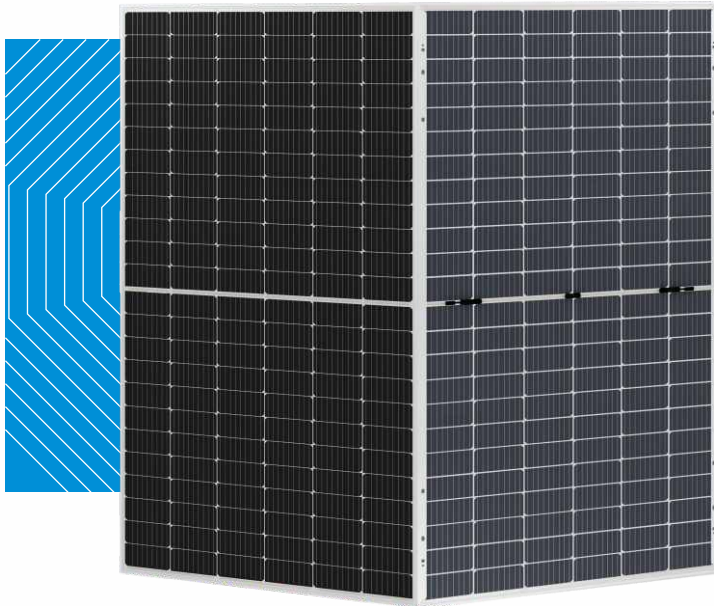
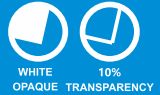





**RAYTECH
DOUBLE-GLASS BIFACIAL MODULE**

**72 LAYOUT
P-TYPE/MONO/BIFACIAL**
**435-460W
POWER OUTPUT**
**21.1%
MAX. EFFICIENCY**

COMPANY PROFILE

Ningbo Raytech New Energy Materials Co., Ltd. (referred to as Raytech) is a national high-tech enterprise focusing on "new energy and new materials", integrating R&D, design, manufacturing sales and service. The company's main team has been focusing on the R&D and manufacturing of double-glass solar panels since 2009. its production bases are located in Zhejiang, Jiangsu, and Shandong. The company has an independent technology R&D team, a national key laboratory, and a fully automatic productionline for intelligent manufacturing. The product and quality control standards have reached the industry-leading level.

The company's products have obtained: TuV certification, UL certification, Australian CEC accreditation, Brazil INMETRO certification, the first batch of "Double Glass Leader Certification" in China, ISO9001 international quality system certification, 3C certification and many other authoritative certifications.

Raytech adheres to the business philosophy of "centering on user value and oriented to win-win cooperation", adheres to the principle of "pragmatic, inclusive, refined, and innovative", and carries the vision of "let the golden sunshine restore its natural color" to serve and contribute to the promotion of diversified applications of clean energy.

PRODUCT FEATURES

- 
Optimized Power Gain
 - 25% Max. Rear-side Power Gain;
 - Half-Cell Cutting Technology to Lower the Output Power Losses Brought by Shading;
 - Integrates Multiple-Busbar(MBB) Tech, Higher Power Output
- 
Working Condition Compatibility & Safety
 - High Resistance to High Temp., High Humidity, Sand, Acid and Alkali Environment;
 - 5400Pa Snow Loading, 2400Pa Wind Loading;
 - Frames with Light Double Glass to meet customer's Requirements of Lightness and Safety
- 
Higher-Than-Ever ROI
 - 1500V System Voltage, Lower BOS Cost;
 - Annual Degradation < 0.45%, 30-year Linear Performance Warranty;

CERTIFICATION

CONTACT US

Ningbo Raytech New Energy Materials Co.,Ltd
 Address: Huyong Industry Park, 18 Qiyuan Road, Hangzhou Bay New District, Ningbo City, Zhejiang, China
 Tel: +86-400-155-9909
 Website: www.raytech-energy.com
 Email: sales@raytm.cn

