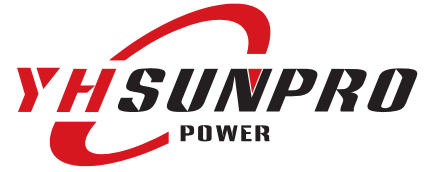


Tier1

BloombergNEF

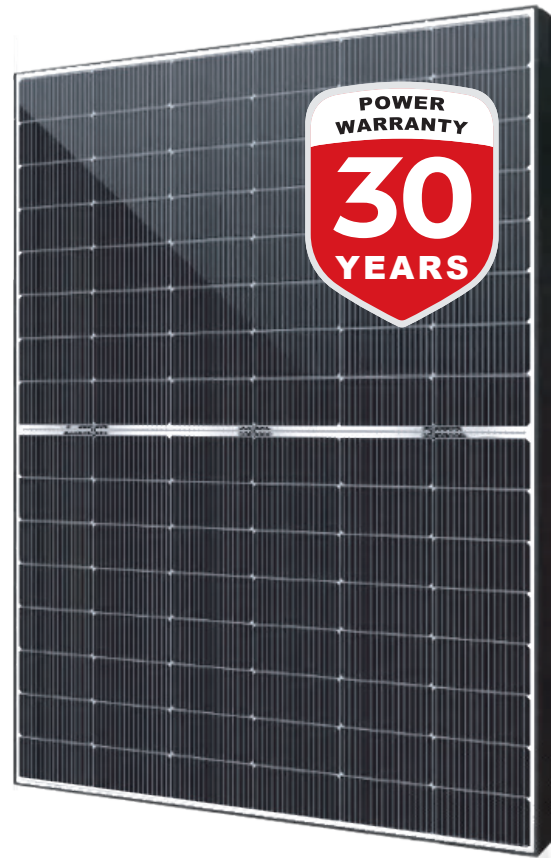


ISO 9001 ISO 14001 SA 8000
ISO 45001 OHSAS 18001

210R HI-EFF BIFACIAL HJT

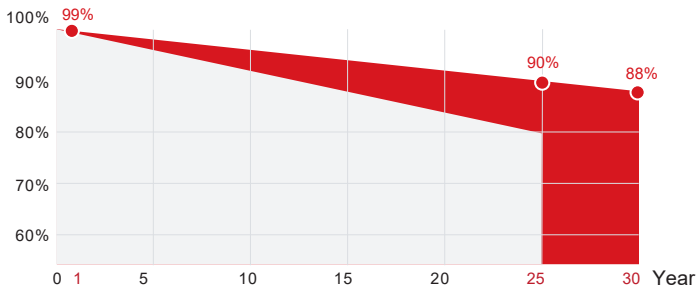
SP-96DSNxxx
445~460W

- Double glass
- Black frame
- Bifacial Transparent



15 Yr quality guarantee | 30 Yr power warranty

■ SUNPRO HJT module (Additional value from 30-year warranty)
 ■ Common module



*SUNPRO Standard tiered warranty



WARRANTY & GUARANTEE

Linear output power guarantee
25 years: 90% power output
30 years: 88% power output



WITHSTAND STRONG

Snow load 5400Pa
Wind load 2400Pa



ADVANCED BIFACIAL EFFICIENCY

Bifaciality > 90%, effectively improves backside power generation. A bifacial cell design that generates energy from both sides, capturing and converting more sunlight into power.



