

HORAY TIER1
BloombergNEF

HORAY SOLAR

2025 INTRODUCTION

EXCELLENT PV MODULE MANUFACTURER

www.horaysolar.com

- 1.3MW Project in Italy

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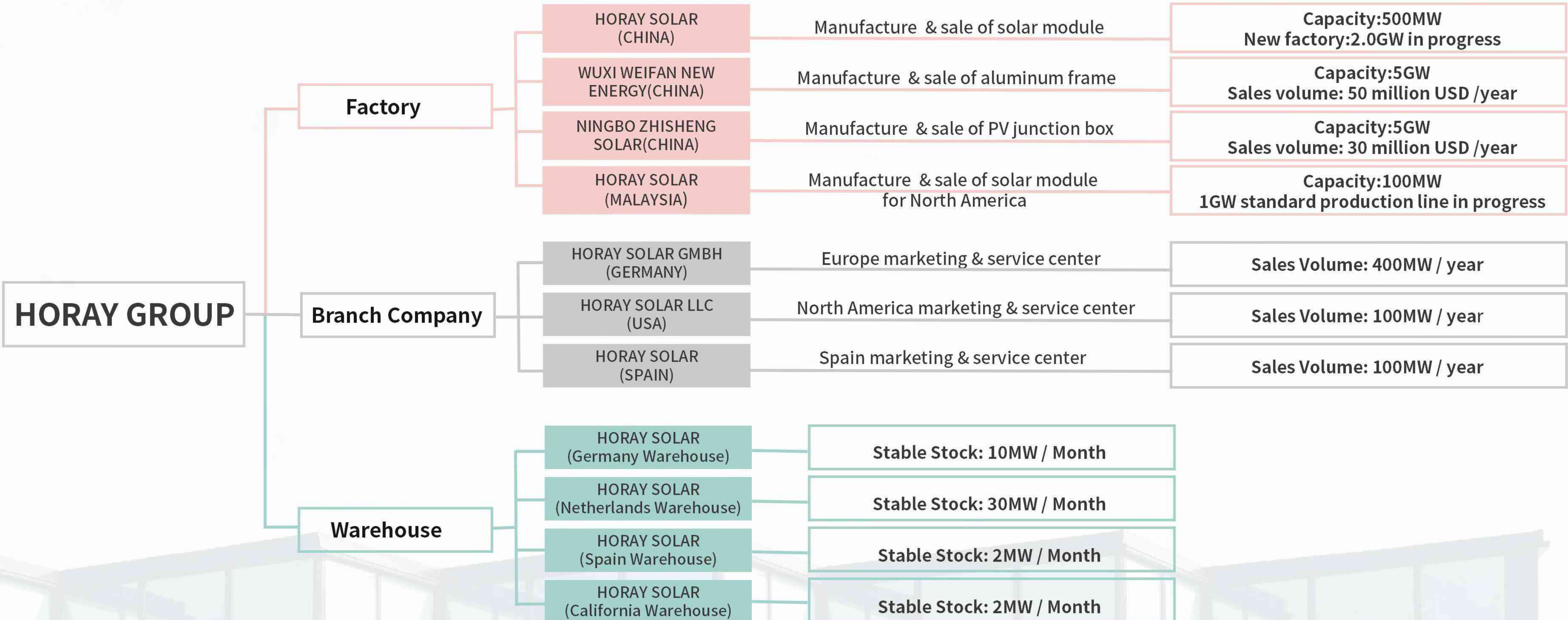


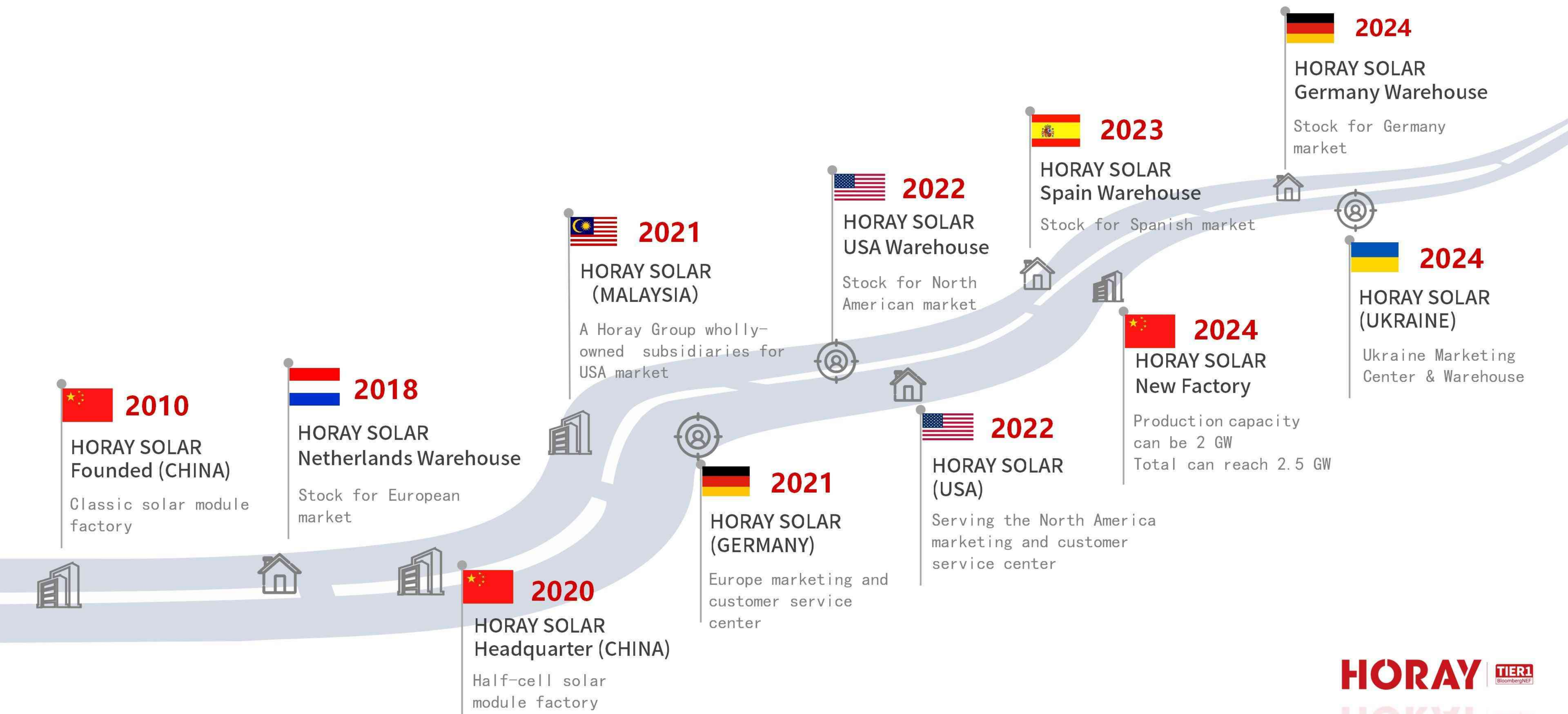
● 4.5MW Project in Czech Republic

01

About Horay

Group Structure | Milestone | Group Overview | Corporate Culture





Horay Solar is an integrated photovoltaic company focusing on the R&D, production and sales of solar modules and solar power system. Our products include standard solar module and customized solar module.