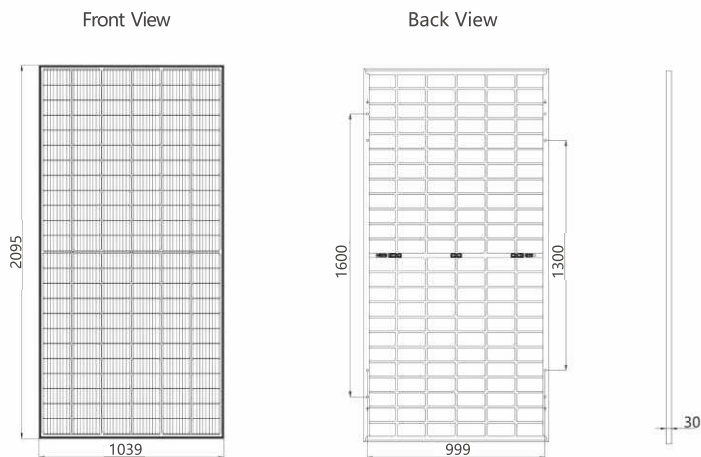


Scan the code to browse our website

P-type Bifacial Double-Glass Module: 435-460W

ENGINEERING DRAWING

MECHANICAL SPECIFICATIONS



Cell Type	Mono crystalline
Solar Cells	144(6*24)
Module Dimension [mm]	2095*1039*30mm
Weight [Kg]	26.5
Front Glass [mm]	2.0 Semi tempered coated glass
Interlayer	EVA/POE/PVB
Backsheet	2.0 Semi tempered glass
Junction Box	Ip68 Rated, 3 by-pass diodes
Connector	Multi-Contact MC4(or equivalent)
Frame	30mm Aluminum Frame
Maximum Load Capacity [Pa]	2400(wind load)/5400(snow load)

ELECTRICAL CHARACTERISTICS

Product model	BPDMJ72H(S)-435		BPDMJ72H(S)-440		BPDMJ72H(S)-445		BPDMJ72H(S)-450		BPDMJ72H(S)-455		BPDMJ72H(S)-460		
	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	
Maximum Power at STC [Pmax]	[W]	435	325	440	329	445	333	450	336	455	340	460	344
Open Circuit Voltage [Voc]	[V]	49.01	45.8	49.29	46.0	49.54	46.3	49.75	46.5	49.95	46.7	50.09	46.78
Short Circuit Current [Isc]	[A]	11.34	9.14	11.38	9.18	11.42	9.21	11.46	9.24	11.52	9.29	11.61	9.36
Voltage at Maximum Power point[Vm]	[V]	40.76	37.4	41.06	37.7	41.33	37.9	41.55	38.1	41.76	38.3	41.91	38.47
Current at Maximum Power point[Im]	[A]	10.67	8.69	10.72	8.73	10.77	8.77	10.83	8.82	10.90	8.87	10.98	8.94
Power Tolerance	[W]	0~+5											
Module Efficiency	[%]	19.9		20.2		20.4		20.6		20.9		21.1	

STC: Air Mass AM1.5, Ir-radiance 1000W/m² Cell temperature 25°C. NMOT: Air Mass AM1.5, Ir-radiance 800W/m² Ambient temperature 20°C, wind speed 1m/s. Power Tolerance: ±3%

DOUBLE SIDES POWER OUTPUT (BACK GAIN)

Gain	Parameter	[W]	435	440	445	450	455	460
5%	Maximum Power	[W]	457	462	467	473	478	483
10%	Maximum Power	[W]	479	484	490	495	501	506
15%	Maximum Power	[W]	500	506	512	518	523	529
20%	Maximum Power	[W]	522	528	534	540	546	552

Bifaciality=70±5%

WORKING CONDITIONS

Maximum System Voltage(With S)	[V]	1000 DC(IEC)
Maximum System Voltage(Without S)	[V]	1500 DC(IEC)
Operating Temperature	[°C]	-40~+85
Nominal Operating Cell Temperature	[°C]	45±3
Maximum rated current	[A]	20

TEMPERATURE COEFFICIENTS

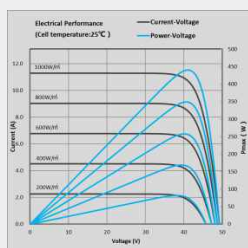
Temperature Coefficient of Pmax	[%/°C]	-0.42
Temperature Coefficient of Voc	[%/°C]	-0.33
Temperature Coefficient of Isc	[%/°C]	0.04

PACKAGE CONFIGURATION

Per box 35 pieces 40" HQ770 pieces

ELECTRICAL CURVES

LINEAR PERFORMANCE WARRANTY



— I-V Curve
— P-V Curve

NO MORE THAN 0.45% ANNUAL DEGRADATION OVER 30 YEARS

