Mono Bifacial

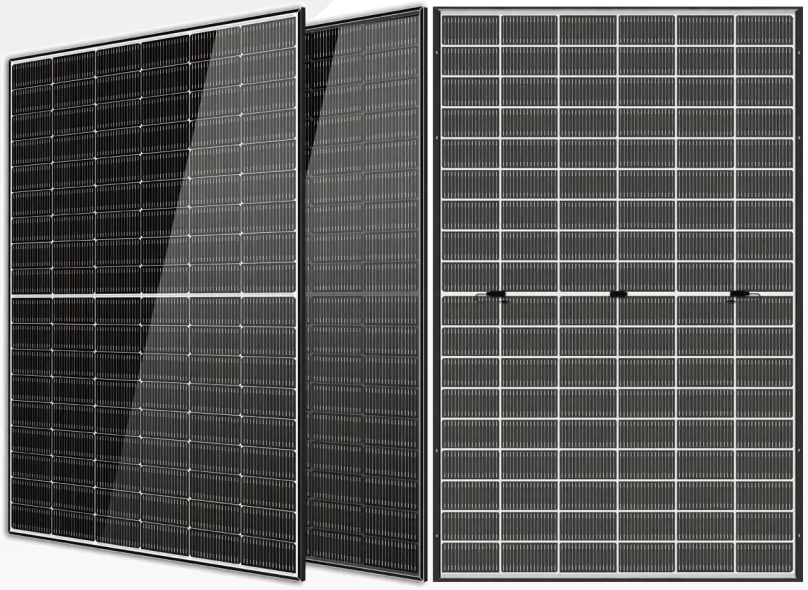
HORAY

Solar Ocean

430–450 Watt N–Type

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.

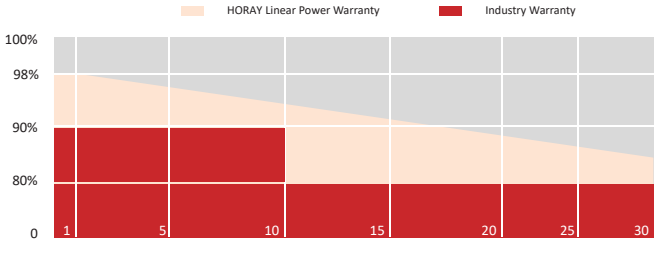
Low Light Features
Higher performance under low light environment.

Higher Output Power
The output power of 108 half-cells Monocrystalline modules is up to 450W.

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	24.5kg
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	4mm²,+300,-300mm;Length can be customized
Connector	MC4 compatible
Application Level	Class A

ELECTRICAL PARAMETERS AT STC

Module Type	HS430TC-MHA-D	HS435TC-MHA-D	HS440TC-MHA-D	HS445TC-MHA-D	HS450TC-MHA
Power	430W	435W	440W	445W	450W
Open Circuit Voltage	39.16V	39.36V	39.57V	39.77V	39.97V
Short Circuit Current	13.65A	13.72A	13.8A	13.87A	13.94A
Maximum Power Voltage	32.58V	32.78V	32.99V	33.19V	33.39V
Maximum Power Current	13.2A	13.27A	13.34A	13.41A	13.48A
Module Efficiency	21.5%	21.8%	22.0%	22.3%	22.5%

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

ELECTRICAL PARAMETERS AT BNPI

Power	473W	478W	484W	490W	495W
Open Circuit Voltage	39.16V	39.36V	39.57V	39.77V	39.97V
Short Circuit Current	15.02A	15.09A	15.18A	15.26A	15.33A
Maximum Power Voltage	32.58V	32.78V	32.99V	33.19V	33.39V
Maximum Power Current	14.52A	14.60A	14.67A	14.75A	14.82A

*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	328W	331W	335W	339W	343W
Open Circuit Voltage	39.16V	39.36V	39.57V	39.77V	39.97V
Short Circuit Current	10.40A	10.45A	10.52A	10.57A	10.62 A
Maximum Power Voltage	32.58V	32.78V	32.99V	33.19V	33.39V
Maximum Power Current	10.06A	10.11A	10.17A	10.22A	10.27A

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

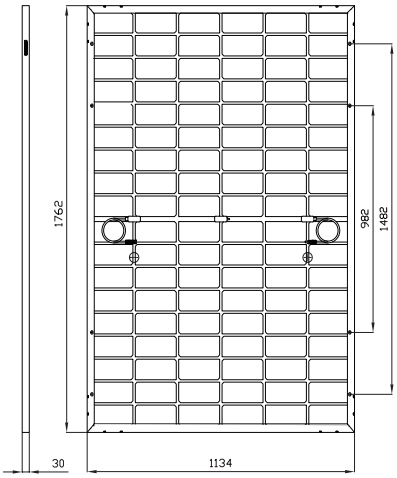
TEMPERATURE CHARACTERISTICS

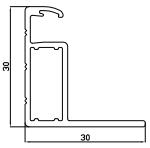
NMOT	45±2°C
Temp Coefficient of ISC	+0.05%/°C
Temp Coefficient of VOC	-0.28%/°C
Temp Coefficient of Pmax	-0.34%/°C

PACKING CONFIGURATION

Modules/Pallet	37 Pieces
Packaging Description	26 Pallets, Total=(37+37)x13=962 Pieces
Modules/40'Container	962 Pieces

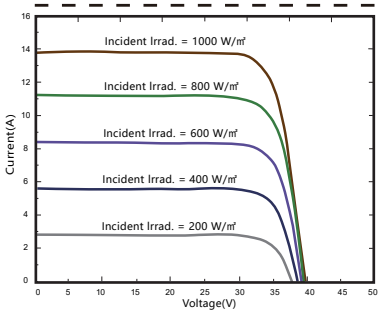
MECHANICAL DIAGRAMS

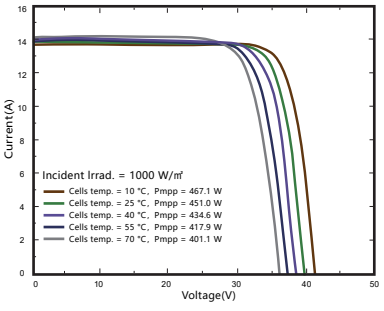




CHARACTERISTICS

HS450TC-MHA-D





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

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

Version number: MHA_D_EN_2024_A