Horay Solar has always been committed to the development of globalization with an eye to the global industrial layout.

With strong technical support, scientific production management and strict quality control, all the products have reached the industry-leading level and have been approved by the international authorized certification.

Horay Group

15 Years

In Solar Industry

16 Bases

Throughout The World

5

PV Module
Production Lines

2.5 GW

Capacity

3

Raw Material Factories

50+

ODM Partners

Embrace the Sun Step into a Bright Future with Horay Solar



■ • HORAY SOLAR (New Factory) •

The new plant under Horay is already under construction and will be completed officially put into production by the year of 2024.

Newer equipment, greater production capacity, more complete staffing, and better factory environment.



■ • HORAY SOLAR (CHINA) •

Horay Solar is an integrated photovoltaic company focusing on the R&D, production and sales of solar modules and solar power system.

Horay Solar has always been committed to the development of globalization with an eye to the global industrial layout.



■ • HORAY SOLAR (MALAYSIA) •

A Horay Group wholly-owned subsidiary, especially for North American market.

A global leader in sustainable innovation, specializing in reliable low to medium-wattage modules, customized solutions, and OEM services.



• HORAY SOLAR (GERMANY) •

The Europe marketing and customer service center in Germany.

Manages local warehouse and spot logistics in Rotterdam, offering global services like pre-sales consulting, after-sales support, and EPC installation services.



• HORAY SOLAR LLC (USA) •

The North America marketing and customer service center in the USA.

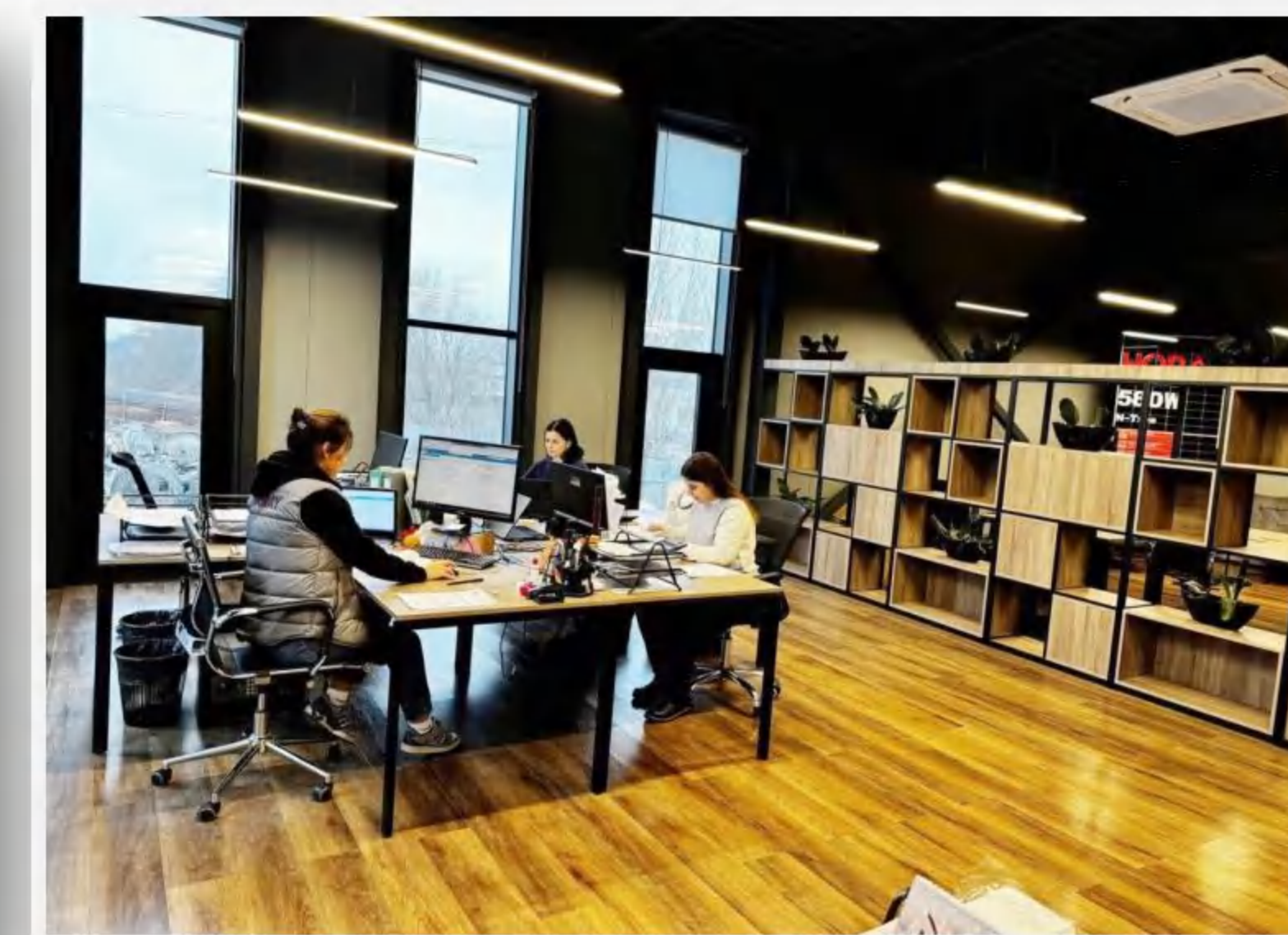
To provide services for our customers all over the world, including pre-sales product consulting and after-sales service, EPC installation service and consulting, etc.



• HORAY SOLAR (SPAIN) •

The Spain marketing and customer service center in Spain.

Offers comprehensive services throughout the Spanish market, encompassing pre-sales product consultation, after-sales support, EPC installation, and consulting.



• HORAY SOLAR (UKRAINE) •

The Ukraine marketing and customer service center in Ukraine.

Offers comprehensive services throughout the Ukrainian market, encompassing pre-sales product consultation, after-sales support, EPC installation, and consulting.


• NETHERLANDS WAREHOUSE •

Add: Vlakbodem 3 
Dirksland, Rotterdam,
Netherlands



Warehouse


• SPAIN WAREHOUSE •

Add: C/ Sierra d' espadá 
4 Pol. Ind. Pla dels Olivars
46460 Silla (Valencia), Spain



Warehouse

• UKRAINE WAREHOUSE •

Add: Bud. 26, Street Zaporizka, 
Boryspilsky District, Kyiv
Region, Ukraine




Warehouse

Warehouse

Horay Owned Warehouse



• USA WAREHOUSE •

 Add: 12345 Mills Ave,
Chino, CA, USA

Horay Owned Warehouse



• GERMANY WAREHOUSE •

 Add: Horay Warehouse, Robert-
Bosch-Straße 27-29, 63225
Langen, Germany



Malaysia

HORAY SOLAR SDN. BHD (YADA NEW ENERGY SDN. BHD.)
Add: 75 Jalan I-Park SAC 6, Taman Perindustrian I-Park SAC, Senai Johor, Malaysia
Tel: +60 18 783 1738 E-mail: sales@horaysolar.com sales@yada.com.my



