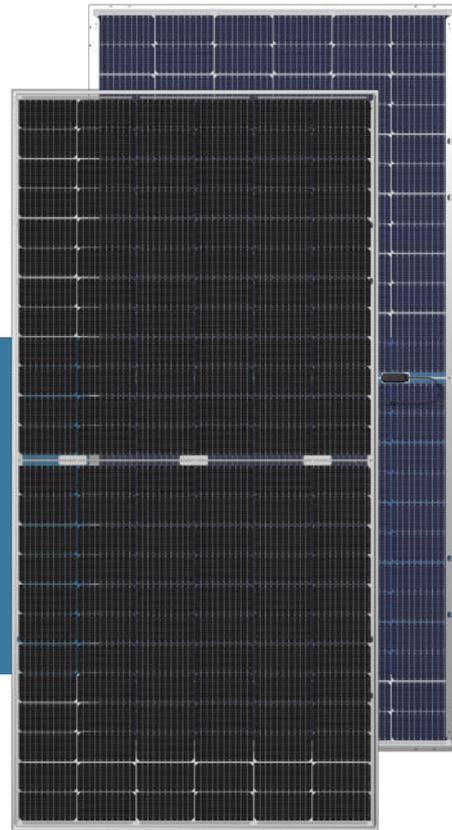


# BiDrive Series

## TSBHM-144HWG 440-450

### High Efficiency Bifacial Mono PERC Half-cell Solar Module (166)



#### ABOUT BEYONDSUN

Founded in 2008, Beyondsun is the world's leading PV manufacturer and one-stop solution provider. With multiple manufacturing bases and more than 8 branches around the world, our business covers cells, modules, aluminum frame and PV projects. With its advantages of continuous technological innovation, strong financial performance, and well-established global sales and service networks, Beyondsun has been highly recognized by its global partners. Until now, Beyondsun has distributed more than 8 GW PV products to over 30 countries all over the world. We are committed to collaborate with our partners in driving renewable energy together.



#### ULTRA HIGH MODULE EFFICIENCY

More power output with 166 MBB mono PERC half-cut cell



#### MORE ENERGY YIELD

Bifacial cell, additional 5%-30% more energy yield from rear side



#### LOWER OPERATING TEMPERATURE, MORE RELIABLE

Lower operating temperature and hot spot temperature during the sunny day, making the module prevail during the sunny days



#### BETTER SHADING TOLERANCE

Thanks to paralleling circuit design, more power generated under shading condition and during morning & evening time



#### BETTER MICRO CRACK RESISTANCE

Minimize the impact by micro crack by limiting cell damage and potentially extending area by half-cut module architecture



#### 1500V SYSTEM VOLTAGE

Approved IEC1500Vdc system voltage, saving on BoS cost

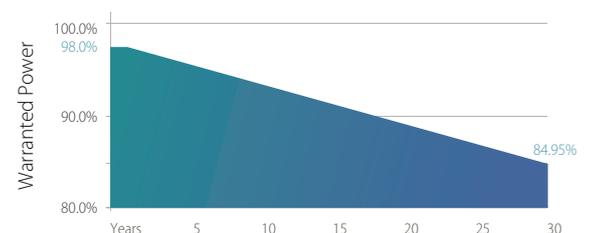
#### QUALIFICATIONS & CERTIFICATES

- IEC 61215 / IEC 61730
- ISO 9001: Quality Management System
- ISO 14001: Environment Management System
- OHSAS 18001: Occupational Health and Safety



#### INDUSTRY LEADING WARRANTY

- 30-Year** Linear Performance Warranty
- 12-Year** Product Material & Workmanship Warranty
- LLOYDS** Product & Performance Insured by LLOYD'S



#### THE IDEAL SOLUTION FOR



Ground-mounted projects



Commercial / industrial rooftop projects

# BiDrive Series TSBHM-144HWG 440-450

## ELECTRICAL PARAMETERS @ STC\*

Module Type	TSBHM440-144HWG		TSBHM445-144HWG		TSBHM450-144HWG	
	STC	NMOT	STC	NMOT	STC	NMOT
Test Condition	STC	NMOT	STC	NMOT	STC	NMOT
Max. Power Output Pmax (W)	440	331	445	334	450	338
Power Tolerance	0~+3%	0~+3%	0~+3%	0~+3%	0~+3%	0~+3%
Max. Power Voltage Vmp (V)	41.67	38.82	41.87	39.01	42.06	39.19
Max. Power Current Imp (A)	10.56	8.52	10.63	8.57	10.70	8.63
Open Circuit Voltage Voc (V)	50.05	47.57	50.26	47.77	50.43	47.93
Short Circuit Current Isc (A)	11.22	9.05	11.29	9.10	11.36	9.16
Module Efficiency (%)	20.24%		20.47%		20.70%	

