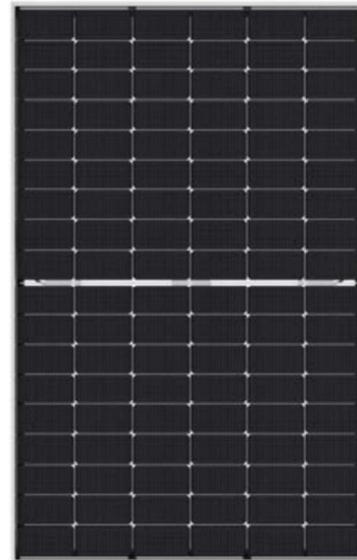


HS-48TBN 435~455-S7

N-type monocrystalline high-efficiency
bifacial double glass module

22.8%

Maximum module efficiency



Product features

The whole industry chain integrated production

Polysilicon, wafer, cell, glass, frame, junction box are all self-produced, and the overall compability is better.

Better temperature coefficient

Improve power generation at high temperature and increase power output by 1%.

Higher bifaciality

Bifaciality can be as high as 85%, with backside gain up to 11.48% in sandy conditions.

High conversion efficiency

With outstanding cell technology and advanced manufacturing processes, the module can achieve conversion efficiency up to 22.5%.

Excellent performance in low light intensity

Improve the performance of power generation under low light conditions such as in the morning or evening and in cloudy and rainy days.

High reliability

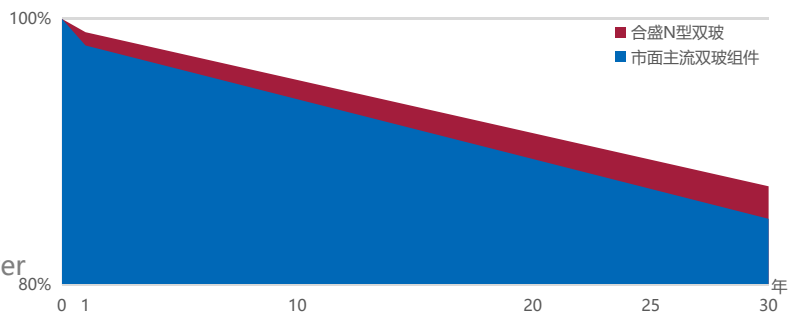
The module has better sustainability in harsh environments such as in high-cold areas, desert and mudflats after more rigorous testings.

12

- 12-year product warranty
- 1% 1st-year power degradation

30

- 30-year linear power warranty
- 0.4% annual power degradation



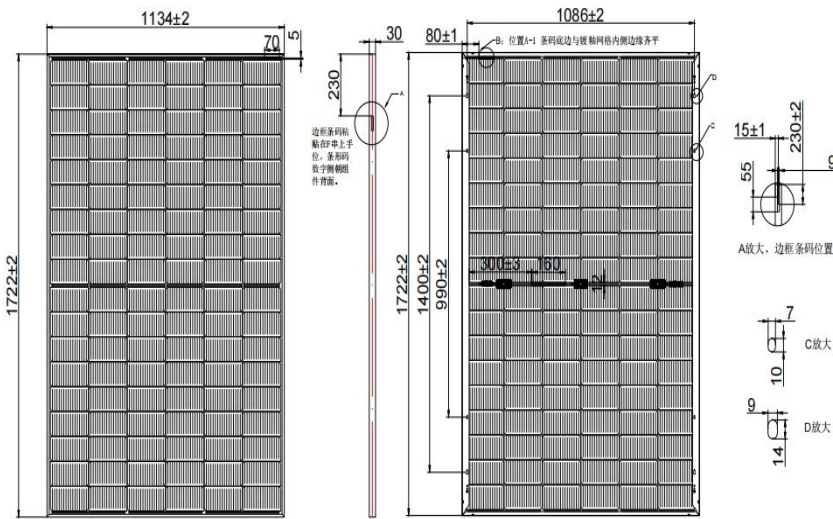
IEC61215(2016), IEC61730(2016)

ISO9001:2015: Quality Management System (QMS)

ISO14001:2015: Environmental Management System

ISO45001:2018:Occupational Health and Safety Management System





Mechanical Parameters

Cell type	N-type Monocrystalline solar cells
Number of half cell	96 (6×16)
Dimensions	1762×1134×30mm
Weight	20.9kg
Front Glass	1.6mm anti-reflective coating glass
Back Glass	1.6mm Heat-strengthened glass
Frame	Anodized aluminum alloy
Junction box	IP68
Output cable	4.0mm ² ; + 400/-200mm or customised
Size of each pallet	1778×1140×1250mm

Electrical performance parameters

Module Type	HS-48TBN 435-455-S7									
Test Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	435	355	440	359	445	363	450	368	455	372
Optimum Operating Voltage (Vmp/V)	29.45	29.32	29.58	29.52	29.71	29.69	29.84	29.86	29.97	30.03
Optimum Operating Current (Imp/A)	14.77	12.10	14.87	12.17	14.98	12.24	15.08	12.31	15.18	12.38
Open Circuit Voltage (Voc/V)	34.71	34.81	34.88	34.98	35.05	35.15	35.22	35.32	35.39	35.49
Short Circuit Current (Isc/A)	15.88	12.68	15.96	12.74	16.04	12.80	16.12	12.86	16.20	12.92
Module Efficiency (%)	21.8%		22.0%		22.3%		22.5%		22.8%	
Operating Temperature Range (°C)	-40°C ~ +85°C									
Maximum System Voltage	1500V DC (IEC)									
Maximum Rated Fuse Current	25A									
Power Tolerance	0~ +5W									
Temperature Coefficient of peak power (Pmax)	-0.29%/°C									
Temperature Coefficient of open circuit voltage(Voc)	-0.25%/°C									
Temperature Coefficient of short-circuit current(Isc)	0.043%/°C									
Nominal Operating Temperature of cell (NOTC)	45±2°C									
Bifaciality(BiFi)	80±5%									

STC: Irradiance 1000W/m² Cell temperature: 25°C Air quality=1.5
 NOCT: Irradiance 800W/m² Ambient temperature: 20°C Air quality =1.5 Wind speed 1m/s

Parameters of bifacial power generation (Backside Power Gain)

		45%	50%	55%	60%	65%
5%	Maximum power(Pmax)	457Wp	462Wp	467Wp	473Wp	478Wp
	Module efficiency(%)	22.9%	23.1%	23.4%	23.6%	23.9%
10%	Maximum power(Pmax)	479Wp	484Wp	490Wp	495Wp	501Wp
	Module efficiency(%)	23.9%	24.2%	24.5%	24.8%	25.0%
15%	Maximum power(Pmax)	500Wp	506Wp	512Wp	518Wp	523Wp
	Module efficiency(%)	25.0%	25.3%	25.6%	25.9%	26.2%