R&D AND PRODUCTION

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



HIGH ENERGY YIELD

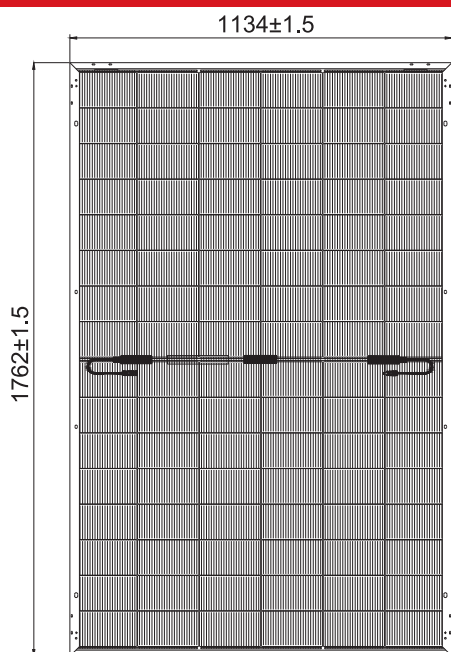
Efficiency can reach 23.02%. Excellent weak light performance and better performance in hot climate. Leading temperature coefficient for more production when the sun shines strongest, Or under the cloudy, haze condition

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

Typical type

	445W	450W	455W	460W
Max power(Pmax)	445	450	455	460
Max power voltage(Vmp)	30.61	30.76	30.90	31.05
Max power current(Imp)	14.54	14.64	14.73	14.82
Open circuit voltage(Voc)	36.45	36.61	36.77	36.93
Short circuit current(Isc)	15.24	15.34	15.43	15.52
Module Efficiency(%)	22.27	22.52	22.77	23.02
Max system voltage	DC 1500V(TÜV)			
Maximum Series Fuse Rating	30A			

DIMENSIONS AND STRUCTURE



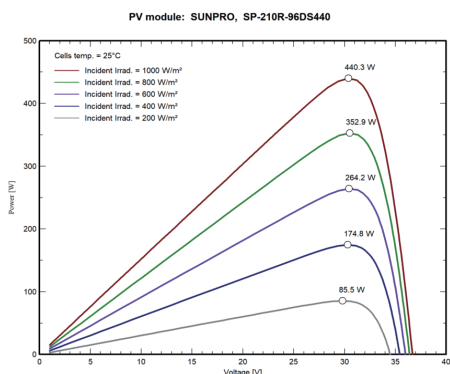
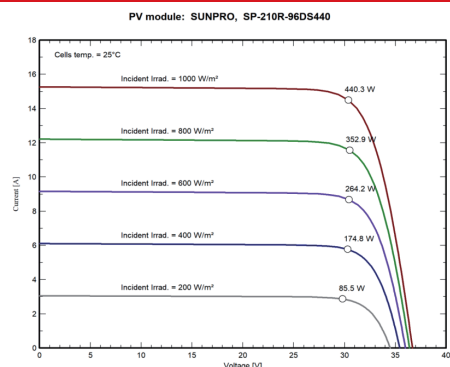
Electrical Characteristics with 15% Rear Side Power Gain

Front power Pmax/W	445W	450W	455W	460W
Total power Pmax/W	511.75	517.50	523.25	529.00
Vmp/V(Total)	30.61	30.76	30.9	31.05
Imp/A(Total)	16.72	16.82	16.93	17.04
Voc/V(Total)	36.45	36.61	36.77	36.93
Isc/A(Total)	17.52	17.55	17.66	17.84

Mechanical Data

Dimensions	1762x1134x30mm
Weight	23kg
Glass	(F) 1.6mm ultra clear embossed double layer colorless glass (B) 1.6mm semi-tempered glass
Output cables	4mm ² , 1100mm in length, length can be customized / UV Resistant
Connectors	MC4 compatible IP68
Cell type	Mono-Crystalline ,Bifacial HJT, 182mm x 105mm
Number of cells	96 cells (Half-Cell)

I-V CHARACTERISTICS AT DIFFERENT IRRADIATION



Temperature Characteristics

Temp.Coeff.of Isc(TK Isc)	0.04%/°C
Temp.Coeff.of Voc(TK Voc)	-0.22%/°C
Temp.Coeff.of Pmax(TK Pmax)	-0.24%/°C
Operating temperature	-40~+85°C
Normal operating cell temperature	44±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
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 88% of power