

Tier1

BloombergNEF



M12 HI-EFF TWIN MONO

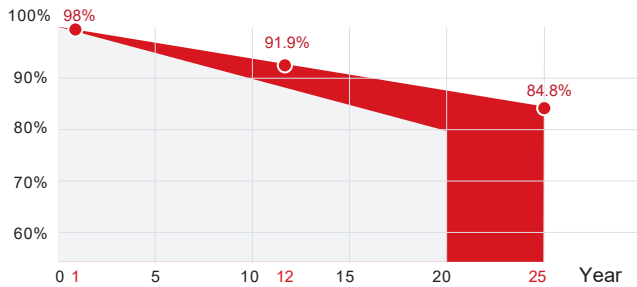
SPxxx-132M12

655~680W

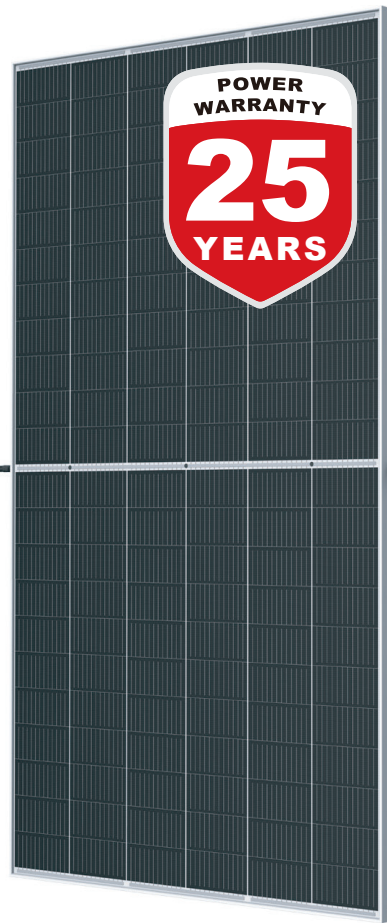
- Silver frame
- Black frame
- Full black
- Bifacial

12Yr quality guarantee | 25Yr power warranty

■ SUNPRO Standard (Additional value from 25-year warranty)
 ■ Industry Standard



*SUNPRO Standard tiered warranty



WARRANTY & GUARANTEE

Linear output power guarantee
 12 years: 91.9% power output
 25 years: 84.8% power output



WITHSTAND STRONG

Snow load 5400Pa
 Wind load 2400Pa



R&D AND PRODUCTION

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



HIGH EFFICIENCY

Efficiency can reach 21.89%. Excellent low light performance. Higher power output under the conditions of haze, overcast, etc.



POWER TOLERANCE

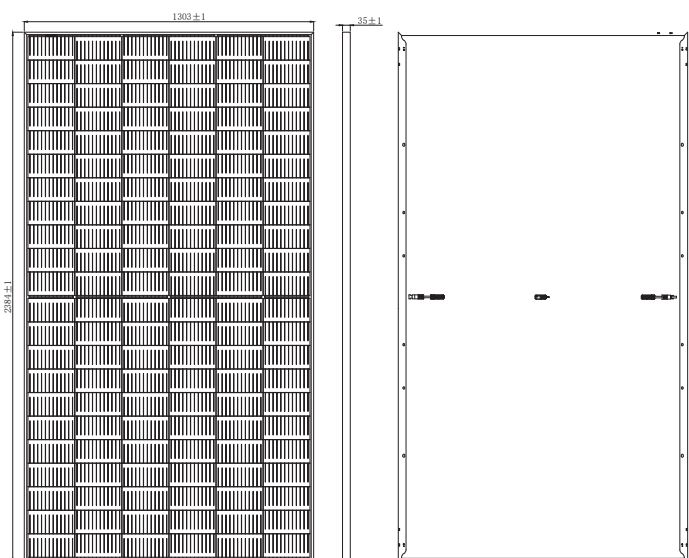
Power positive tolerance: 0~+5W

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

Typical type

	655W	660W	665W	670W	675W	680W
Max power(Pmax)	655	660	665	670	675	680
Max power voltage(Vmp)	37.58	37.79	38.01	38.22	38.44	38.66
Max power current(Imp)	17.43	17.47	17.5	17.53	17.56	17.59
Open circuit voltage(Voc)	45.48	45.69	45.91	46.13	46.34	46.56
Short circuit current(Isc)	18.48	18.52	18.56	18.6	18.64	18.68
Module Efficiency(%)	21.09	21.25	21.41	21.57	21.73	21.89
Max system voltage	DC 1500V(TÜV,UL) / 1000V(CUL)					
Maximum Series Fuse Rating	30A					

DIMENSIONS AND STRUCTURE



Electrical parameters at NMOT test conditions

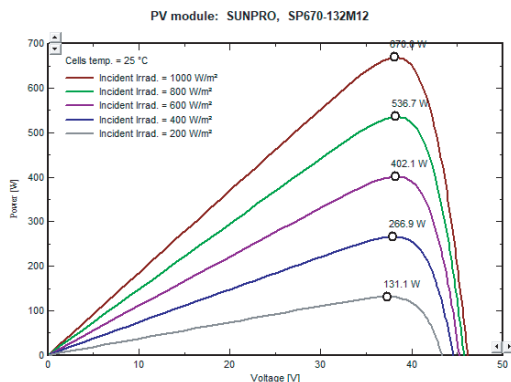
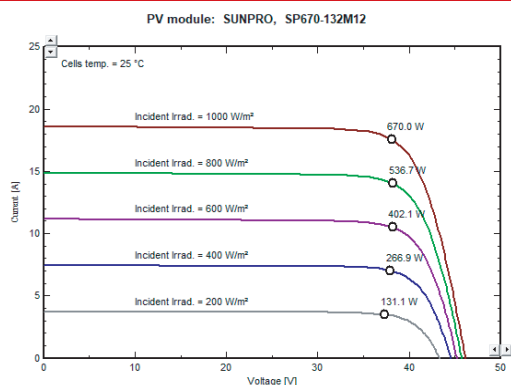
(Irradiance 800W/m², Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s)

Typical type	655W	660W	665W	670W	675W	680W
Max power(Pmax)	490	494	499	502	506	510
Max power voltage(Vmp)	35.1	35.3	35.5	35.7	35.9	36.1
Max power current(Imp)	13.96	14	14.03	14.06	14.1	14.13
Open circuit voltage(Voc)	42.7	42.9	43.2	43.4	43.6	43.8
Short circuit current(Isc)	14.87	14.9	14.93	14.96	15	15.03

Mechanical Data

Dimensions	2384x1303x35mm
Weight	34 kg
Glass	3.2mm ultra clear embossed tempered coated glass
Output cables	4mm ² , symmetrical lengths 1300mm
Connectors	MC4 compatible IP68
Cell type	Mono-Crystalline PERC, 210mm x 105mm
Number of cells	132 cells (Half-Cell)

I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



Temperature Characteristics

Temp.Coeff.of Isc(TK Isc)	0.050%/°C
Temp.Coeff.of Voc(TK Voc)	-0.27%/°C
Temp.Coeff.of Pmax(TK Pmax)	-0.34%/°C
Operating temperature	-40~+85°C
Normal operating cell temperature	44±2°C

Packing Configuration

Container	40'HQ
Pieces per pallet	31
Pallets per container	18
Pieces per container	558

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, UL, CEC, 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	12 years product warranty and 25 years 84.8% of power