Germany

HORAY SOLAR GMBH
Add: Robert-Bosch-Straße 27-29, 63225 Langen (Hessen), Germany



USA

HORAY SOLAR LLC
Add: 350 Pauma Place, Escondido CA, USA



Netherlands

HORAY SOLAR (Netherlands Warehouse)
Add: Vlakhodem 3 Dirksland, Rotterdam, Netherlands



Spain

HORAY SOLAR (Spain Warehouse)
Add: C/ Sierra d' espadá 4 Pol. Ind. Pla dels Olivars 46460 Silla (Valencia), Spain



USA

HORAY SOLAR (America Marketing Center)
Add: 12345 Mills Ave, Chino, CA, USA



Spain

HORAY SOLAR (Spain Marketing Center)
Add: Calendula 93 Edificio J, Semisótano Soto de la Moraleja 28109 Madrid



Ukraine

HORAY SOLAR (Ukraine)
Add: Bud. 26, Street Zaporizka, Boryspilsky District, Kyiv Region, Ukraine



Solar Module Factory

HORAY SOLAR CO.LTD
Add: No.30-5 East Yanxin Road, Huishan District Wuxi, Jiangsu, China
Tel: +86 510-8358 0688
E-mail: sales@horaysolar.com



Solar Module Factory

HORAY SOLAR (China)
Add: Jinchang Road, Yanqiao Streets, Huishan District, Wuxi, Jiangsu, China
E-mail: sales@horaysolar.com



Aluminum Alloy Frame Factory

Wuxi Weifan New Energy Technology Co., LTD
Add: No.38 Liming Road, Changan Streets, Huishan District Wuxi, Jiangsu, China
E-mail: sales@horaysolar.com



PV Junction Box Factory

Ningbo Zhisheng Solar Technology Co., LTD
Add: No.698 Yu'an Road, Zhouxiang Town, Cixi City, Ningbo, Zhejiang, China
E-mail: sales@horaysolar.com



Europe

- Spain
- Romania
- Italy
- Slovakia
- Switzerland
- Netherlands
- Macedonia
- Bulgaria
- Austria
- Estonia
- Germany
- Czech Republic
- Poland
- Greece
- Latvia
- Belgium
- Croatia
- Sweden
- Moldova
- Lithuania
- Portugal
- Denmark
- Slovenia
- Britain
- Ireland

Oceania

- Australia
- New Zealand

Asia

- China
- Burma
- Japan
- Laos
- Indonesia
- The United Arab Emirates
- Saudi Arabia
- Lebanon

Africa

- Mali
- Gabon
- Gambia

America

- USA
- Paraguay
- Canada
- Brazil
- Mexico
- Dominica
- Honduras
- Chile

Six Advantages

• Production Advantage •

- **Awards:** "Provincial-level Intelligent Workshop"
- **Expertise:** Over 15 years production experience.
- **Efficient:** Smart workshop ensures productivity.

• Product Advantage •

- **Quality:** Top5 global materials.
- **Flexibility:** Customizable to diverse needs.
- **Cost-effective:** Competitive price, valuable.

• Global Presence •

- **Locations:** 5 factories, 5 marketing centers, 6 warehouses worldwide.
- **Efficient Logistics:** Prompt DDP delivery.

• Talent Advantage •

- **Professional Team:** Highly skilled, enough industry-experience.
- **Innovation:** Industry-leading products.
- **Service:** Exclusive customized service.

• Project Experience •

- **Portfolio:** Nearly 1,000 global projects.
- **Support:** Installation, commissioning, and maintenance services.

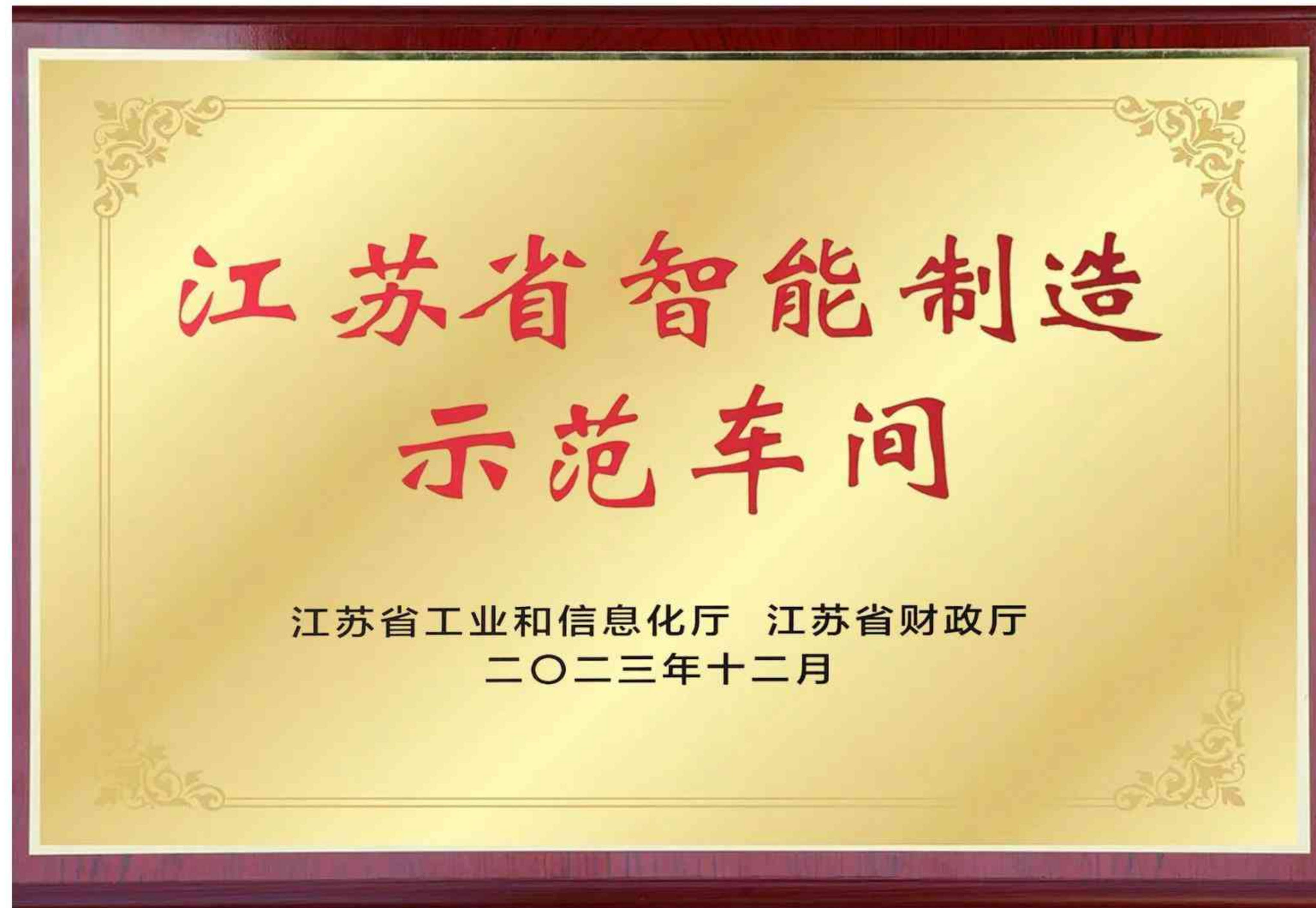
• Value-added Services •

- **Assurance:** 12/15/30-year product warranty and 25/30-year power warranty.
- **Support:** Timely, after-sales services.
- **Risk Management:** MES and Lloyd's Assurance.

