

Mono

Bifacial

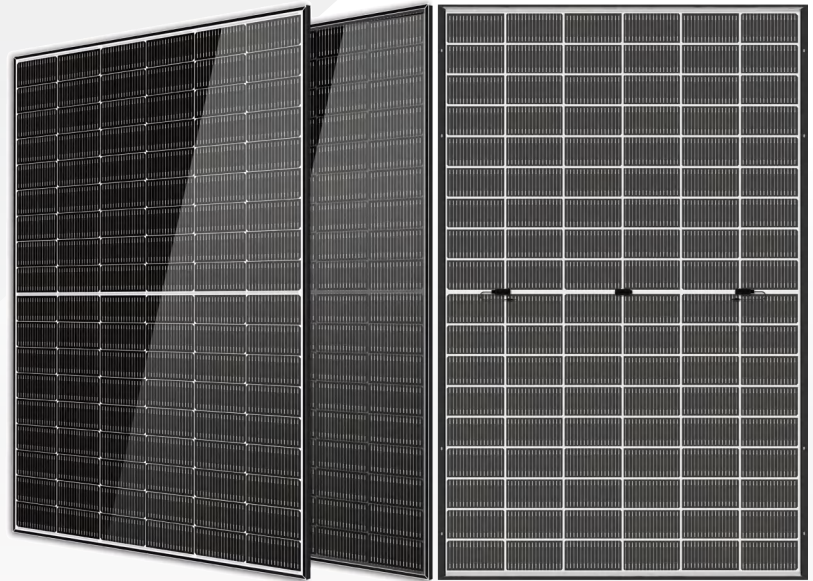
HORAY

Solar Ocean

425-445 Watt TOPCon

MONO-BIFACIAL MODULE

- IEC61215: 2021
- IEC61730: 2016
- TUV Rheinland Standard
- Lloyd'S Ariel Re
- Solar Performance Insurance
- ISO9001: 2015
- Quality Management System
- ISO14001:
- Environmental Management System
- CE: Europe Standard
- Inmetro Certificate
- Japan JP-AC



KEY FEATURES



SMBB Cell

More uniform current collection capability, reducing the current heat loss of the internal cells.



Low Light Features

Higher performance under low light environment.



Higher Output Power

The output power of 108 half-cells Monocrystalline modules is up to 445W.



LID Free

N-type solar cell has no LID naturally which can increase power generation.



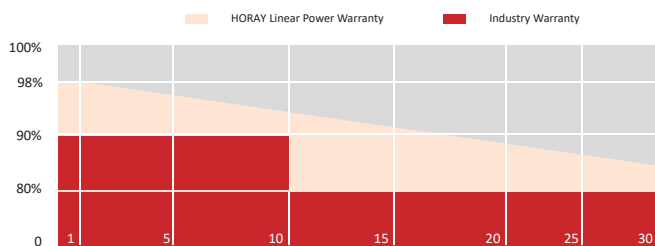
Harsh Environmental Adaptability

Strict salt spray and ammonia corrosion test by the third party.



Load Capacity

Mechanical load tests including wind load 2400 Pa and snow load 5400 Pa.



HEADQUARTER: HORAY SOLAR CO., LTD.

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SPECIFICATIONS

Weight	24kg
Dimension	1762mm*1134mm*30mm
Cell Dimension	182.2*93.4mm
Cell Amount	54*2 pcs
Maximum System Voltage	1500V
Junction Box	IP68
Type of the front glass	2.0mm Coated ultra clear glass
Type of the back glass	2.0mm Heat-strengthened glass
Frame	Aluminum Alloy
Cable	4mm ² ,+300,-300mm;Length can be customized
Connector	MC4 compatible
Application Level	Class A

ELECTRICAL PARAMETERS AT STC

Module Type	HS425TC-MHA-D	HS430TC-MHA-D	HS435TC-MHA-D	HS440TC-MHA-D	HS445TC-MHA-D
Power	425W	430W	435W	440W	445W
Open Circuit Voltage	38.95V	39.16V	39.36V	39.57V	39.77V
Short Circuit Current	13.58A	13.65A	13.72A	13.8A	13.87A
Maximum Power Voltage	32.37V	32.58V	32.78V	32.99V	33.19V
Maximum Power Current	13.13A	13.2A	13.27A </td <td>13.34A</td> <td>13.41A</td>	13.34A	13.41A
Module Efficiency	21.3%	21.5%	21.8%	22.0%	22.3%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.

