



TSBHNM-96HTG

**430-450W**

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 & Insurance



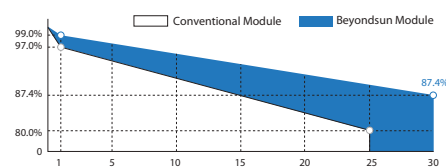
12-year Warranty for Material & Workmanship



30-year Warranty for Linear Power Output



Product & Performance Insured by LLOYDS & PingAn



### The Ideal Solution for



Residential rooftop projects

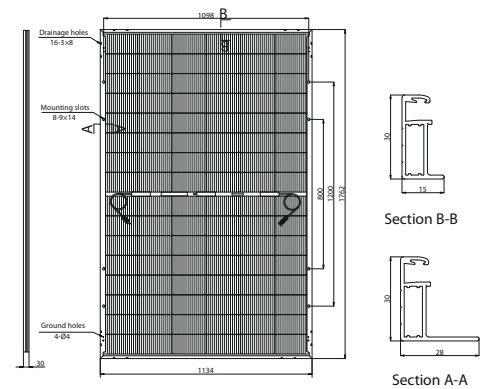


Commercial / industrial rooftop projects

## Mechanical Parameters

Cell Type	Mono 182×105mm
Cell Arrangement	96pcs 2×(6×8)
Dimension (L×W×H)	1762×1134×30mm
Weight	25.5kg
Front Cover	Dual glass 2.0mm coated tempered glass
Back Cover	2.0mm Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 Bypass Diodes
Cable	4mm <sup>2</sup> , +400mm, -300mm, or customizable
Connector	PV Connector

## Technical Drawings (mm)



## Electrical Parameters

STC: 1000W/m<sup>2</sup>, 25 °C, AM 1.5 NMOT: 800W/m<sup>2</sup>, AM 1.5, 20°C, 1m/s Pmax tolerance 0~+3%

Module Type	TSBHNM430-96HTG		TSBHNM435-96HTG		TSBHNM440-96HTG		TSBHNM445-96HTG		TSBHNM450-96HTG	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Max. Power Output Pmax (W)	430	323.4	435	327.1	440	330.9	445	334.6	450	338.4
Max. Power Voltage Vmp (V)	29.22	27.23	29.42	27.40	29.62	27.58	29.81	27.77	30.01	27.95
Max. Power Current Imp (A)	14.72	11.88	14.79	11.94	14.86	12.00	14.93	12.05	15.00	12.11
Open Circuit Voltage Voc (V)	34.80	33.06	34.97	33.22	35.14	33.38	35.30	33.54	35.47	33.70
Short Circuit Current Isc (A)	15.73	12.70	15.79	12.75	15.85	12.80	15.91	12.85	15.97	12.89
Module Efficiency (%)	21.52%		21.77%		22.02%		22.27%		22.52%	

## Rear Side Power Gain

Refer. Bifaciality Factor: 80 ± 10%

Irradiance	Parameter	TSBHNM430-96HTG		TSBHNM435-96HTG		TSBHNM440-96HTG		TSBHNM445-96HTG		TSBHNM450-96HTG	
		Value	Value	Value	Value	Value	Value	Value	Value	Value	Value
5%	Maximum Power (Pmax)	452	457	462	467	473					
	Module Efficiency STC (%)	22.60%	22.86%	23.12%	23.38%	23.65%					
15%	Maximum Power (Pmax)	495	500	506	512	518					
	Module Efficiency STC (%)	24.75%	25.04%	25.32%	25.61%	25.90%					
25%	Maximum Power (Pmax)	538	544	550	556	563					
	Module Efficiency STC (%)	26.90%	27.21%	27.53%	27.84%	28.15%					

## 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	-0.30%/°C
Temperature Coefficients of Voc	-0.25%/°C
Temperature Coefficients of Isc	+0.046%/°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

