

Mono

Bifacial

# HORAY

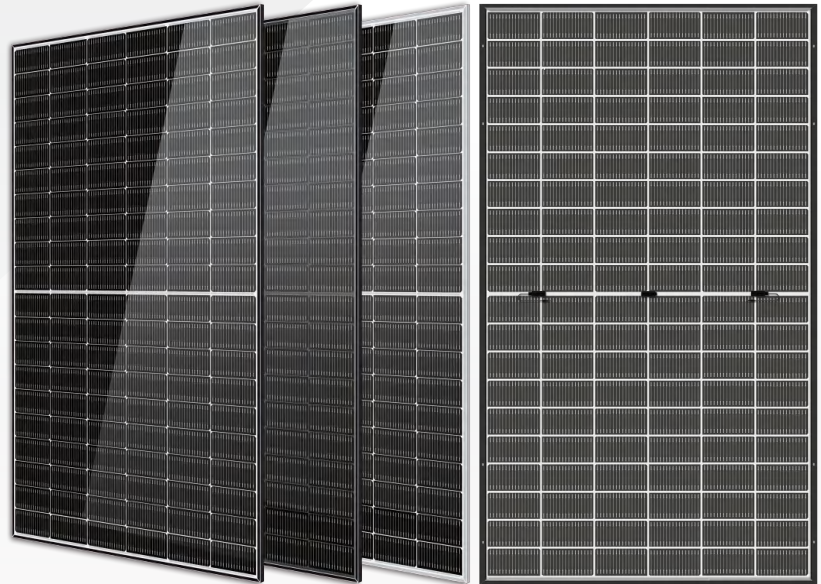
**TIER1**  
BloombergNEF

# Solar Ocean

## 490–510 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 120 half-cells Monocrystalline modules is up to 510W.



##### LID Free

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



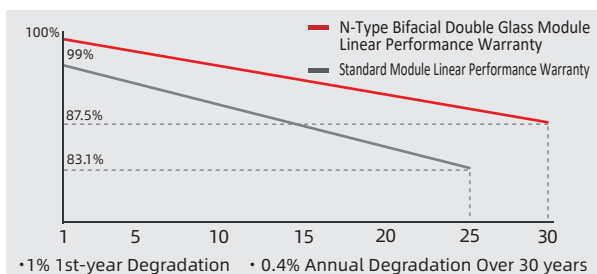
##### Harsh Environmental Adaptability

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	26kg
Dimension	1955mm*1134mm*30mm
Cell Dimension	182.2*93.4mm
Cell Amount	60*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 <sup>2</sup> ,+300,-300mm;Length can be customized
Connector	MC4 compatible
Application Level	Class A

## ELECTRICAL PARAMETERS AT STC

Module Type	HS490TC-MHA-D	HS495TC-MHA-D	HS500TC-MHA-D	HS505TC-MHA-D	HS510TC-MHA-D
Power	490W	495W	500W	505W	510W
Open Circuit Voltage	43.35V	43.53V	43.70V	43.88V	44.10V
Short Circuit Current	14.31A	14.40A	14.48A	14.57A	14.64A
Maximum Power Voltage	36.17V	36.32V	36.47V	36.62V	36.80V
Maximum Power Current	13.55A	13.63A	13.71A	13.79A	13.86A
Module Efficiency	22.2%	22.4%	22.6%	22.9%	23.1%

\* Under Standard Test Conditions (STC) of irradiance of 1000 W/m<sup>2</sup>, spectrum AM 1.5 and cell temperature of 25°C.

## ELECTRICAL PARAMETERS AT BNPI

Power	529W	534W	540W	545W	550W
Open Circuit Voltage	43.35V	43.53V	43.70V	43.88V	44.10V
Short Circuit Current	15.31A	15.40A	15.50A	15.59A	15.67A
Maximum Power Voltage	36.17V	36.32V	36.47V	36.62V	36.80V
Maximum Power Current	14.62A	14.71A	14.80A	14.89A </td <td>14.96A</td>	14.96A

\*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	373W	377W	381W	385W	389W
Open Circuit Voltage	43.35V	43.53V	43.70V	43.88V	44.10V
Short Circuit Current	10.90A	10.97A	11.04A	11.10A	11.16A
Maximum Power Voltage	36.17V	36.32V	36.47V	36.62V	36.80V
Maximum Power Current	10.32A	10.38A	10.45A	10.51A	10.56A

\* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m<sup>2</sup>, spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

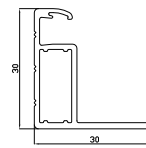
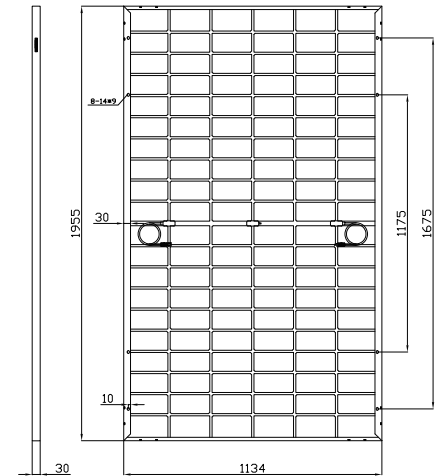
## TEMPERATURE CHARACTERISTICS

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

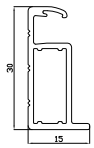
## PACKING CONFIGURATION

Modules/Pallet	37 Pieces
Packaging Description	22 Pallets, Total=(37+37)x11=814 Pieces
Modules/40' Container	814 Pieces

## MECHANICAL DIAGRAMS

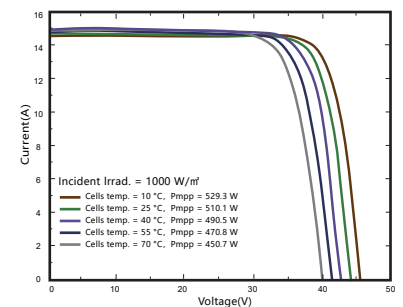
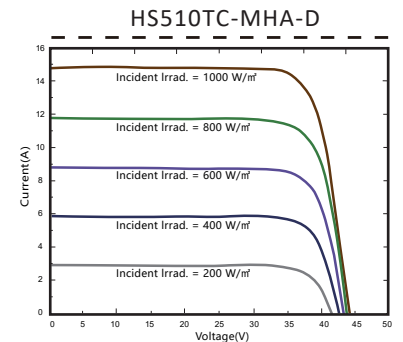


Section diagram of long frame profile



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