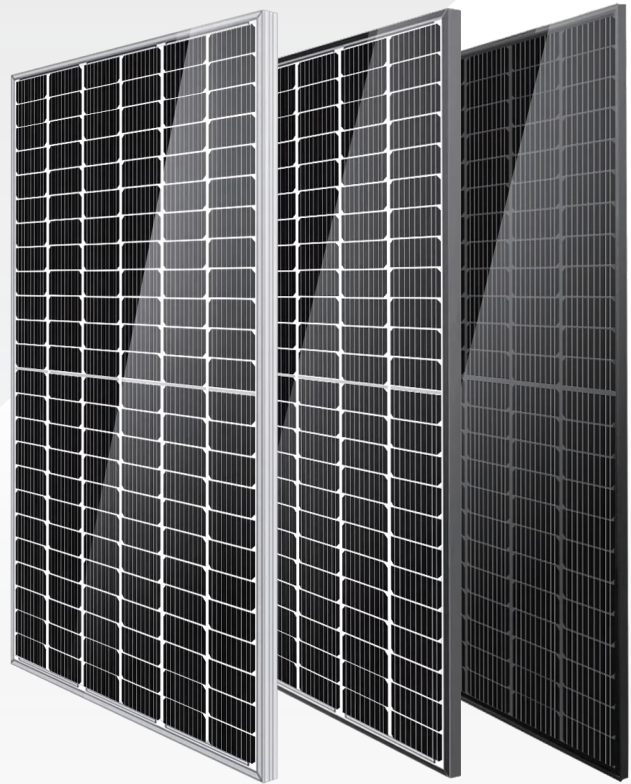


## Solar Lake

### 445–465 Watt MONO-FACIAL 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



**9BB 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 144 half-cells Monocrystalline modules is up to 465W.



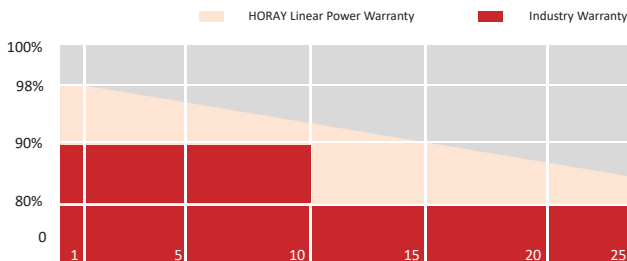
**PID Protection**  
Ensure the attenuation probability caused by PID phenomenon is minimized.



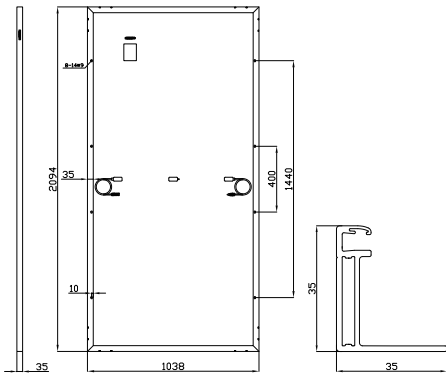
**Harsh Environmental Adaptability**  
Strict salt spray and ammonia corrosion test by the third party.



**Load Capacity**  
Mechanical load tests including wind load 2400 Pa and snow load 5400 Pa done by TUV.



## MECHANICAL DIAGRAMS



## SPECIFICATIONS

Weight	24kg
Dimension	2094mm*1038mm*35mm
Cell Dimension	166*83mm
Cell Amount	72*2 pcs
Maximum System Voltage	1500V
Junction Box	IP68
Frame	Aluminum Alloy
Cable	4mm <sup>2</sup> , +300,-300mm/±1200mm Length can be customized
Connector	MC4 compatible
Application Level	Class A

## ELECTRICAL PARAMETERS AT STC

Module Type	HS445-MHL	HS450-MHL	HS455-MHL	HS460-MHL	HS465-MHL
Power	445W	450W	455W	460W	465W
Open Circuit Voltage	49.80V	50.00V	50.20V	50.40V	50.60V
Short Circuit Current	11.40A	11.47A	11.54A	11.61A	11.67A
Maximum Power Voltage	41.20V	41.40V	41.60V	41.80V	42.00V
Maximum Power Current	10.81A	10.88A	10.94A	11.00A	11.08A
Module Efficiency	20.47%	20.70%	20.93%	21.16%	21.39%

\* 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 NMOT

Power	336W	340W	344W	348W	352W
Open Circuit Voltage	46.62V	46.88V	47.17V	47.45V	47.65V
Short Circuit Current	9.12A	9.18A	9.23A	9.29A	9.34A
Maximum Power Voltage	38.85V	39.06V	39.31V	39.55V	39.71V
Maximum Power Current	8.65A	8.70A	8.75A	8.80A	8.86A
Module Efficiency	15.46%	15.64%	15.83%	16.01%	16.19%

\* 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.

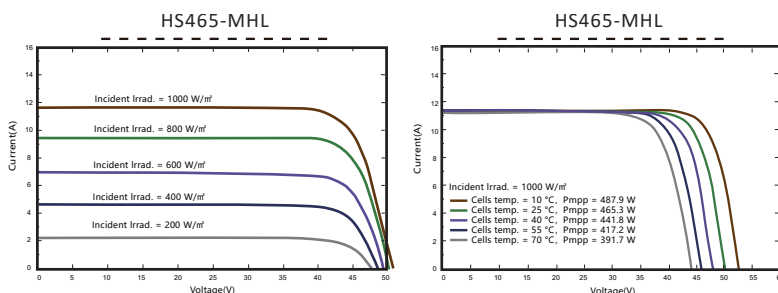
## TEMPERATURE CHARACTERISTICS

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

## PACKING CONFIGURATION

Modules/Pallet	31 Pieces	Modules/40' Container	726 Pieces
Packaging Description	22 Pallets, Total=(31+31+4)×11=726 Pieces		

## IV 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	20A

**15 YEARS** Quality Warranty

**25 YEARS** Power Warranty

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

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