-  2023 Jiangsu Province Intelligent Manufacturing Demonstration Workshop
-  2023 High-Tech Enterprise Certification
-  Internationally Recognized Brands to be Cultivated and Developed in Jiangsu Province, 2023-2025
-  2024 Wuxi Engineering Technology Research Center Certification
-  2024 Wuxi Enterprise Technolog Center Certification
-  2024 Capability Maturity Model Manufacturing Certification



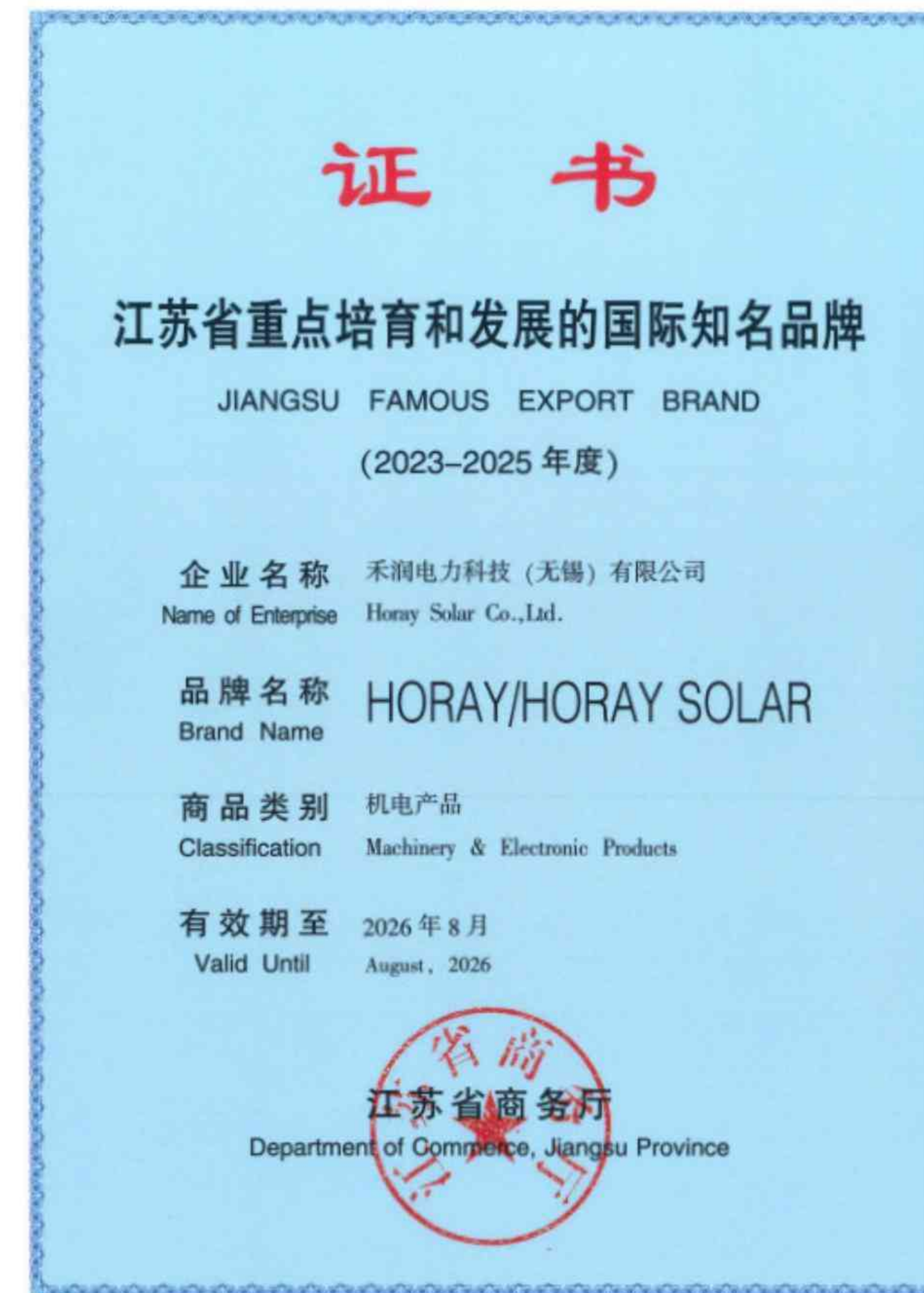
2023 Jiangsu Province Intelligent Manufacturing Demonstration Workshop



2023 High-Tech Enterprise Certification



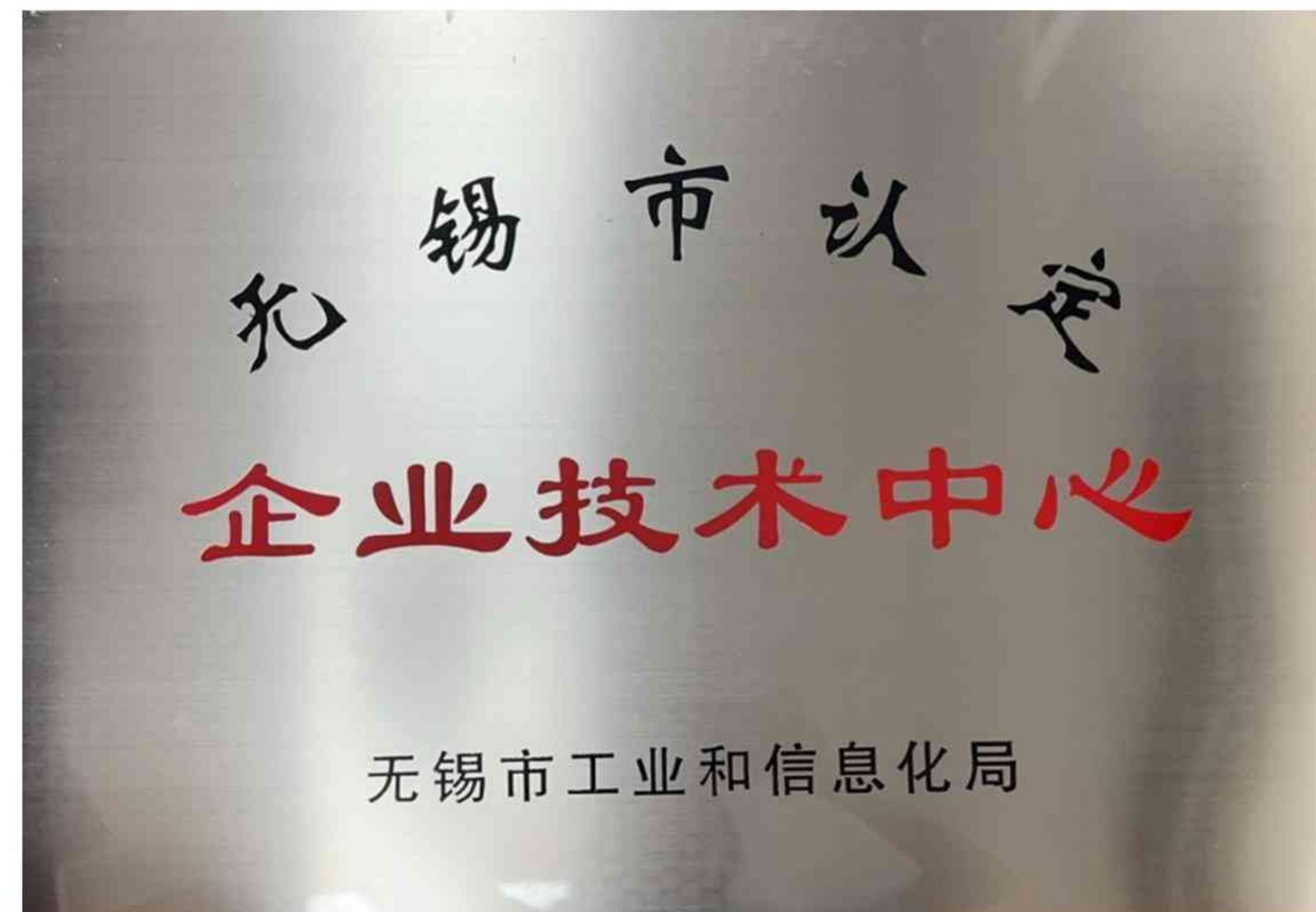
Internationally Recognized Brands to be Cultivated and Developed in Jiangsu Province, 2023-2025



