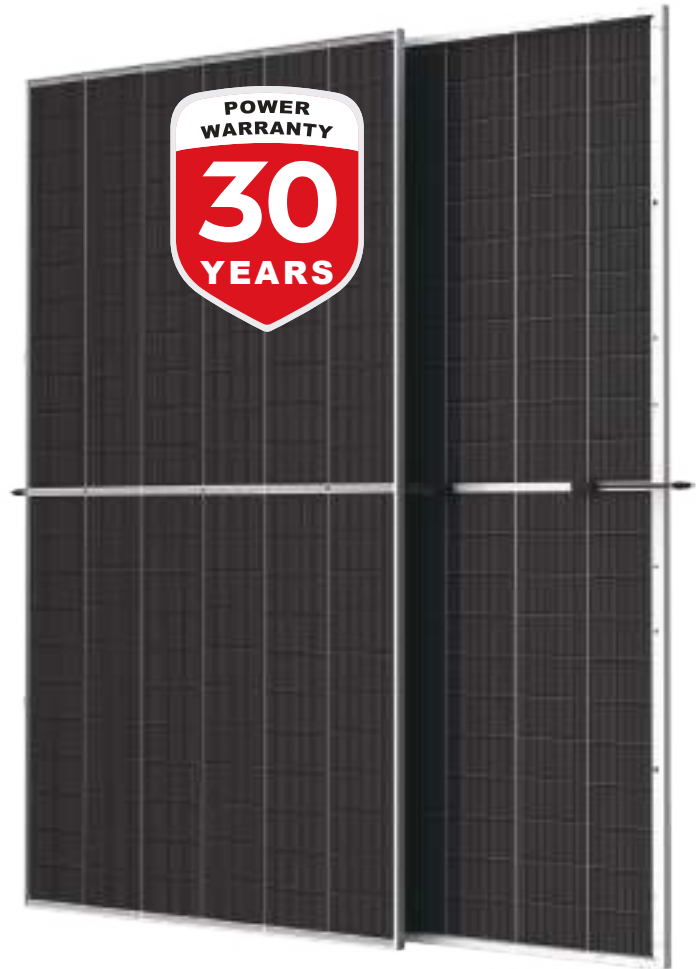
- Double glass
- Silver frame
- White Mesh

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

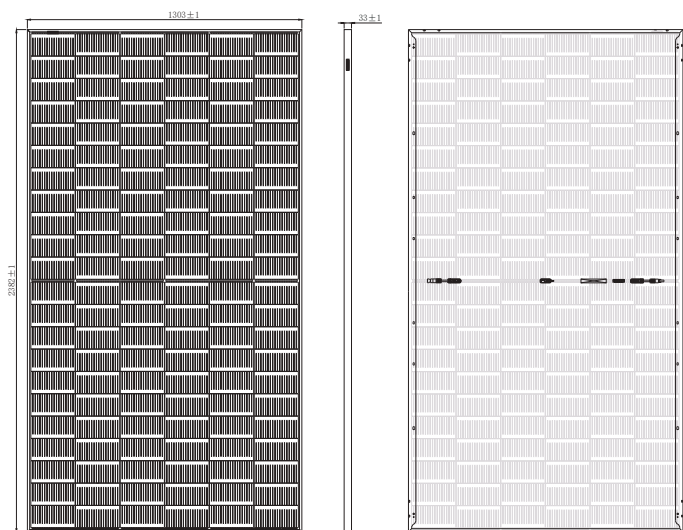
| Front power Pmax/W | 685W | 690W | 695W | 700W | 705W | 710W |
|--------------------|--------|-------|--------|-------|--------|-------|
| Total power Pmax/W | 787.75 | 793.5 | 799.25 | 805 | 810.75 | 816.5 |
| Vmp/V(Total) | 39.91 | 40.12 | 40.32 | 40.51 | 40.69 | 40.88 |
| Imp/A(Total) | 19.74 | 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 | 2382×1303×33mm |
| 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) |

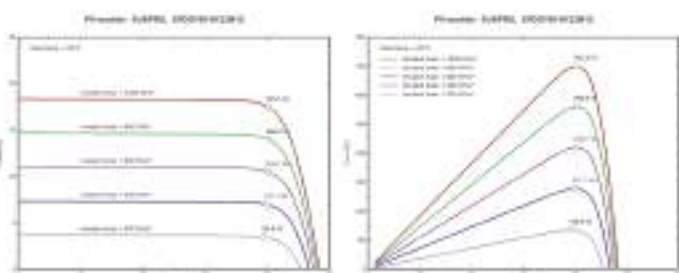
Temperature Characteristics

| | |
|-----------------------------------|-----------|
| 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 | 33 |
| Pallets per container | 18 |
| Pieces per container | 594 |

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 |