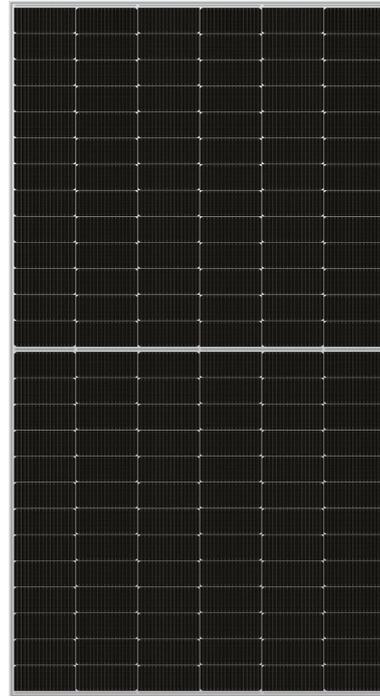


# HS-78TBN 610~630-S3

N-type monocrystalline  
high-efficiency bifacial  
double glass module

**22.5%**

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 23%.

### 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

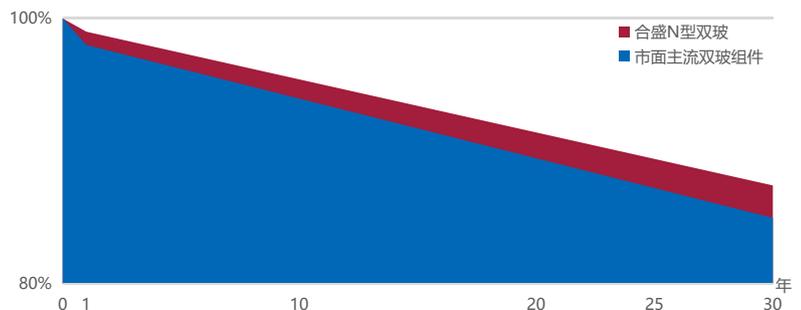
The module has better sustainability in harsh environments such as in high-cold areas, desert and mudflats after more rigorous testings.



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



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



IEC61215(2016), IEC61730(2016)

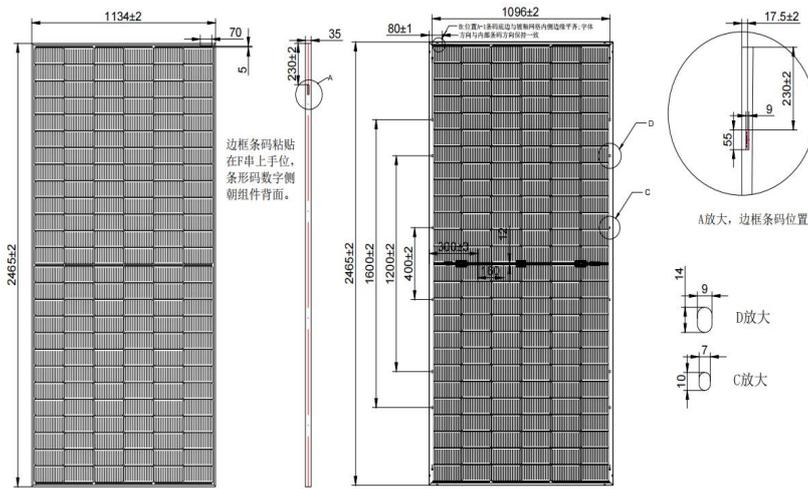
ISO9001:2015: Quality Management System (QMS)

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	156 (6×26)
Dimensions	2465×1134×35mm
Weight	34.3kg
Front Glass	2.0mm high transparent coated glass
Back Glass	2.0mm Semi-tempered glass
Frame	Anodized aluminum alloy
Junction box	IP68
Output cable	4.0mm <sup>2</sup> ; + 400/-200mm or customised
Size of each pallet	2466×1140×1250mm

**Electrical performance parameters**

Module Type	HS-78TBN 610-630-S3									
Test Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	610	466	615	470	620	474	625	478	630	481
Optimum Operating Voltage (Vmp/V)	45.59	43.87	45.76	44.08	45.93	44.28	46.09	45.18	46.26	45.33
Optimum Operating Current (Ipm/A)	13.38	10.53	13.44	10.55	13.50	10.57	13.56	10.58	13.62	10.61
Open Circuit Voltage (Voc/V)	55.32	52.29	55.46	52.43	55.60	52.56	55.74	52.69	55.88	52.82
Short Circuit Current (Isc/A)	14.03	11.30	14.11	11.37	14.19	11.43	14.27	11.49	14.35	11.56
Module Efficiency (%)	21.8		22.0		22.2		22.4		22.5	
Operating Temperature Rang (°C)	-40°C~ +85°C									
Maximum System Voltage	1500V DC (IEC)									
Maximum Rated Fuse Current	30A									
Power Tolerance	0~+5W									
Temperature Coefficient of peak power	-0.29%/°C									
Temperature Coefficient of open circuit voltage	-0.25%/°C									
Temperature Coefficient of short-circuit current(Isc)	0.045%/°C									
Nominal Operating Temperature of cell (NOTC)	45±2°C									
Bifaciality(BiFi)	80±5%									
STC: Irradiance1000W/m <sup>2</sup>	Cell temperature: 25°C		Air quality=1.5							
NOCT: Irradiance 800W/m <sup>2</sup>	Ambient temperature: 20°C		Air quality =1.5		Wind speed 1m/s					

**Parameters of bifacial power generation (Backside Power Gain)**

%	Maximum power(Pmax)	641Wp	646Wp	651Wp	656Wp	662Wp
	Module efficiency(%)	23.0%	23.2%	23.4%	23.6%	23.8%
10%	Maximum power(Pmax)	671Wp	677Wp	682Wp	688Wp	693Wp
	Module efficiency(%)	24.1%	24.3%	24.5%	24.7%	24.9%
15%	Maximum power(Pmax)	702Wp	707Wp	713Wp	719Wp	725Wp
	Module efficiency(%)	25.2%	25.4%	25.6%	25.8%	26.0%