Mono Bifacial

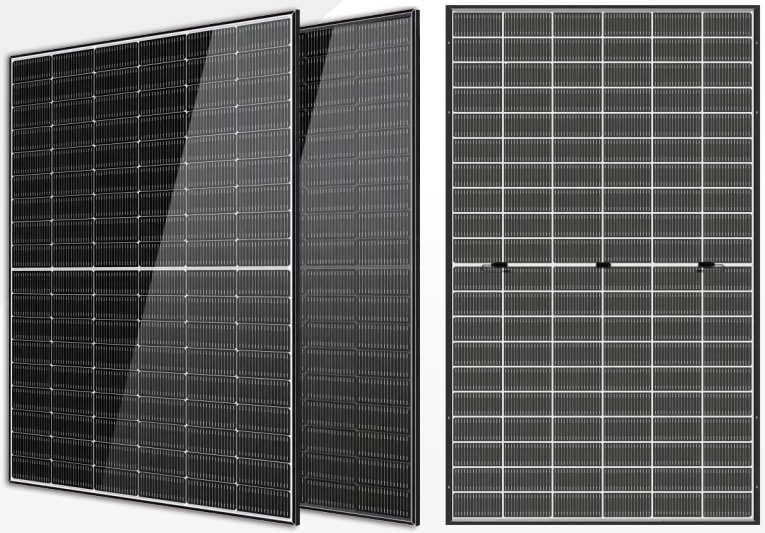
HORAY

Solar Ocean

470–490 Watt TOPCon

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.

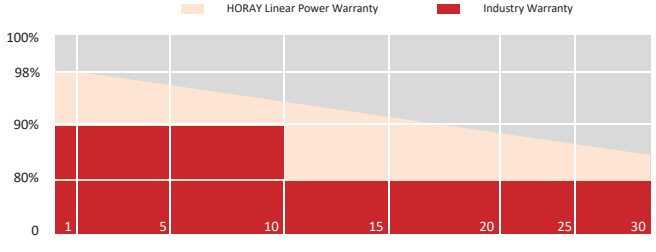
Low Light Features
Higher performance under low light environment.

Higher Output Power
The output power of 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.
sales@horaysolar.com www.horaysolar.com +86-510 83580688
NO.30-5, East Yanxin Road, Huishan District, Wuxi 214177 Jiangsu P.R China

GLOBAL MARKETING AND SERVICE: HORAY SOLAR GMBH
info@horaysolar.com www.horaysolar.com
Robert-Bosch-Str. 29,Langen,Frankfurt am Main, Germany

SPECIFICATIONS

Weight	28.0kg
Dimension	1909mm*1134mm*35mm
Cell Dimension	182*91mm
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	4mm²,+300,-300mm/±1100mm Length can be customized
Connector	MC4 compatible
Application Level	Class A

ELECTRICAL PARAMETERS AT STC

Module Type	HS470TC-MHO-D	HS475TC-MHO-D	HS480TC-MHO-D	HS485TC-MHO-D	HS490TC-MHO-D
Power	470W	475W	480W	485W	490W
Open Circuit Voltage	42.86V	43.06V	43.26V	43.46V	43.66V
Short Circuit Current	14.08A	14.15A	14.22A	14.3A	14.37A
Maximum Power Voltage	36.04V	36.24V	36.44V	36.64V	36.84V
Maximum Power Current	13.04A	13.11A	13.17A	13.23A	13.31A
Module Efficiency	21.71%	21.94%	22.17%	22.40%	22.63%

* 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	518W	523W	529W	534W	540W
Open Circuit Voltage	43.01V	43.22V	43.41V	43.63V	43.85V
Short Circuit Current	15.49A	15.56A	15.64A	15.73A	15.81A
Maximum Power Voltage	35.31V	35.50V	35.72V	35.81V	36.04V
Maximum Power Current	14.67A	14.75A	14.83A	14.91A	14.99A

*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	357W	361W	365W	369W	374W
Open Circuit Voltage	40.51V	40.73V	41.02V	41.20V	41.44V
Short Circuit Current	11.38A	11.43A	11.49A	11.55A	11.61A
Maximum Power Voltage	33.44V	33.62V	33.81V	34.03V	34.25V
Maximum Power Current	10.71A	10.76A	10.82A	10.88A	10.93A

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

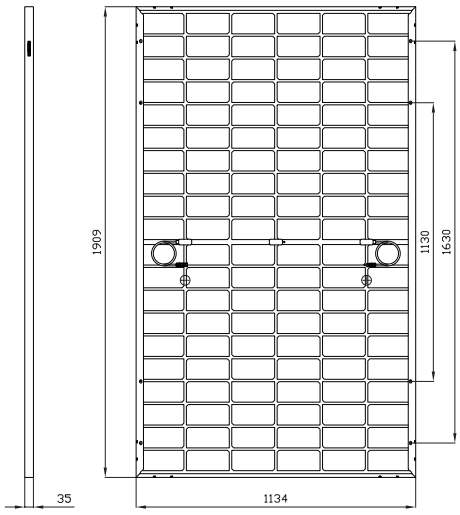
TEMPERATURE CHARACTERISTICS

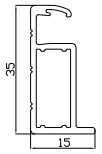
NMOT	45±2°C
Temp Coefficient of ISC	+0.05%/°C
Temp Coefficient of VOC	-0.28%/°C
Temp Coefficient of Pmax	-0.34%/°C

PACKING CONFIGURATION

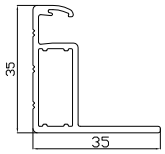
Modules/Pallet	31 Pieces
Packaging Description	24 Pallets, Total=(31+31)x12=744 Pieces
Modules/40'Container	744 Pieces

MECHANICAL DIAGRAMS





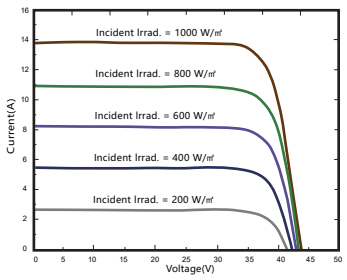
Section diagram of short frame profile

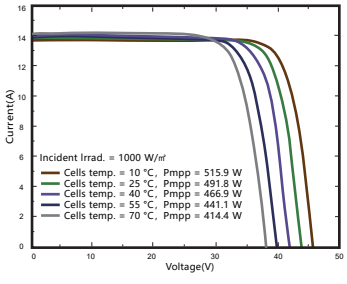


Section diagram of long frame profile

IV CHARACTERISTICS

HS490TC-MHO-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

30 YEARS Quality Warranty

30 YEARS Power Warranty

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

Version number: TC_MHO_D_EN_2024_A