2024 Wuxi Engineering Technology Research Center Certification



2024 Wuxi Enterprise Technology Center Certification



2024 Capability Maturity Model Manufacturing Certification




H

Hopeful

Horay Solar has been devoted to the global expansion, has a promising future with strong technical support, scientific production management and strict quality control.


O

Outstanding

Our products have outstanding advantages, including higher output power and harsh environmental adaptability, etc.


R

Responsible

Undertaking great social responsibility, HoRay Solar determined to become a leading photovoltaic company in pursuit of good quality.


A

Aspiring

Our colleagues have the greater ambition to produce cleaner and much more efficient solar panel.


Y

Youthful

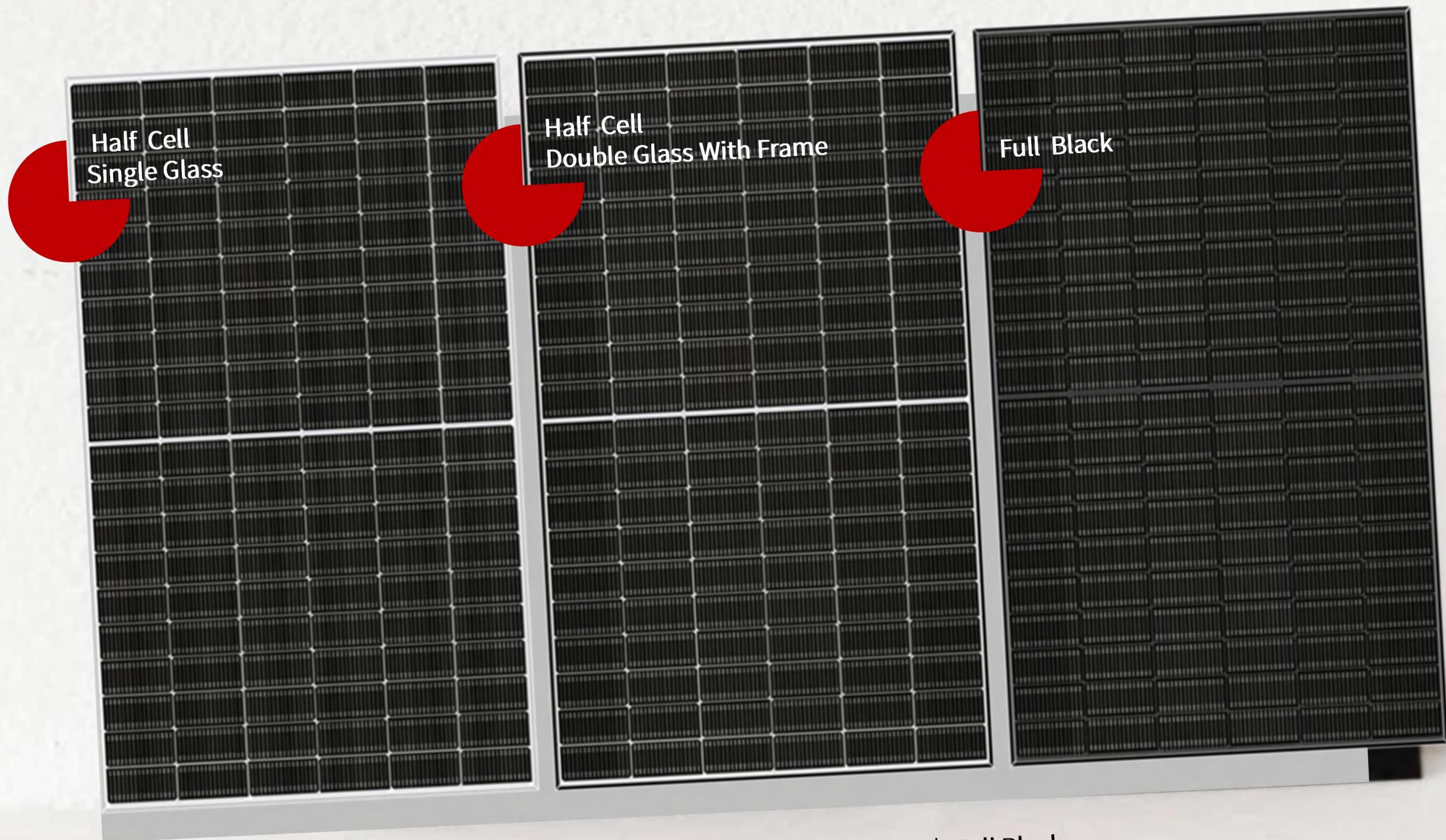
Everyone of our team is full of youth and vigour.

