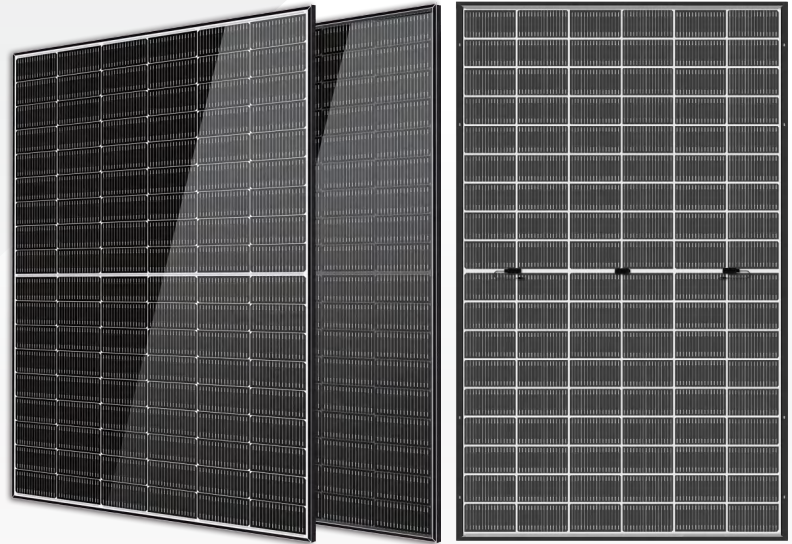


Solar Ocean

465–485 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 108 half-cells Monocrystalline modules is up to 485W.



LID Free

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



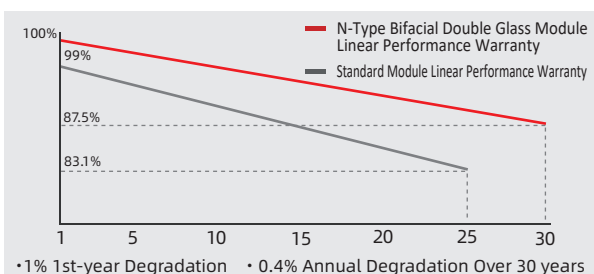
Harsh Environmental Adaptability

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.

GLOBAL MARKETING AND SERVICE: HORAY SOLAR GMBH

✉ sales@horaysolar.com 🌐 www.horaysolar.com ☎ +86-510 83580688
📍 NO.30-5, East Yanxin Road, Huishan District, Wuxi 214177 Jiangsu P.R China

✉ info@horaysolar.com 🌐 www.horaysolar.com
📍 Robert-Bosch-StraBe 27-29,63225 Langen , Germany

SPECIFICATIONS

Weight	26kg
Dimension	1862mm*1134mm*30mm
Cell Dimension	182*99.5mm
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	HS465TC-MHD-D	HS470TC-MHD-D	HS475TC-MHD-D	HS480TC-MHD-D	HS485TC-MHD-D
Power	465W	470W	475W	480W	485W
Open Circuit Voltage	38.73V	38.90V	39.08V	39.26V	39.31V
Short Circuit Current	15.08A	15.17A	15.26A	15.35A	15.49A
Maximum Power Voltage	32.85V	33.00V	33.15V	33.30V	33.35V
Maximum Power Current	14.16A	14.24A	14.33A </td <td>14.41A</td> <td>14.54A</td>	14.41A	14.54A
Module Efficiency	22.02%	22.26%	22.50%	22.73%	22.97%

* 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	512W	517W	523W	528W	534W
Open Circuit Voltage	38.73V	38.90V	39.08V	39.26V	39.31V
Short Circuit Current	16.73A	16.84A	16.94A	17.04A	17.19A
Maximum Power Voltage	32.85V	33.00V	33.15V	33.30V	33.35V
Maximum Power Current	15.57A	15.67A	15.76A	15.86A	16.00A

*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	354W	358W	362W	366W	370W
Open Circuit Voltage	38.73V	38.90V	39.08V	39.26V	39.31V
Short Circuit Current	11.49A	11.56A	11.63A	11.70A	11.80A
Maximum Power Voltage	32.85V	33.00V	33.15V	33.30V	33.35V
Maximum Power Current	10.79A	10.85A	10.92A	10.98A	11.08A

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

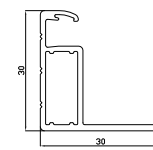
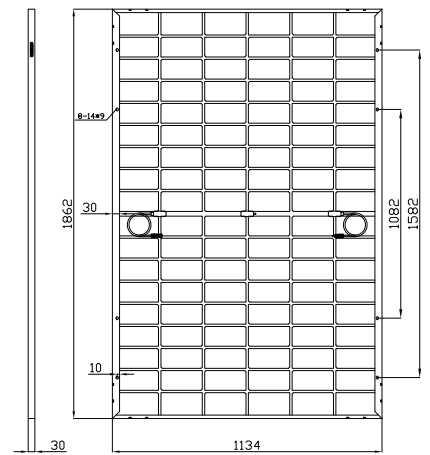
TEMPERATURE CHARACTERISTICS

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

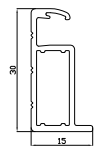
PACKING CONFIGURATION

Modules/Pallet	37 Pieces
Packaging Description	24 Pallets, Total=(37+37)x12=888 Pieces
Modules/40' Container	888 Pieces

MECHANICAL DIAGRAMS



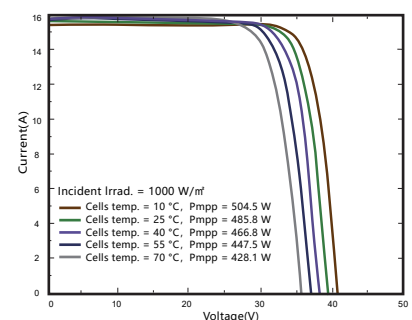
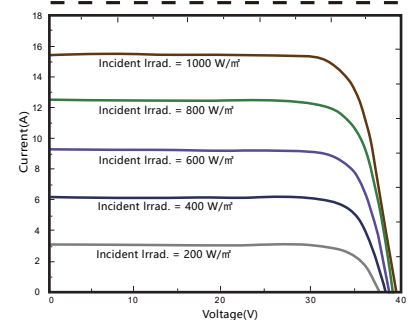
Section diagram of long frame profile



Section diagram of short frame profile

CHARACTERISTICS

HS485TC-MHD-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	30A

15 YEARS Quality Warranty

30 YEARS Power Warranty