ELECTRICAL PARAMETERS AT BNPI

Power	468W	473W	478W	484W	490W
Open Circuit Voltage	38.95V	39.16V	39.36V	39.57V	39.77V
Short Circuit Current	14.94A	15.02A	15.09A	15.18A	15.26A
Maximum Power Voltage	32.37V	32.58V	32.78V	32.99V	33.19V
Maximum Power Current	14.44A	14.52A	14.60A	14.67A	14.75A

*Rear side power gain:The additional gain from the rear side compared to the power of the front side at the standard test condition. It depends on mounting (structure,height,tilt angle etc.)and albedo of the ground.

ELECTRICAL PARAMETERS AT NMOT

Power	324W	328W	331W	335W	339W
Open Circuit Voltage	38.95V	39.16V	39.36V	39.57V	39.77V
Short Circuit Current	10.35A	10.40A	10.45A	10.52A	10.57A
Maximum Power Voltage	32.37V	32.58V	32.78V	32.99V	33.19V
Maximum Power Current	10.01A	10.06A	10.11A	10.17A	10.22A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m², spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

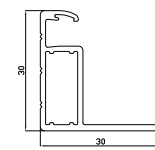
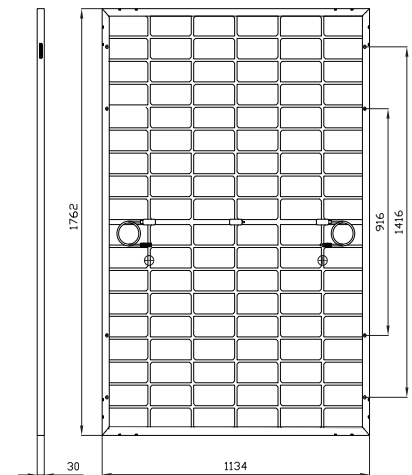
TEMPERATURE CHARACTERISTICS

NMOT	45±2°C
Temp Coefficient of ISC	+0.05%/°C
Temp Coefficient of VOC	-0.28%/°C
Temp Coefficient of Pmax	-0.34%/°C

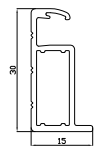
PACKING CONFIGURATION

Modules/Pallet	36 Pieces
Packaging Description	26 Pallets, Total=(36+36)x13=936 Pieces
Modules/40' Container	936 Pieces

MECHANICAL DIAGRAMS

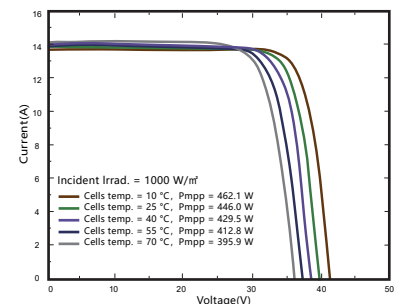
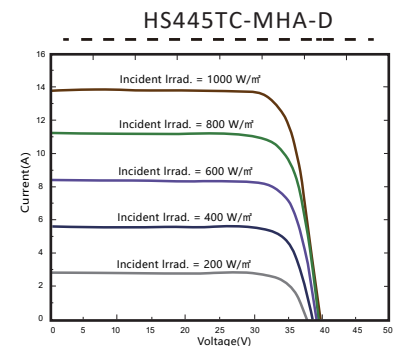


Section diagram of long frame profile



Section diagram of short frame profile

CHARACTERISTICS



MAXIMUM RATING

Power selection	0~+5W
Measuring uncertainty of Pm	0~±3%
Operating Temperature	-40°C~+85°C
Wind Load/Snow Load	2400pa/5400pa
Fuse Current	25A

30 YEARS Quality Warranty

30 YEARS Power Warranty