● 120.24KW Project in Tematínska, Slovakia

02

Products Introduction

Solar Ocean(N-Type/ Perc) | Solar Galaxy (N-Type/ Perc) Solar Creek series



Half Cell
Single Glass

Half Cell
Double Glass With Frame

Full Black



MBB/SMBB

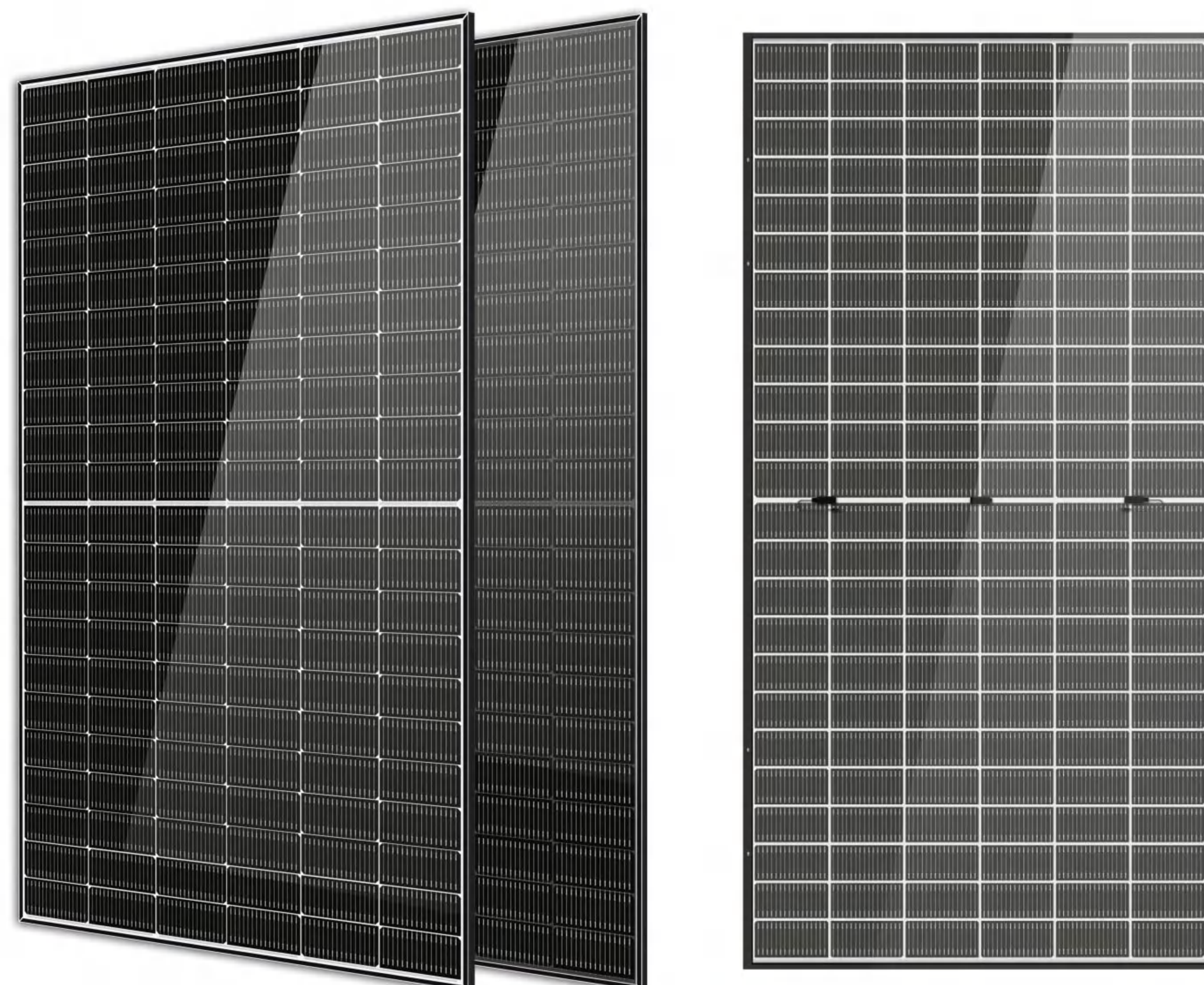


HIGHER
OUTPUT POWER



HIGHER
EFFICIENCY

Single Glass | Double Glass With Frame | Full Black

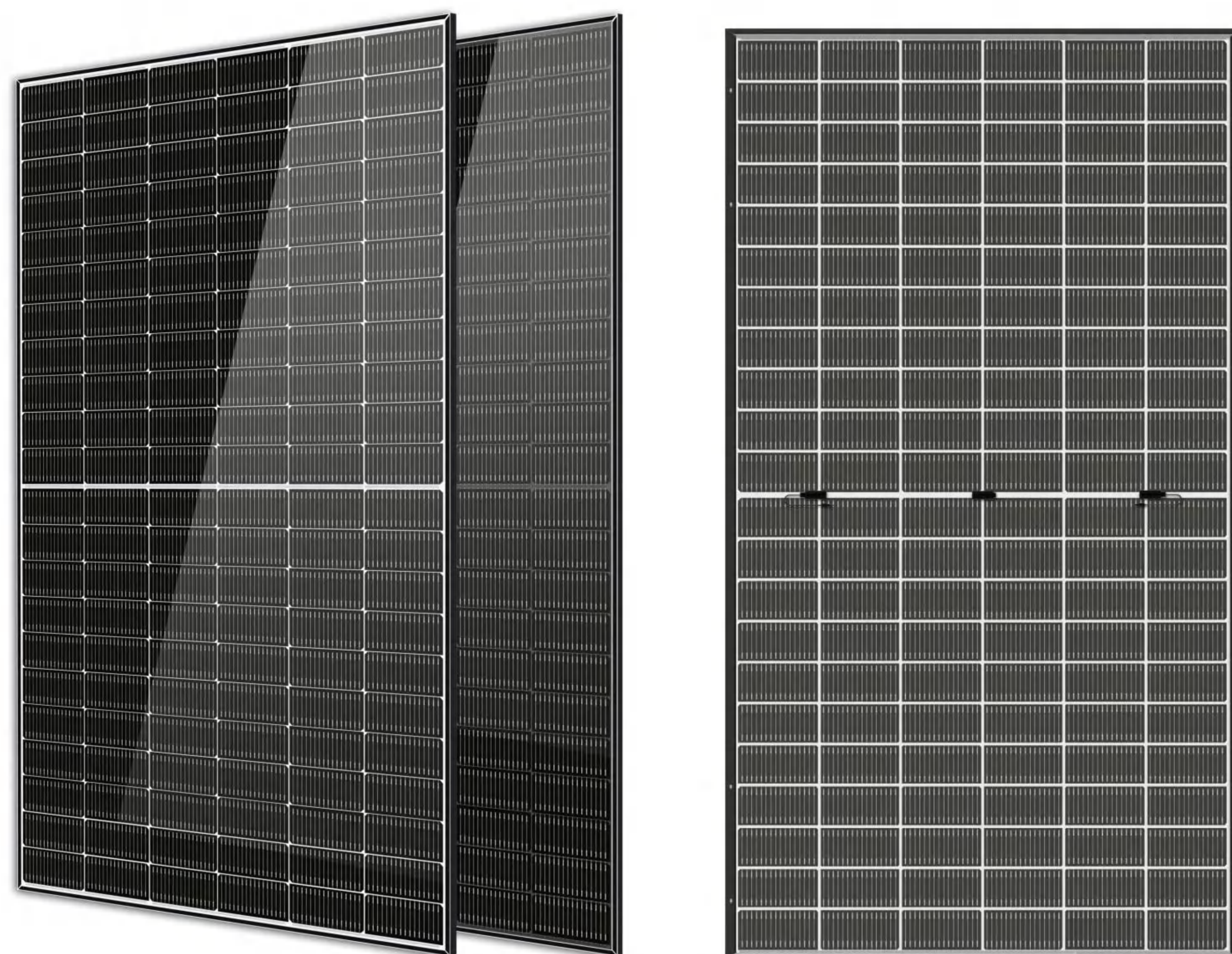


HALF CELLS - 182mm

SOLAR OCEAN PERC **MBB** SOLAR MODULES

MONO FACIAL MODULES | **MONO BIFACIAL MODULES**

- ✓ POWER: 405W-420W
Cell Amount: 108 half-cells
- ✓ POWER: 450W-470W
Cell Amount: 120 half-cells
- ✓ POWER: 495W-515W
Cell Amount: 132 half-cells
- ✓ POWER: 535W-560W
Cell Amount: 144 half-cells



