

TSBHNM-96HTG

445-465W

N-type TOPCon Bifacial Dual Glass Solar Module

- Natural zero LID with N-type solar cell
- Aesthetic design with unique full black appearance
- Maximum 30% more yield with high bifaciality
- Excellent low-light performance & temperature coefficient
- High module quality ensures long-term reliability
- The best choice for residential & C&I project

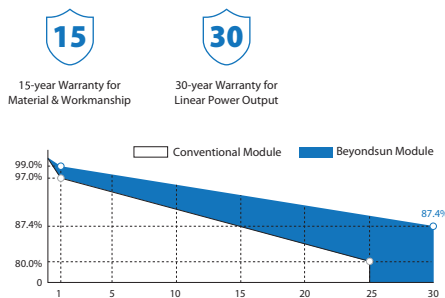


System & Product Certifications

IEC 61215 / IEC 61730
 ISO 9001: Quality Management System
 ISO 14001: Environment Management System
 ISO 45001: Occupational Health and Safety
 amfori BSCI Corporate Social Responsibility



Product Warranty



The Ideal Solution for

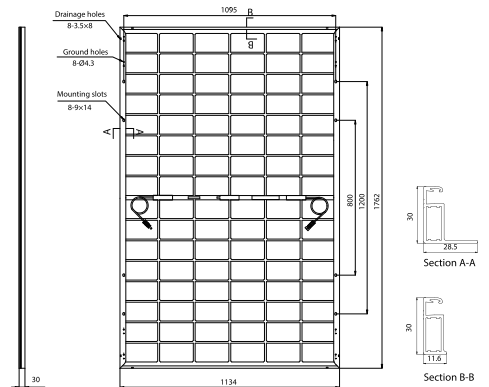
- Residential rooftop projects
- Commercial / industrial rooftop projects

N POWER ^(PRO) TSBHNM-96HTG 445-465W

Mechanical Parameters

Cell Type	N Type Mono
Cell Arrangement	96pcs 2x(6x8)
Dimension (LxWxH)	1762x1134x30mm
Weight	24.5kg
Front Cover	2.0mm AR Coating Tempered Glass
Back Cover	2.0mm Heat Strengthened Glass
Frame	Black Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Cable	4mm ² , +400mm, -200mm, or customizable
Connector	PV Connector

Technical Drawings (mm)



Electrical Parameters

STC: 1000W/m², 25 °C, AM 1.5 NMOT: 800W/m², AM 1.5, 20°C, 1m/s Pmax tolerance: 0~+3%

Module Type	TSBHNM445-96HTG		TSBHNM450-96HTG		TSBHNM455-96HTG		TSBHNM460-96HTG		TSBHNM465-96HTG	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Max. Power Output Pmax (W)	445	334.6	450	338.4	455	342.4	460	345.9	465	349.7
Max. Power Voltage Vmp (V)	29.81	27.77	30.01	27.95	30.20	28.12	30.39	28.31	30.58	28.48
Max. Power Current Imp (A)	14.93	12.05	15.00	12.11	15.07	12.17	15.14	12.22	15.21	12.28
Open Circuit Voltage Voc (V)	35.30	33.54	35.47	33.70	35.64	33.86	35.81	34.02	35.98	34.18
Short Circuit Current Isc (A)	15.91	12.85	15.97	12.89	16.03	12.94	16.09	12.99	16.15	13.04
Module Efficiency (%)	22.27%		22.52%		22.77%		23.02%		23.27%	

Rear Side Power Gain

Refer. Bifaciality Factor: 80±10%

5%	Maximum Power (Pmax)	467	473	478	483	488
	Module Efficiency STC (%)	23.38%	23.65%	23.91%	24.17%	24.44%
15%	Maximum Power (Pmax)	512	518	523	529	535
	Module Efficiency STC (%)	25.61%	25.90%	26.19%	26.48%	26.76%
25%	Maximum Power (Pmax)	556	563	569	575	581
	Module Efficiency STC (%)	27.84%	28.15%	28.46%	28.78%	29.09%

Operating Parameters

Maximum System Voltage(V)	1500(DC)
Operating Temperature(°C)	-40°C ~ +85°C
Max. Wind Load / Snow Load(Pa)	2400/5400
Max. Over Current(A)	35

Temperature Coefficients

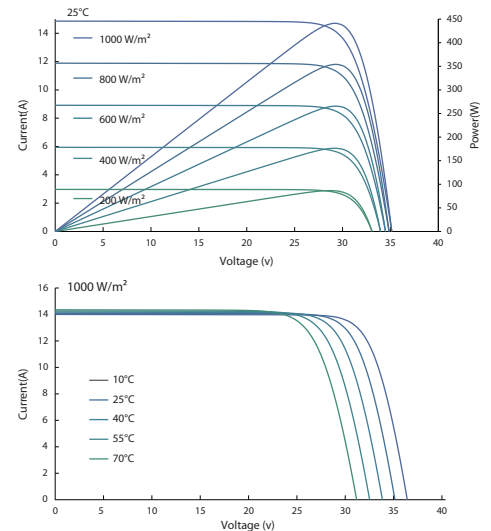
Temperature Coefficients of Pmp	-0.29%/°C
Temperature Coefficients of Voc	-0.23%/°C
Temperature Coefficients of Isc	+0.04%/°C
NMOT	45°C±2°C

Package Information

Quantity / Pallet	36 pcs
Container 40'HQ	26 pallets, 936 pcs

Partner's Notes

I-V Curves



*The specification and key features described in this datasheet may deviate slightly and are not guaranteed. Due to ongoing innovation, R&D enhancement, Zhejiang Beyondsun Green Energy Technology Co., Ltd. reserves the right to make any adjustment to the information described herein at any time without notice. Please always obtain the most recent version of the datasheet which shall be duly incorporated into the binding contract made by the parties governing all transactions related to the purchase and sale of the products described herein.