\*STC (Standard Test Condition): Irradiance 1000W/m<sup>2</sup>, Cell Temperature 25 °C, Air Mass 1.5

\*NMOT (Nominal Module Operating Temperature), Irradiance of 800W/ m<sup>2</sup>, Spectrum AM 1.5, Ambient Temperature 20°C, Wind Speed 1m/s

## REAR SIDE POWER GAIN

5%	Maximum Power (Pmax)	462	467	473
	Module Efficiency STC (%)	21.26%	21.49%	21.76%
15%	Maximum Power (Pmax)	506	512	518
	Module Efficiency STC (%)	23.28%	23.56%	23.83%
25%	Maximum Power (Pmax)	550	556	563
	Module Efficiency STC (%)	25.30%	25.58%	25.90%

## TEMPERATURE COEFFICIENTS

Temperature Coefficients of Pmp	-0.36%/°C
Temperature Coefficients of Voc	-0.29%/°C
Temperature Coefficients of Isc	+0.048 %/°C
NMOT	41°C±3°C

## MECHANICAL PARAMETERS

Cell Type	Mono, 166x83mm
Cell Arrangement	144 pcs (2x(6x12))
Dimension (LxWxH)	2094x1038x30mm
Weight	27.5kg
Front Cover / Back Cover	2.0mm AR Coating Tempered Glass / 2.0mm Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68, 3 bypass diodes
Cable	4mm <sup>2</sup> solar cable, 400mm (customizable)
Connector	MC4 compatible

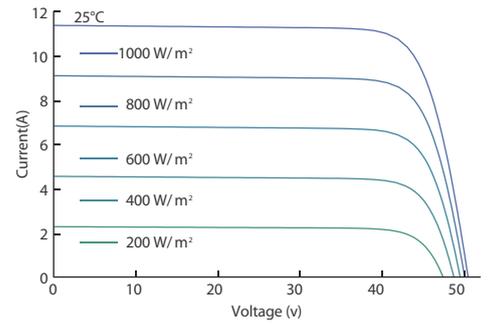
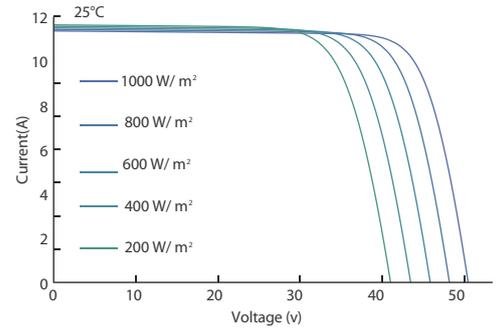
## OPERATING PARAMETERS

Maximum System Voltage(V)	1500(DC)
Operating Temperature(°C)	-40~+85
Max. Wind Load / Snow Load(Pa)	2400/5400
Max. Over Current(A)	25
Application Class	Class A
Fire Rating	Class A

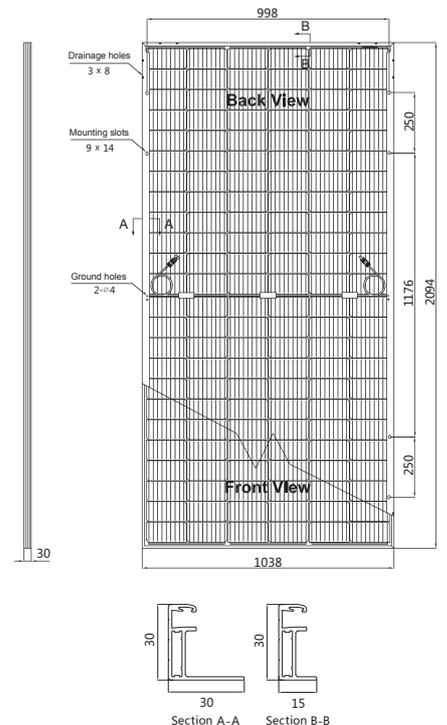
## PACKAGE INFORMATION

Quantity / Pallet	35 pcs
Container 40'HQ	22 pallets, 770 pcs

## I-V CURVES



## TECHNICAL DRAWINGS



\*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.