HALF CELLS - 182mm

SOLAR OCEAN N-Type **SMBB** SOLAR MODULES

MONO-FACIAL MODULES | BIFACIAL MODULES

- ✓ POWER: 420W-440W
Cell Amount: 108 half-cells
- ✓ POWER: 470W-490W
Cell Amount: 120 half-cells
- ✓ POWER: 520W-540W
Cell Amount: 132 half-cells
- ✓ POWER: 570W-590W
Cell Amount: 144 half-cells

- SMBB Cell
- ✓ MBB Cell
- LID Free
- Optimized Temperature Coefficient
- Outstanding Low Light Performance
- Higher Bifacial Gain
- Higher Efficiency & Output Power
- Ultra-high Power Generation
- ✓ Lower Attenuation Rate
- ✓ Harsh Environmental Adaptability
- ✓ Excellent Load Capacity
- Longer Warranty
- ✓ PID Protection

Perc

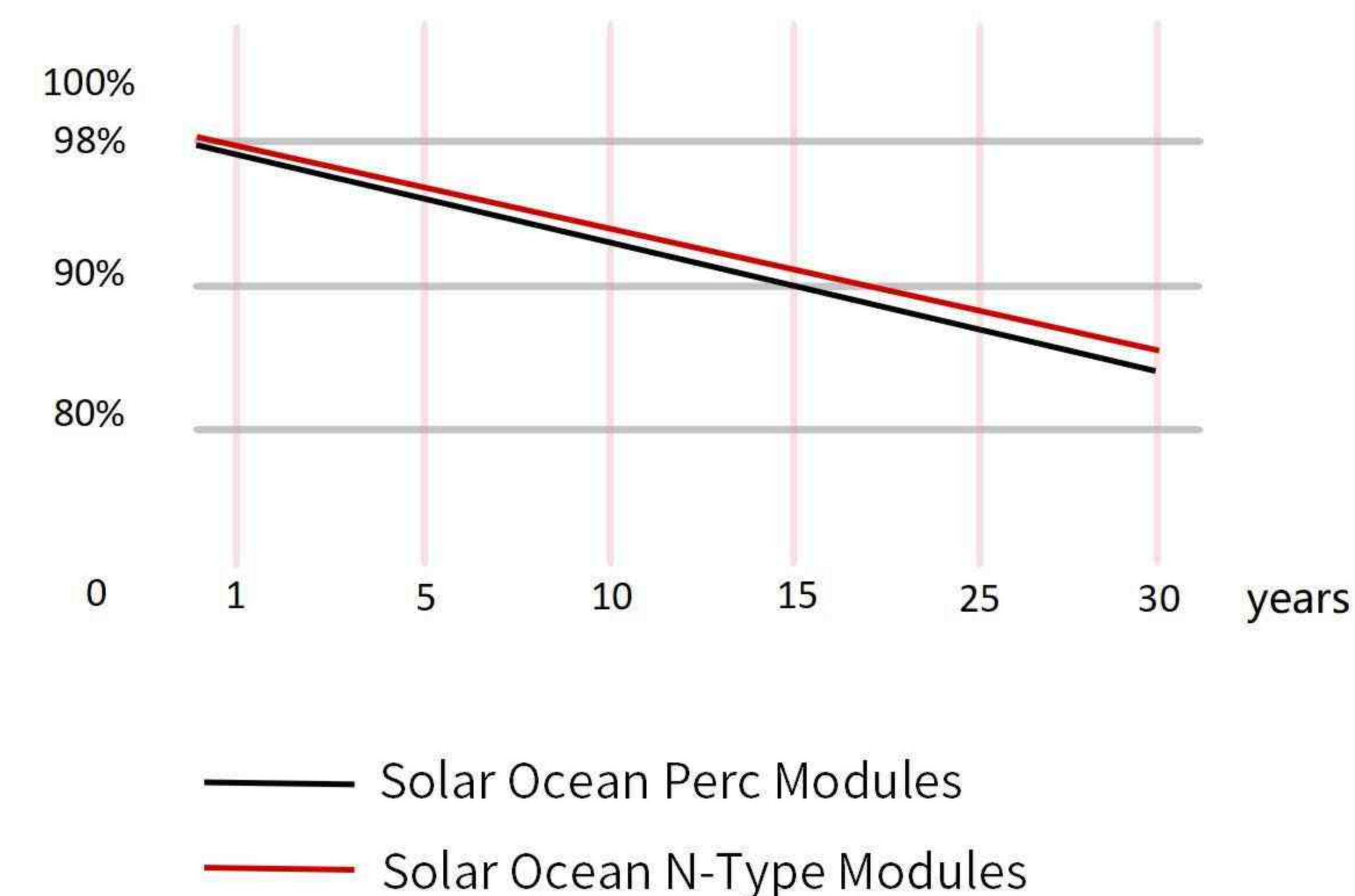
- ✓ SMBB Cell
- MBB Cell
- ✓ LID Free
- ✓ Optimized Temperature Coefficient
- ✓ Outstanding Low Light Performance
- ✓ Higher Bifacial Gain
- ✓ Higher Efficiency & Output Power
- ✓ Ultra-high Power Generation
- ✓ Lower Attenuation Rate
- ✓ Harsh Environmental Adaptability
- ✓ Excellent Load Capacity
- ✓ Longer Warranty
- ✓ PID Protection

N-Type

- Compatible with existing packaging, container space, and logistics methods
- Ensures system safety and reliability while aligning with mainstream solar system designs.
- Higher performance under low light environment.
- Strict salt spray and ammonia corrosion test by the third party.
- Modules designed with arm span, easy installation, and reduced risk of damage.
- Offers high power per unit area, lower BOS cost, and compatibility with mainstream mounting systems (1p and 2p).
- Ensure the attenuation probability caused by PID phenomenon is minimized.
- Mechanical load tests including wind load 2400Pa and snow load 5400Pa done by TUV.

