

Tier1

BloombergNEF



ISO 9001  
ISO 45001

ISO 14001  
OHSAS 18001

SA 8000



# 186.8R TOPCON MONO

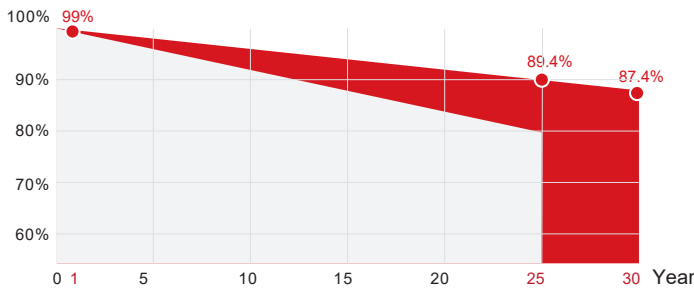
SPxxx-N108R10

## 425~450W

- Silver frame
- Black frame
- Full black

15 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. The leading solar cell cutting process and multi busbar design with SUNPRO Technology.

### HIGH EFFICIENCY

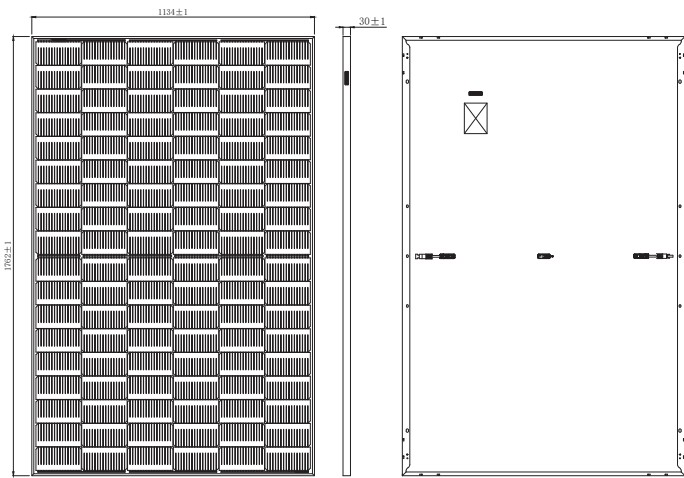
N-type , Components have better reliability and lower LID/LETID attenuation. Efficiency can reach 22.52%. Excellent low light performance. Higher power output under the conditions of haze, overcast, etc.

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

### Typical type

	425W	430W	435W	440W	445W	450W
Max power(Pmax)	425	430	435	440	445	450
Max power voltage(Vmp)	32.04	32.22	32.41	32.60	32.79	32.98
Max power current(Imp)	13.27	13.35	13.43	13.50	13.58	13.65
Open circuit voltage(Voc)	38.72	38.90	39.09	39.27	39.45	39.63
Short circuit current(Isc)	13.82	13.90	13.98	14.05	14.13	14.21
Module Efficiency(%)	21.27	21.52	21.77	22.02	22.27	22.52
Max system voltage	DC 1500V (TÜV)					
Maximum Series Fuse Rating	25A					

### DIMENSIONS AND STRUCTURE



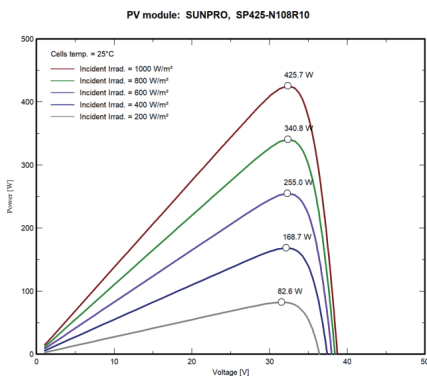
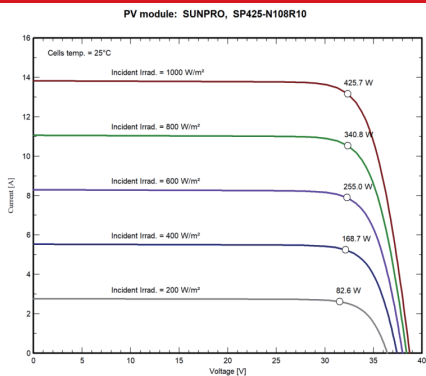
### Electrical parameters at NMOT test conditions (Irradiance 800W/m<sup>2</sup>, Ambient Temperature 20°C, AM 1.5, Wind Speed 1m/s)

Typical type	425W	430W	435W	440W	445W	450W
Max power(Pmax)	320.6	324.6	328.6	332.4	336.5	340.3
Max power voltage(Vmp)	30.4	30.6	30.8	31	31.2	31.3
Max power current(Imp)	10.55	10.61	10.68	10.73	10.8	10.86
Open circuit voltage(Voc)	36.5	36.7	36.9	37.1	37.3	37.5
Short circuit current(Isc)	11.14	11.2	11.27	11.32	11.39	11.45

### Mechanical Data

Dimensions	1762x1134x30mm
Weight	21.5kg
Glass	3.2mm ultra clear embossed tempered coated glass
Output cables	4mm <sup>2</sup> , symmetrical lengths 1100mm
Connectors	MC4 compatible IP68
Cell type	N type Mono-Crystalline, 182mmx93.4mm
Number of cells	108cells (Half-Cell)

### I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



### Temperature Characteristics

Temp.Coeff.of Isc(TK Isc)	0.046% / °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	36
Pallets per container	26
Pieces per container	936

### Tests, Certifications and Warranties

Standard tests	IEC 61215, IEC 61730
System certs	ISO 9001, ISO14001, ISO45001
Certifications	TÜV, CE, 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	15 years product warranty and 30 years 87.4% of power