

Tier1

BloombergNEF



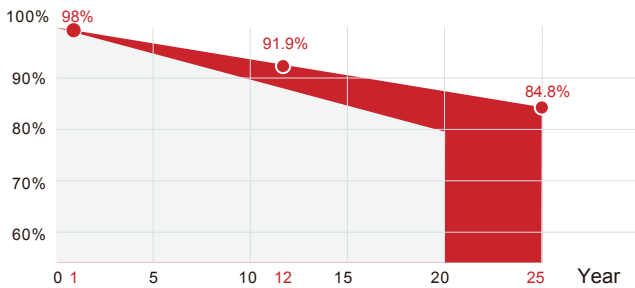
# M12 HI-EFF TWIN MONO

## SPxxx-120M12 580~605W

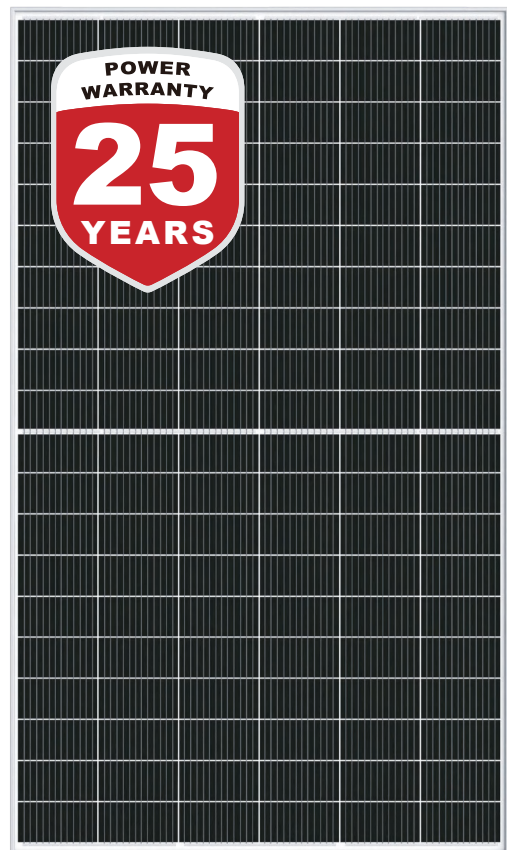
- Silver frame
- Black frame
- Full black
- Bifacial

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 21.38%. Excellent low light performance. Higher power output under the conditions of haze, overcast, etc.



### POWER TOLERANCE

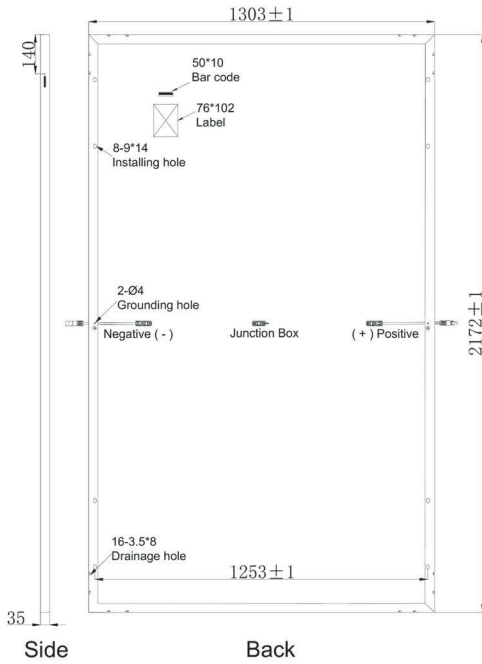
Power positive tolerance: 0~+3%

Electrical parameters at standard test conditions (STC:AM=1.5, 1000W/m<sup>2</sup>, Cells Temperature 25°C)

**Typical type**

	580W	585W	590W	595W	600W	605W
Max power(Pmax)	580	585	590	595	600	605
Max power voltage(Vmp)	33.60	33.80	34.00	34.20	34.40	34.60
Max power current(Imp)	17.27	17.31	17.35	17.40	17.45	17.49
Open circuit voltage(Voc)	40.70	40.90	41.10	41.30	41.50	41.70
Short circuit current(Isc)	18.32	18.37	18.42	18.47	18.52	18.57
Module Efficiency(%)	20.49	20.67	20.85	21.02	21.20	21.38
Max system voltage	DC 1500V(TÜV,UL) / 1000V(CUL)					
Maximum Series Fuse Rating	30A					

**DIMENSIONS AND STRUCTURE**



**Electrical parameters at NMOT test conditions**

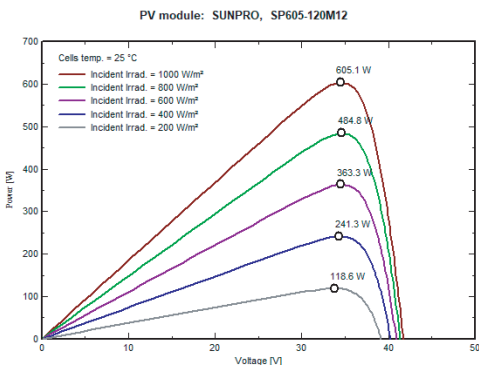
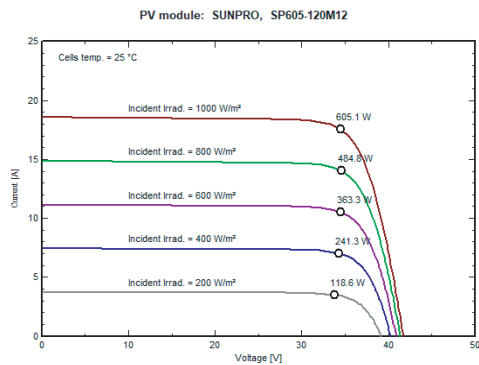
(Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s)

Typical type	580W	585W	590W	595W	600W	605W
Max power(Pmax)	432	436	439	443	447	450
Max power voltage(Vmp)	31.20	31.40	31.60	31.70	31.90	32.00
Max power current(Imp)	13.84	13.88	13.92	13.97	14.02	14.06
Open circuit voltage(Voc)	38.00	38.20	38.40	38.60	38.80	39.00
Short circuit current(Isc)	14.74	14.78	14.82	14.86	14.90	14.94

**Mechanical Data**

Dimensions	2172x1303x35mm
Weight	30.9 kg
Glass	3.2mm ultra clear embossed tempered coated glass
Output cables	4mm <sup>2</sup> , symmetrical lengths 1300mm
Connectors	MC4 compatible IP68
Cell type	Mono-Crystalline PERC, 210x105mm
Number of cells	120 cells ( Half-Cell )

**I-V CHARACTERISTICS AT DIFFERENT IRRADIATION**



**Temperature Characteristics**

Temp.Coeff.of Isc(TK Isc)	0.05%/°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, INMETRO, WEEE
Extreme wind and snow loads testing	Withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal)
Power tolerance	0~+3%
Junction box	IP 68
Warranties	12 years product warranty and 25 years 84.8% of power