



# TSBHNM-120HVG

# 475-495W

## 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



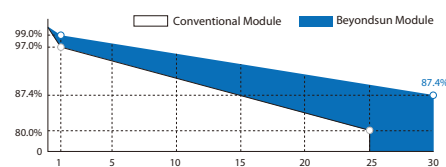
25-year Warranty for Material & Workmanship



30-year Warranty for Linear Power Output



Product & Performance Insured by LLOYD'S & PingAn



### The Ideal Solution for



Residential rooftop projects



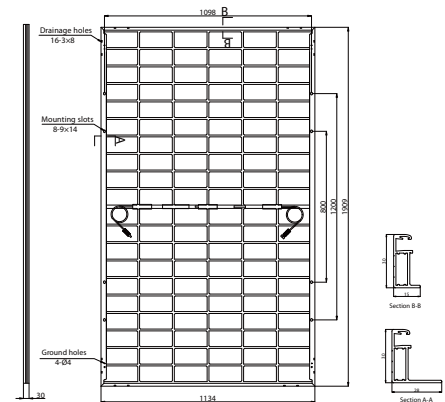
Commercial / industrial rooftop projects

# POWER TSBHNM-120HVG 475-495W

## Mechanical Parameters

Cell Type	N Type Mono
Cell Arrangement	120pcs 2x(6x10)
Dimension (LxWxH)	1909x1134x30mm
Weight	26.2kg
Front Cover	2.0mm AR Coating Tempered Glass
Back Cover	2.0mm Heat Strengthened Glass with White Grid
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	TSBHNM475-120HVG		TSBHNM480-120HVG		TSBHNM485-120HVG		TSBHNM490-120HVG		TSBHNM495-120HVG	
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Max. Power Output Pmax (W)	475	357	480	361	485	365	490	368	495	372
Max. Power Voltage Vmp (V)	35.37	32.94	35.51	33.06	35.64	33.22	35.77	33.28	35.90	33.43
Max. Power Current Imp (A)	13.43	10.84	13.52	10.92	13.61	10.99	13.70	11.06	13.79	11.13
Open Circuit Voltage Voc (V)	41.84	39.75	41.99	39.89	42.14	40.03	42.29	40.18	42.44	40.32
Short Circuit Current Isc (A)	14.32	11.56	14.40	11.63	14.49	11.70	14.57	11.76	14.66	11.84
Module Efficiency (%)	21.94%		22.17%		22.40%		22.63%		22.87%	

## Rear Side Power Gain

Refer. Bifaciality Factor: 80±10%

Irradiance	Parameter	TSBHNM475-120HVG		TSBHNM480-120HVG		TSBHNM485-120HVG		TSBHNM490-120HVG		TSBHNM495-120HVG	
		Value	Value	Value	Value	Value	Value	Value	Value	Value	Value
5%	Maximum Power (Pmax)	499	504	509	515	520					
	Module Efficiency STC (%)	23.04%	23.28%	23.52%	23.77%	24.01%					
15%	Maximum Power (Pmax)	546	552	558	564	569					
	Module Efficiency STC (%)	25.23%	25.50%	25.76%	26.03%	26.30%					
25%	Maximum Power (Pmax)	594	600	606	613	619					
	Module Efficiency STC (%)	27.43%	27.72%	28.00%	28.29%	28.58%					

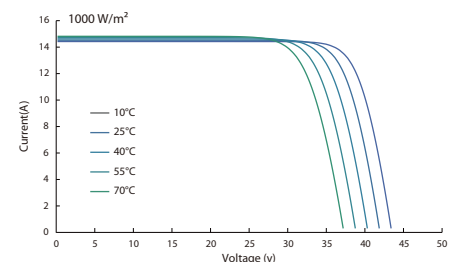
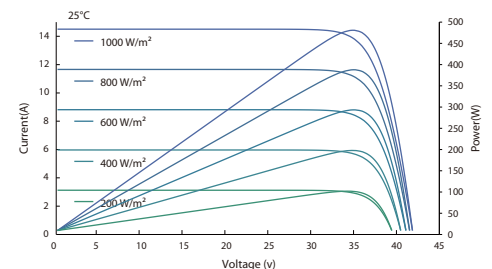
## Operating Parameters

Maximum System Voltage(V)	1500(DC)
Operating Temperature(°C)	-40°C ~ +85°C
Max. Wind Load / Snow Load(Pa)	1500V
Max. Over Current(A)	30A

## 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

## I-V Curves



## Package Information

Quantity / Pallet	36 pcs
Container 40'HQ	24 pallets, 864 pcs

## Partner's Notes

\*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.