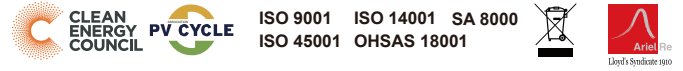


Tier1

BloombergNEF



# M10 TOPCON BIFACIAL

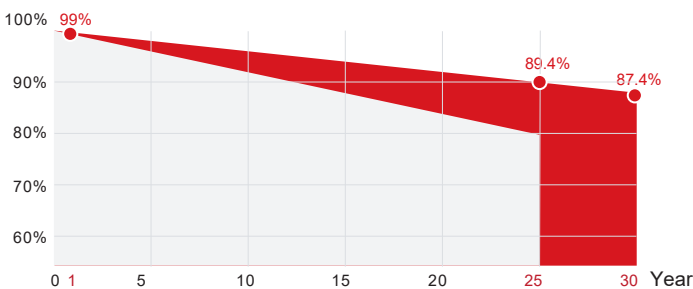
SPDGxxx-N120M10

455~490W

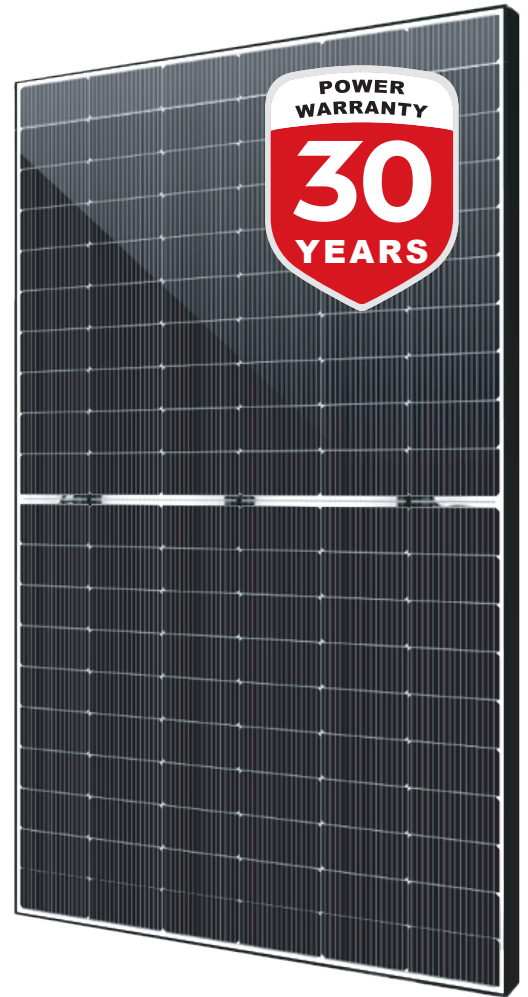
- Bifacial Transparent
- Double glass
- Black frame
- Sliver frame
- Full black

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 22.62%. 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/m<sup>2</sup>, Cells Temperature 25°C)

### Typical type

	455W	460W	465W	470W	475W	480W	485W	490W
Max power(Pmax)	455	460	465	470	475	480	485	490
Max power voltage(Vmp)	34.76	34.88	34.99	35.11	35.24	35.38	35.52	35.66
Max power current(Imp)	13.09	13.19	13.29	13.39	13.48	13.57	13.66	13.75
Open circuit voltage(Voc)	42.1	42.24	42.38	42.52	42.66	42.8	42.94	43.06
Short circuit current(Isc)	13.83	13.94	14.03	14.12	14.2	14.29	14.38	14.47
Module Efficiency(%)	21.01	21.24	21.47	21.70	21.93	22.16	22.39	22.62
Max system voltage	DC 1500V (TÜV, UL)							
Maximum Series Fuse Rating	30A							

### Electrical Characteristics with 15% Rear Side Power Gain

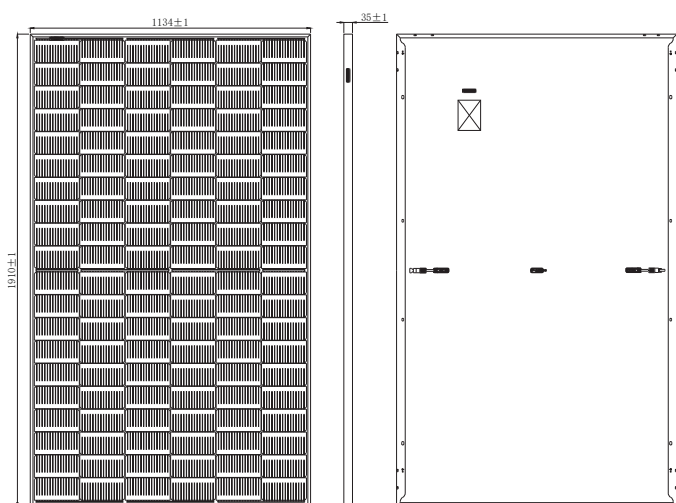
Front power Pmax/W	455W	460W	465W	470W	475W	480W	485W	490W
Total power Pmax/W	523.25	529	534.75	540.5	546.25	552	557.75	563.5
Vmp/V(Total)	34.76	34.88	34.99	35.11	35.24	35.38	35.52	35.66
Imp/A(Total)	15.05	15.17	15.28	15.39	15.5	15.6	15.7	15.8
Voc/V(Total)	42.1	42.24	42.38	42.52	42.66	42.8	42.94	43.06
Isc/A(Total)	15.9	16.03	16.13	16.24	16.33	16.43	16.54	16.64

### Electrical parameters at NMOT test conditions

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

Typical type	455W	460W	465W	470W	475W	480W	485W	490W
Max power(Pmax)	342	346	350	354	358	362	363	366
Max power voltage(Vmp)	32.6	32.7	32.9	33	33.2	33.3	33.20	33.30
Max power current(Imp)	10.48	10.56	10.63	10.71	10.77	10.86	10.92	11.00
Open circuit voltage(Voc)	39.6	39.8	39.9	40.1	40.2	40.4	40.20	40.30
Short circuit current(Isc)	11.15	11.24	11.31	11.38	11.44	11.52	11.59	11.66

### DIMENSIONS AND STRUCTURE



### Mechanical Data

Dimensions	1910x1134x35mm
Weight	26kg
Glass	(F) 2.0mm ultra clear embossed double layer colorless glass (B) 2.0mm semi-tempered glass
Output cables	4mm <sup>2</sup> , symmetrical lengths 1100mm
Connectors	MC4 compatible IP68
Cell type	Mono-Crystalline, N type Bifacial, 182x91mm
Number of cells	120cells ( Half-Cell )

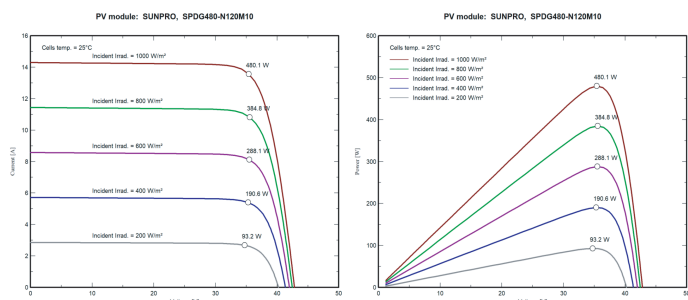
### Temperature Characteristics

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	62
Pallets per container	12
Pieces per container	744

### I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



### 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, CEC, UL, 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