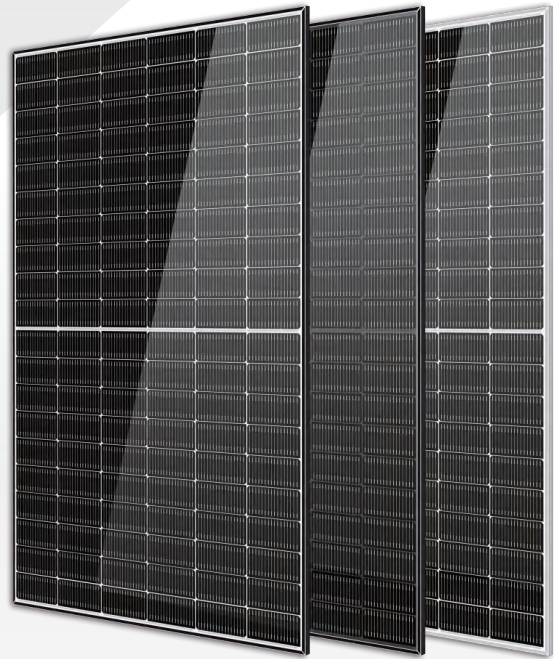


Solar Ocean

475–490 Watt N-Type MONO-FACIAL 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 490W.



LID Free

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



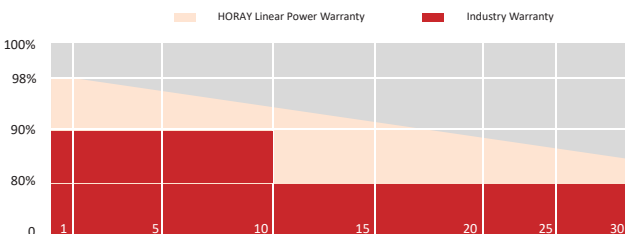
Harsh Environmental Adaptability

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.



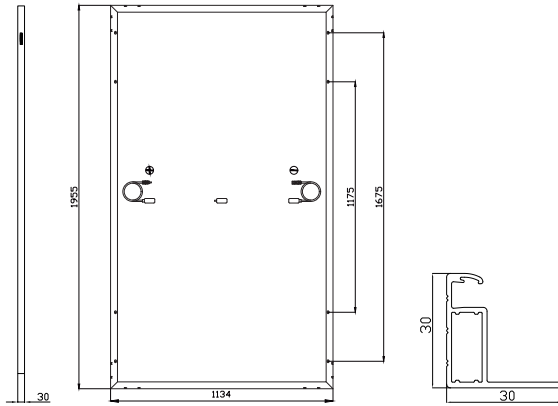
HEADQUARTER: HORAY SOLAR CO., LTD.

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MECHANICAL DIAGRAMS



SPECIFICATIONS

Weight	23kg
Dimension	1955mm*1134mm*30mm
Cell Dimension	182.2*93.4mm
Cell Amount	60*2 pcs
Maximum System Voltage	1500V
Junction Box	IP68
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	HS475TC-MHA	HS480TC-MHA	HS485TC-MHA	HS490TC-MHA
Power	475W	480W	485W	490W
Open Circuit Voltage	42.85V	43.00V	43.18V	43.35V
Short Circuit Current	14.03A	14.13A	14.22A	14.31A
Maximum Power Voltage	35.76V	35.88V	36.03V	36.17V
Maximum Power Current	13.28A	13.38A	13.46A	13.55A
Module Efficiency	21.5%	21.7%	22.0%	22.2%

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

ELECTRICAL PARAMETERS AT NMOT

Power	362W	366W	370W	373W
Open Circuit Voltage	42.85V	43.00V	43.18V	43.35V
Short Circuit Current	10.69A	10.77A	10.84	10.90A
Maximum Power Voltage	35.76V	35.88V	36.03V	36.17V
Maximum Power Current	10.12A	10.19A	10.26A	10.32A

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

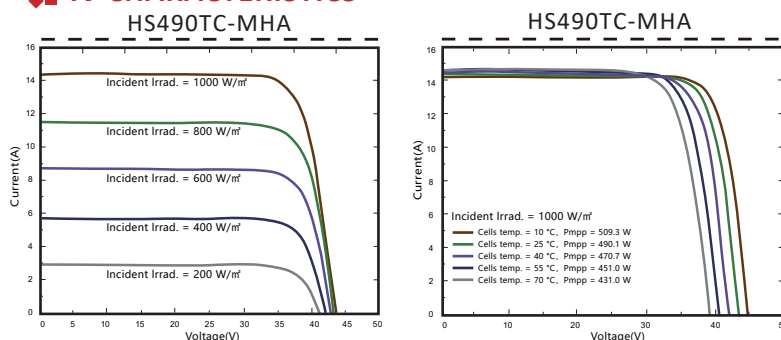
TEMPERATURE CHARACTERISTICS

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

IV CHARACTERISTICS



MAXIMUM RATING

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

12 YEARS Quality Warranty

30 YEARS Power Warranty

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

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Version number: MHA_EN_2024_A