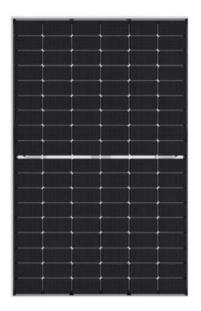


# HS-54TBN 420~440-S3

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

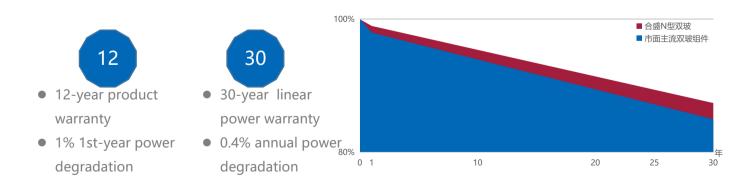
With outstanding cell technology and advanced manufacturing processes, the module can achieve conversion efficiency up to 22.5%.

### Excellent perforance 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.



IEC61215(2016), IEC61730(2016)

ISO9001:2015: Quality Management System (QMS)

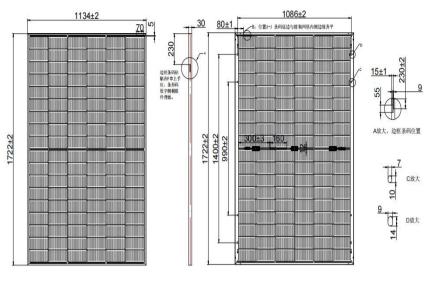
ISO14001:2015: Environmental Management System

ISO45001:2018:Occupational Health and Safety Management System









Mechanical Parameters					
Cell type	N-type Monocrystalline solar cells				
Number of half cell	108 (6×18)				
Dimensions	1722×1134×30mm				
Weight	20.5kg				
Front Glass	1.6mm anti-reflective coating glass				
Back Glass	1.6mm Heat-strengthened glass				
Frame	Anodized aluminum alloy				
Junction box	IP68				
Output cable	4.0mm²; + 400/-200mm or customised				
Size of each pallet	1778×1140×1250mm				

Electrical performance parameters										
Module Type	HS-54TBN 420-440-S3									
Test Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	420	316	425	319	430	322	435	325	440	329
Optimum Operating Voltage (Vmp/V)	32.02	30.05	32.35	30.28	32.68	30.51	33.01	30.83	33.34	31.04
Optimum Operating Current (Imp/A)	13.12	10.52	13.14	10.54	13.16	10.56	13.18	10.54	13.20	10.60
Open Circuit Voltage (Voc/V)	38.48	36.40	38.54	36.46	38.60	36.52	38.64	36.82	38.88	36.69
Short Circuit Current (Isc/A)	13.78	11.11	13.79	11.11	13.80	11.12	13.82	11.20	13.88	11.27
Module Efficiency (%)	21.6%		21	.8%	22.0%		22.3%		22.5%	
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 (	ower (Pmax) -0.29%/℃									
Temperature Coefficient of open circuit voltage(Voc) -0.25%/℃										
Temperature Coefficient of short-circuit current(lsc) 0.043%/°C										
Nominal Operating Temperature of cell (	ninal Operating Temperature of cell (NOTC) 45±2℃									
Bifaciality(BiFi) 80±5%										

Cell temperature: 25°C Air quality=1.5
Ambient temperature: 20°C Air quality =1.5 Wind speed 1m/s STC: Irradiance 1000W/m<sup>2</sup> NOCT: Irradiance 800W/m<sup>2</sup>

Parameters of bifacial power generation (Backside Power Gain)									
5%	Maximum power(Pmax)	441Wp	446Wp	452Wp	457Wp	462Wp			
	Module efficiency(%)	22.6%	22.9%	23.1%	23.4%	23.7%			
10%	Maximum power(Pmax)	462Wp	468Wp	473Wp	479Wp	484Wp			
	Module efficiency(%)	23.7%	23.9%	24.2%	24.5%	24.8%			
15%	Maximum power(Pmax)	483Wp	489Wp	495Wp	500Wp	506Wp			
	Module efficiency(%)	24.7%	25.0%	25.3%	25.6%	25.9%			