

Tier1

BloombergNEF



ISO 9001 ISO 14001 SA 8000  
ISO 45001 OHSAS 18001

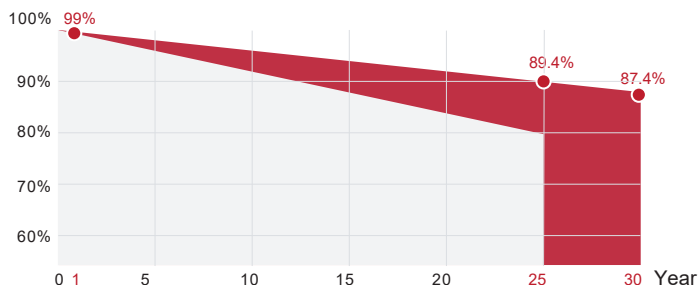
## M10 TOPCON MONO

### SPxxx-N120M10

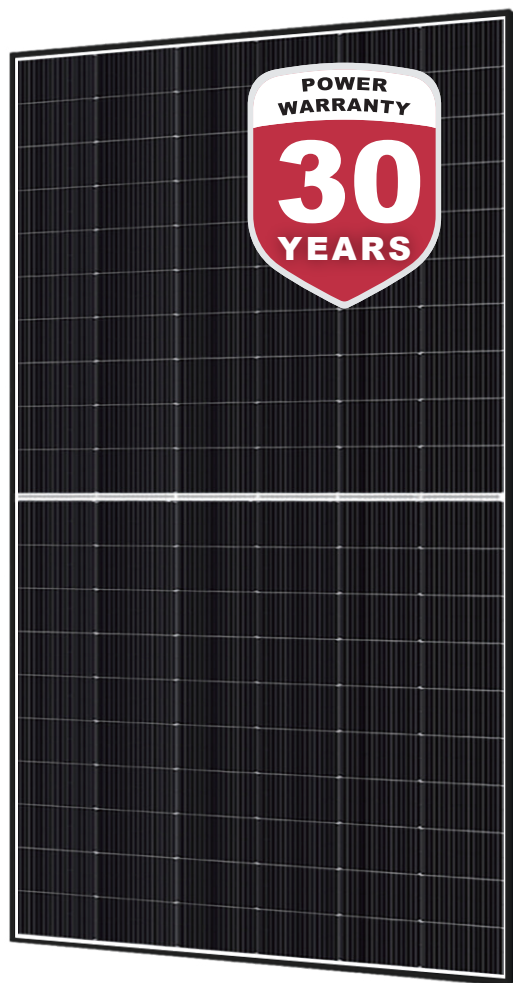
- Single glass (xxx=455~490W)
- Black frame
- Bifacial Transparent
- Silver frame

30 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 selection:  $\pm 3W$ .  
The attenuation probability of PID phenomenon is minimized through battery production technology optimization and material control



#### R&D AND PRODUCTION

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



#### HIGH EFFICIENCY

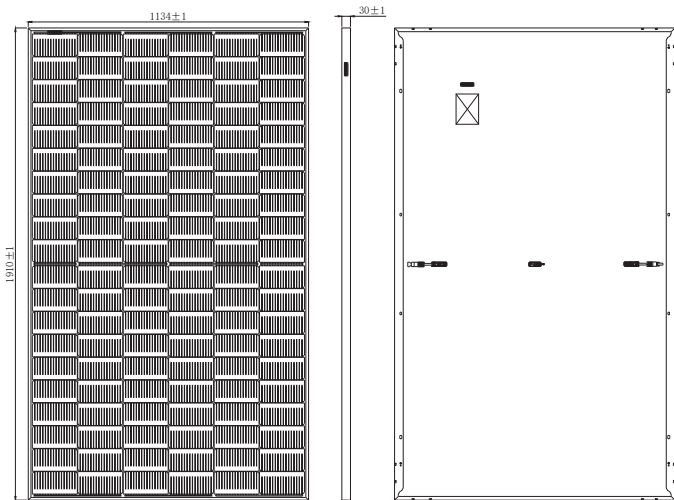
N-type, Components have better reliability and lower LID/LETID attenuation. Efficiency can reach 22.62%. Excellent low light performance. Higher power output under the conditions of haze, overcast, etc.

## 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	21.7	21.93	22.16	22.39	22.62
Max system voltage	DC 1500V (TÜV)							
Maximum Series Fuse Rating	25A							

### DIMENSIONS AND STRUCTURE



### Electrical parameters at NMOT test conditions

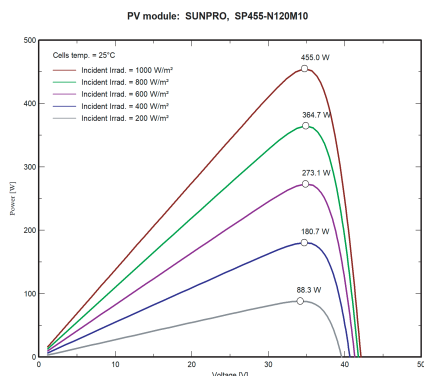
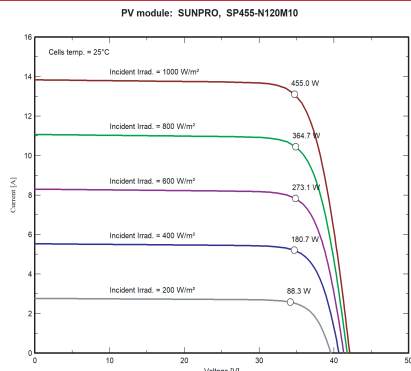
(Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s)

Typical type	455W	460W	465W	470W	475W	480W	485W	490W
Max power(Pmax)	342	346	350	354	358	362	363	366
Max power voltage(Vmp)	32.60	32.70	32.90	33	33.2	33.3	33.2	33.3
Max power current(Imp)	10.48	10.56	10.63	10.71	10.77	10.86	10.92	11
Open circuit voltage(Voc)	39.60	39.80	39.9	40.1	40.2	40.4	40.2	40.3
Short circuit current(Isc)	11.15	11.24	11.31	11.38	11.44	11.52	11.59	11.66

### Mechanical Data

Dimensions	1910x1134x30 mm
Weight	22.5kg
Glass	3.2mm ultra clear embossed tempered coated glass
Output cables	4mm <sup>2</sup> , symmetrical lengths 1100mm
Cell type	N type Mono-Crystalline , 16BB , 182x91mm
Number of cells	120 cells ( Half-Cell )
Connectors	NINGBO GZX PV TECHNOLOGY CO.,LTD PV-GZX1500,1500VDC, 39A,IP68

### I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



### Temperature Characteristics

Temp.Coeff. of Isc(TK Isc)	0.046%/°C	Container	40'HQ
Temp.Coeff. of Voc(TK Voc)	-0.25%/°C	Pieces per pallet	36
Temp.Coeff. of Pmax(TK Pmax)	-0.30%/°C	Pallets per container	24
Operating temperature	-40~+85°C	Pieces per container	864
Normal operating cell temperature	45±2°C		

### Packing Configuration

### Tests, Certifications and Warranties

Standard tests	IEC 61215, IEC 61730
System certs	ISO 9001, ISO14001, ISO45001 OHSAS 18001, SA 8000
Certifications	TÜV, CE, WEEE, INMETRO FIRE CERTIFICA C1
Extreme wind and snow loads testing	Withstand extreme wind(2400 Pascal) and snow loads(5400 Pascal)
Power output tolerance	±3%
Junction box	IP 68
Warranties	30 years product warranty and 30 years 87.4% of power
Fire class rating	Class C