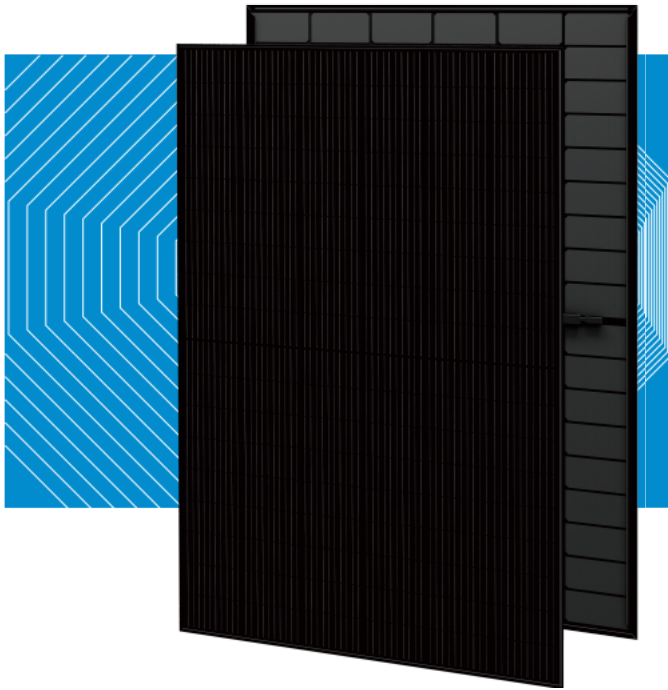


RAYTECH
DOUBLE-GLASS BIFACIAL MODULE

54LAYOUT
 NTOPCON/MONO/BIFACIAL

410-435W
 POWER OUTPUT

22.3%
 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 production line for intelligent manufacturing. The product and quality control standards have reached the industry-leading level.

The company's products have obtained: TÜV certification, UL certification, Australian CEC accreditation, Brazil INMETRC 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

- Use N-type cells, no light-induced degradation (LID), increase power generation;
- Excellent low-light response, higher power generation under low-light conditions
- Better temperature coefficient, higher power output under working conditions
- Higher bifaciality, the additional power generation of modules is up to 30% higher than that of conventional modules


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;
- Initial Degradation less than 1%, annual degradation no more than 0.4%, 30 years Linear performance warranty, higher power output

CERTIFICATION

CONTACT US

Ningbo Raytech New Energy Materials Co., Ltd
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 Tel: +86-400-155-9909
 Website: www.raytech-energy.com
 Email: sales@raytm.cn



Scan the code to browse our website

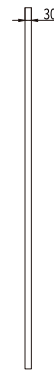
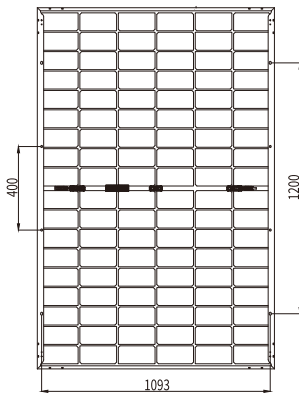
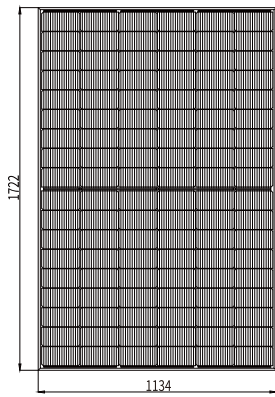
NTOPCON Bifacial Double-Glass Module: 410-435W

ENGINEERING DRAWING

MECHANICAL SPECIFICATIONS

Front View

Back View



Cell Type	Ntype mono cells
Solar Cells	108(6*18)
Module Dimension [mm]	1722*1134*30
Weight [Kg]	24.5
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		BNDMTN54H-410		BNDMTN54H-415		BNDMTN54H-420		BNDMTN54H-425		BNDMTN54H-430		BNDMTN54H-435	
		STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT	STC	NMOT
Maximum Power at STC [Pmax]	[W]	410	310	415	314	420	318	425	321	430	325	435	329
Open Circuit Voltage [Voc]	[V]	37.90	35.85	38.11	36.05	38.32	36.25	38.53	36.45	38.74	36.65	38.95	36.85
Short Circuit Current [Isc]	[A]	13.84	11.17	13.92	11.24	14.00	11.30	14.08	11.37	14.16	11.43	14.24	11.50
Voltage at Maximum Power point[Vm]	[V]	31.04	29.12	31.25	29.31	31.46	29.51	31.67	29.71	31.88	29.90	32.09	30.10
Current at Maximum Power point[Im]	[A]	13.21	10.65	13.28	10.71	13.35	10.77	13.42	10.82	13.49	10.88	13.56	10.93
Power Tolerance	[%]	21.0%		21.3%		21.5%		21.8%		22.0%		22.3%	
Module Efficiency	[W]	0~+5											

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

COMPREHENSIVE ELECTRIC PARAMETERS (TAKING 425W AS AN EXAMPLE)

Back Gain	Pmax(W)	Voc(V)	Lsc(A)	Vmp(V)	Lmp(A)
5%	446	38.53	14.78	31.67	14.09
10%	468	38.53	15.49	31.67	14.76
15%	489	39.53	16.19	32.67	14.96
20%	510	39.53	16.90	32.67	15.61
25%	531	39.53	17.60	32.67	16.26

Bifaciality= 80±5%

WORKING CONDITIONS

Maximum System Voltage	[V]	1000 / 1500 DC(IEC)
Operating Temperature	[°C]	-40~+85
Nominal Operating Cell Temperature	[°C]	42±3
Maximum rated current	[A]	30
Fire rating	-	Class C

TEMPERATURE COEFFICIENTS

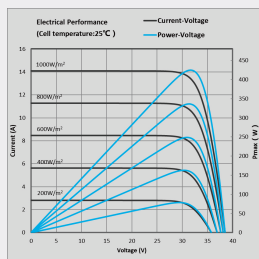
Temperature Coefficient of Pmax	[%/°C]	-0.35
Temperature Coefficient of Voc	[%/°C]	-0.28
Temperature Coefficient of Isc	[%/°C]	0.046

PACKAGE CONFIGURATION

Per box 36 pieces 40"HQ936 pieces

ELECTRICAL CURVES

LINEAR PERFORMANCE WARRANTY



— I-V Curve
— P-V Curve

NO MORE THAN 0.45% ANNUAL DEGRADATION OVER 30 YEARS

