

Mono

Bifacial

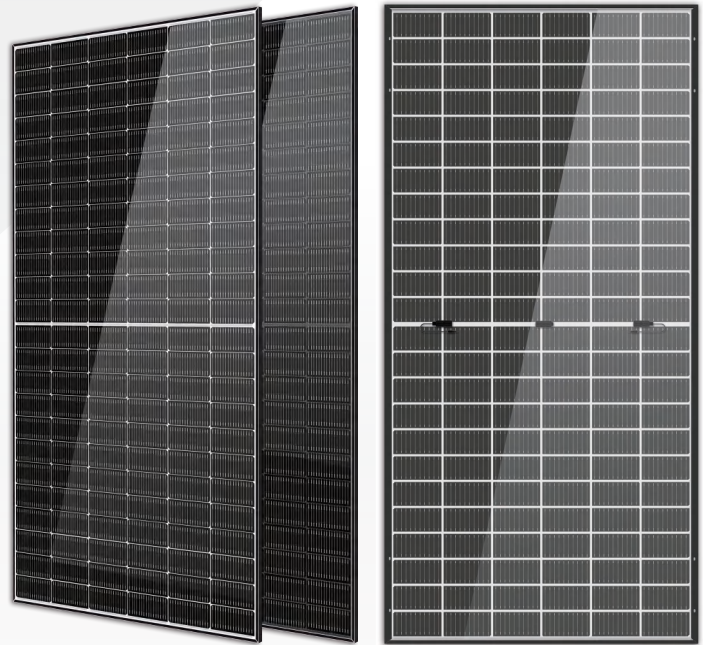
HORAY

Solar Ocean

590-610 Watt N-Type

MONO-BIFACIAL MODULE

- IEC61215: 2021
- IEC61730: 2023
- 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
- China Quality Certification Centre
- Solar product certification



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 144 half-cells Monocrystalline modules is up to 610W.



LID Free

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



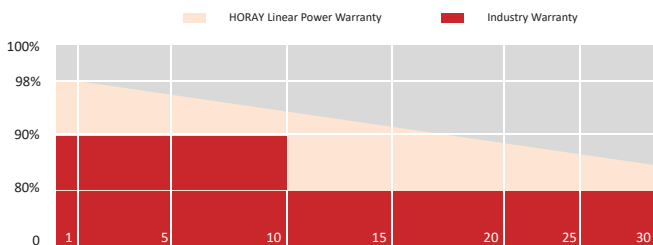
Harsh Environmental Adaptability

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.



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SPECIFICATIONS

Weight	32.5kg
Dimension	2333mm*1134mm*30mm
Cell Dimension	182.2*93.4mm
Cell Amount	72*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	HS590TC-MHA-D	HS595TC-MHA-D	HS600TC-MHA-D	HS605TC-MHA-D	HS610TC-MHA-D
Power	590W	595W	600W	605W	610W
Open Circuit Voltage	52.02V	52.24V	52.44V	52.65V	52.92V
Short Circuit Current	14.36A	14.42A	14.48A	14.55A	14.59A
Maximum Power Voltage	43.41V	43.59V	43.76V	43.94V	44.16V
Maximum Power Current	13.59A	13.65A	13.71A	13.77A	13.81A
Module Efficiency	22.3%	22.5%	22.7%	22.9%	23.1%

* 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	637W	642W	648W	653W	658W
Open Circuit Voltage	52.02V	52.24V	52.44V	52.65V	52.92V
Short Circuit Current	15.36A	15.43A	15.50A	15.56A	15.61A
Maximum Power Voltage	43.41V	43.59V	43.76V	43.94V	44.16V
Maximum Power Current	14.67A	14.73A	14.80A	14.86A	14.91A

*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	450W	453W	457W	461W	465W
Open Circuit Voltage	52.02V	52.24V	52.44V	52.65V	52.92V
Short Circuit Current	10.94A	10.99A	11.04A	11.08A	11.12A
Maximum Power Voltage	43.41V	43.59V	43.76V	43.94V	44.16V
Maximum Power Current	10.36A	10.40A	10.45A	10.49A	10.53A

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

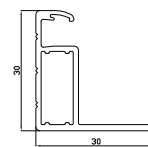
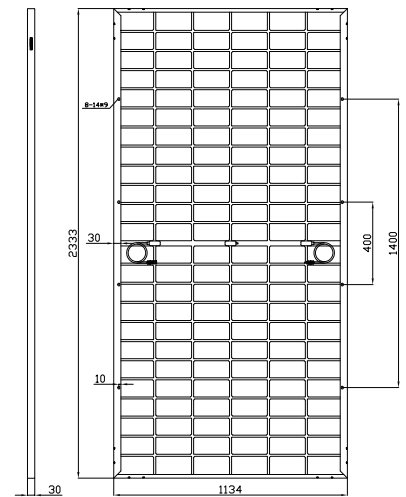
TEMPERATURE CHARACTERISTICS

NMOT	45±2°C
Temp Coefficient of ISC	+0.04%/°C
Temp Coefficient of VOC	-0.23%/°C
Temp Coefficient of Pmax	-0.28%/°C

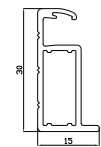
PACKING CONFIGURATION

Modules/Pallet	36 Pieces
Packaging Description	20 Pallets, Total=(36+36)x10=720 Pieces
Modules/40' Container	720 Pieces

MECHANICAL DIAGRAMS

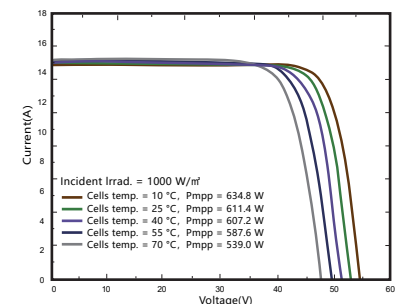
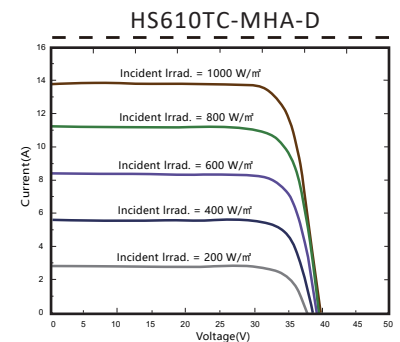


Section diagram of long frame profile



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

15 YEARS Quality Warranty

30 YEARS Power Warranty