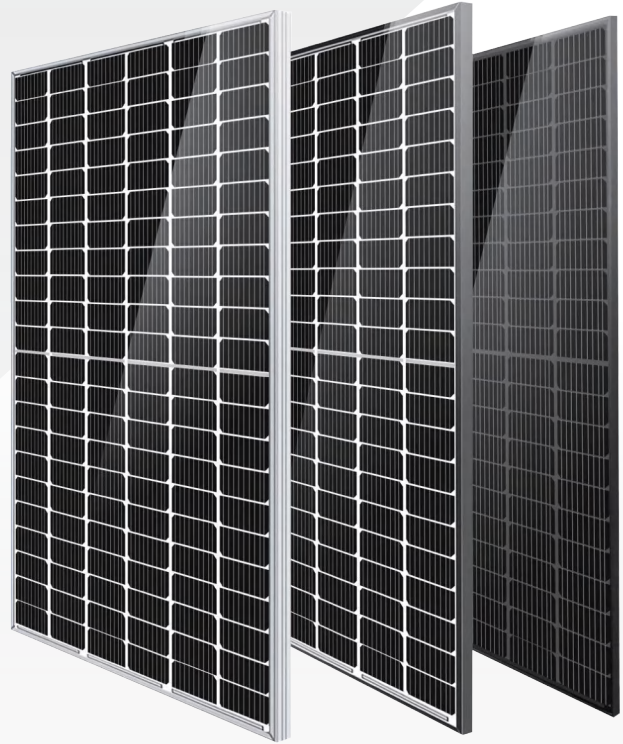


## Solar Lake

### 410–425 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 132 half-cells Monocrystalline modules is up to 425W.



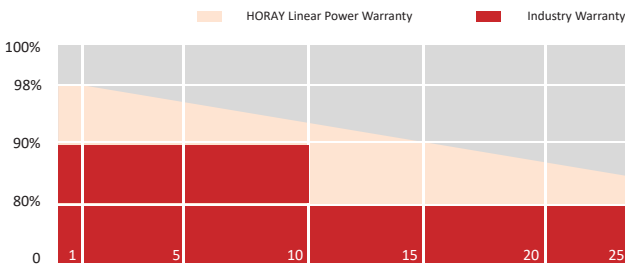
**PID Protection**  
Ensure the attenuation probability caused by PID phenomenon is minimized.



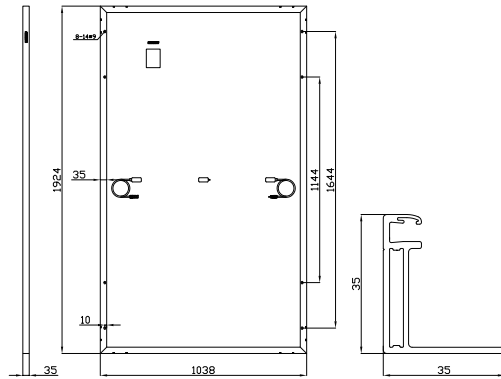
**Harsh Environmental Adaptability**  
Strict salt spray and ammonia corrosion test by the third party.



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



## MECHANICAL DIAGRAMS



## SPECIFICATIONS

Weight	21.3kg
Dimension	1924mm*1038mm*35mm
Cell Dimension	166*83mm
Cell Amount	66*2 pcs
Maximum System Voltage	1500V
Junction Box	IP68
Frame	Aluminum Alloy
Cable	4mm <sup>2</sup> ,+300,-300mm/±1100mm Length can be customized
Connector	MC4 compatible
Application Level	Class A

## ELECTRICAL PARAMETERS AT STC

Module Type	HS410-MHL	HS415-MHL	HS420-MHL	HS425-MHL
Power	410W	415W	420W	425W
Open Circuit Voltage	45.70V	45.90V	46.10V	46.30V
Short Circuit Current	11.43A	11.52A	11.61A	11.69A
Maximum Power Voltage	37.82V	38.02V	38.22V	38.42V
Maximum Power Current	10.84A	10.92A	10.99A	11.06A
Module Efficiency	20.53%	20.78%	21.03%	21.28%

\* 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	310W	314W	318W	322W
Open Circuit Voltage	42.90V	43.13V	43.40V	43.67V
Short Circuit Current	9.14A	9.22A	9.29A	9.35A
Maximum Power Voltage	35.75V	35.94V	36.17V	36.39V
Maximum Power Current	8.67A	8.74A	8.79A	8.85A
Module Efficiency	15.42%	15.72%	15.92%	16.12%

\* 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.

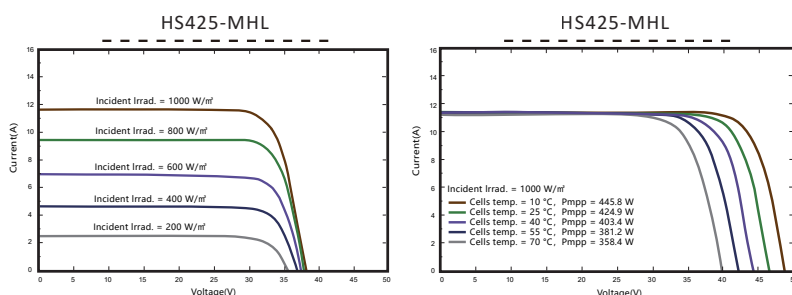
## TEMPERATURE CHARACTERISTICS

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	792Pieces
Packaging Description	24 Pallets, Total=(31+31+4)x12=792 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.

©2023 Horay Solar Co.,Ltd. All rights reserved. Specifications included in this datasheet are subject to change without notice.

Version number: MHO\_EN\_2023\_A