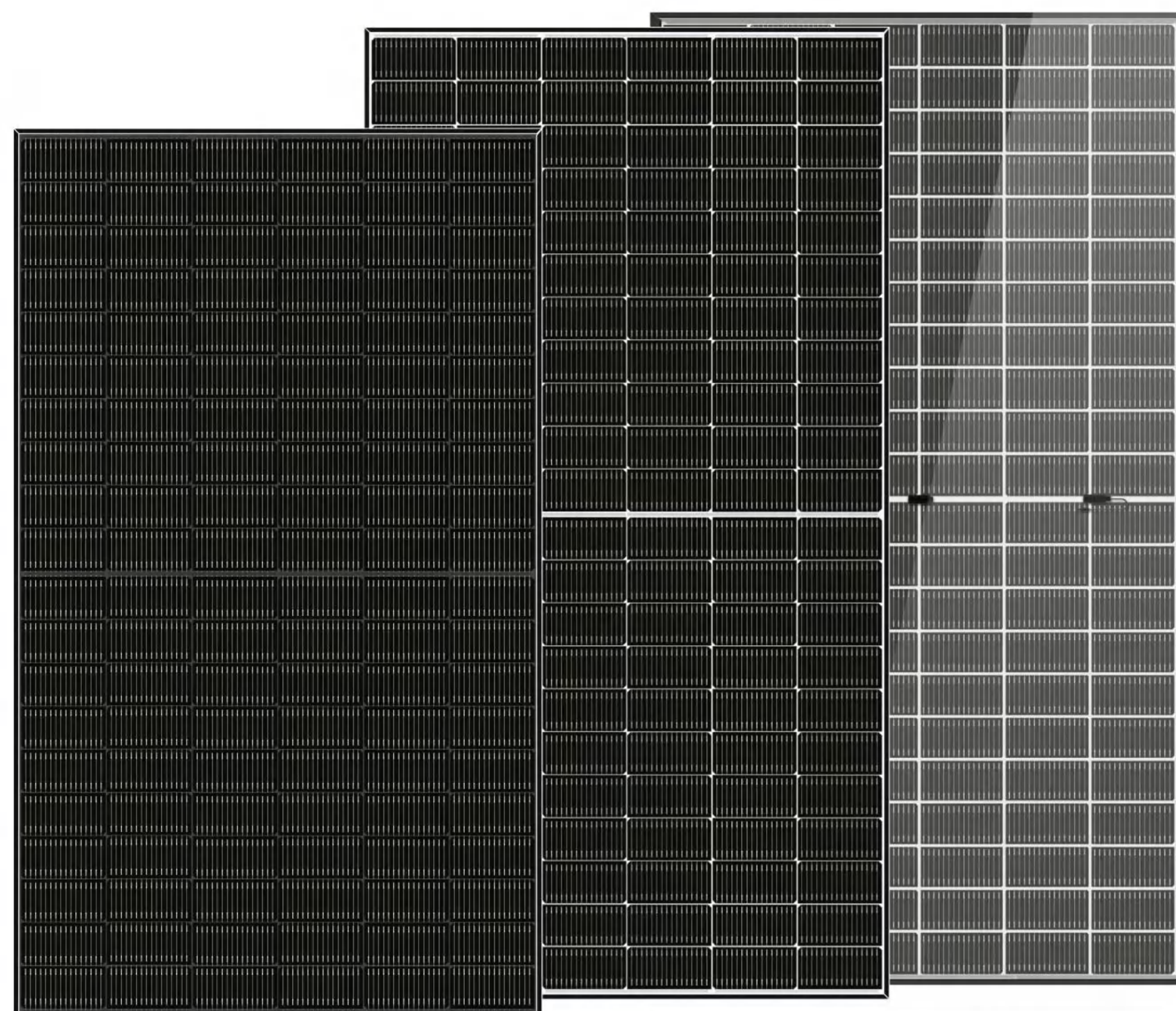
Solar Ocean Series Modules

HORAY Linear Power Warranty



SOLAR GALAXY PERC **MBB** SOLAR MODULES

MONO FACIAL MODULES | MONO BIFACIAL MODULES



HALF CELLS - 210mm



POWER:485W-500W
Cell Amount: 100 half-cells



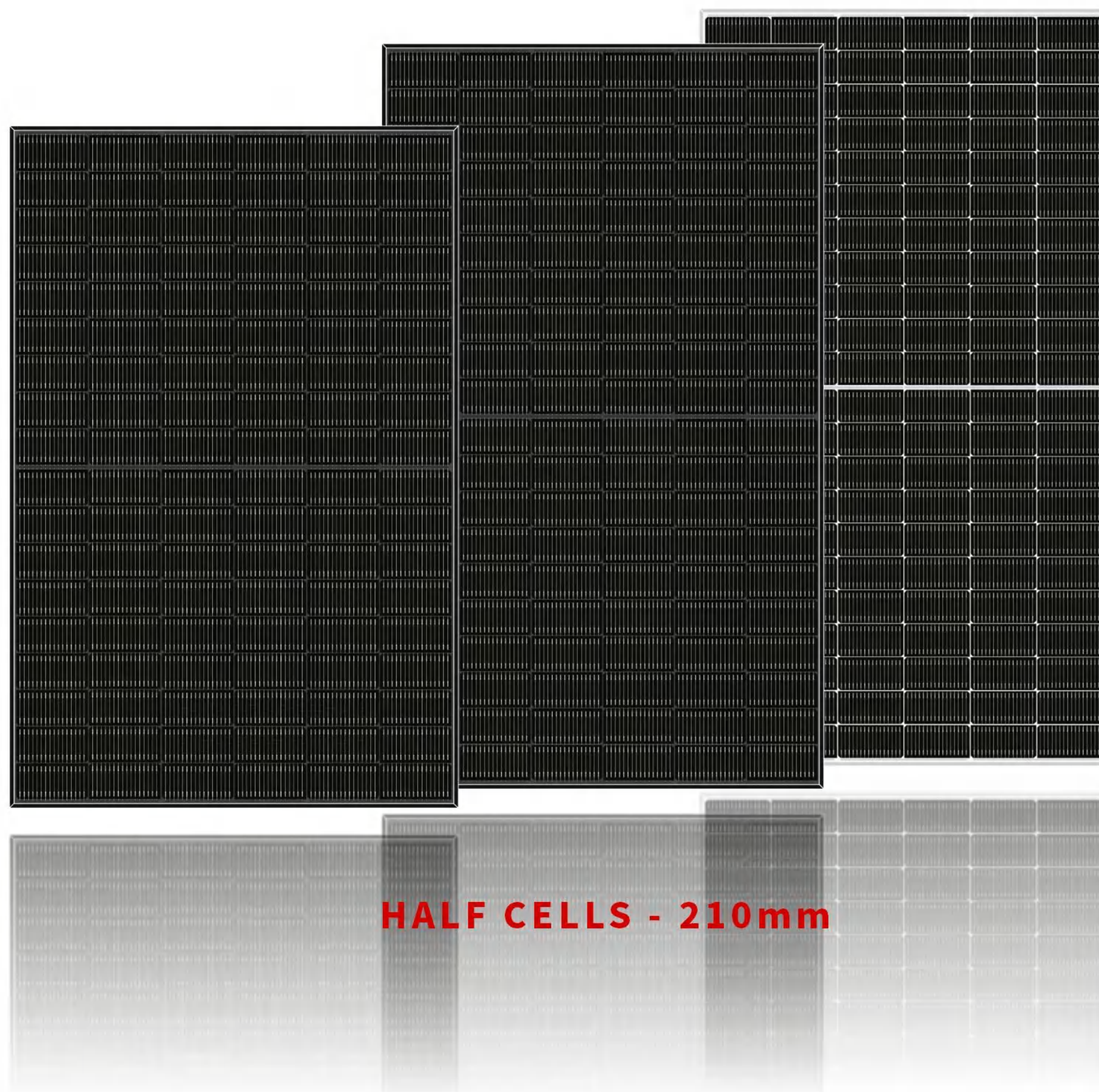
POWER:535W-550W
Cell Amount: 110 half-cells



POWER:585W-600W
Cell Amount: 120 half-cells



POWER:640W-665W
Cell Amount: 132 half-cells



SOLAR GALAXY N-Type **SMBB** SOLAR MODULES

MONO FACIAL MODULES | MONO BIFACIAL MODULES



POWER:510W-535W
Cell Amount: 100 half-cells



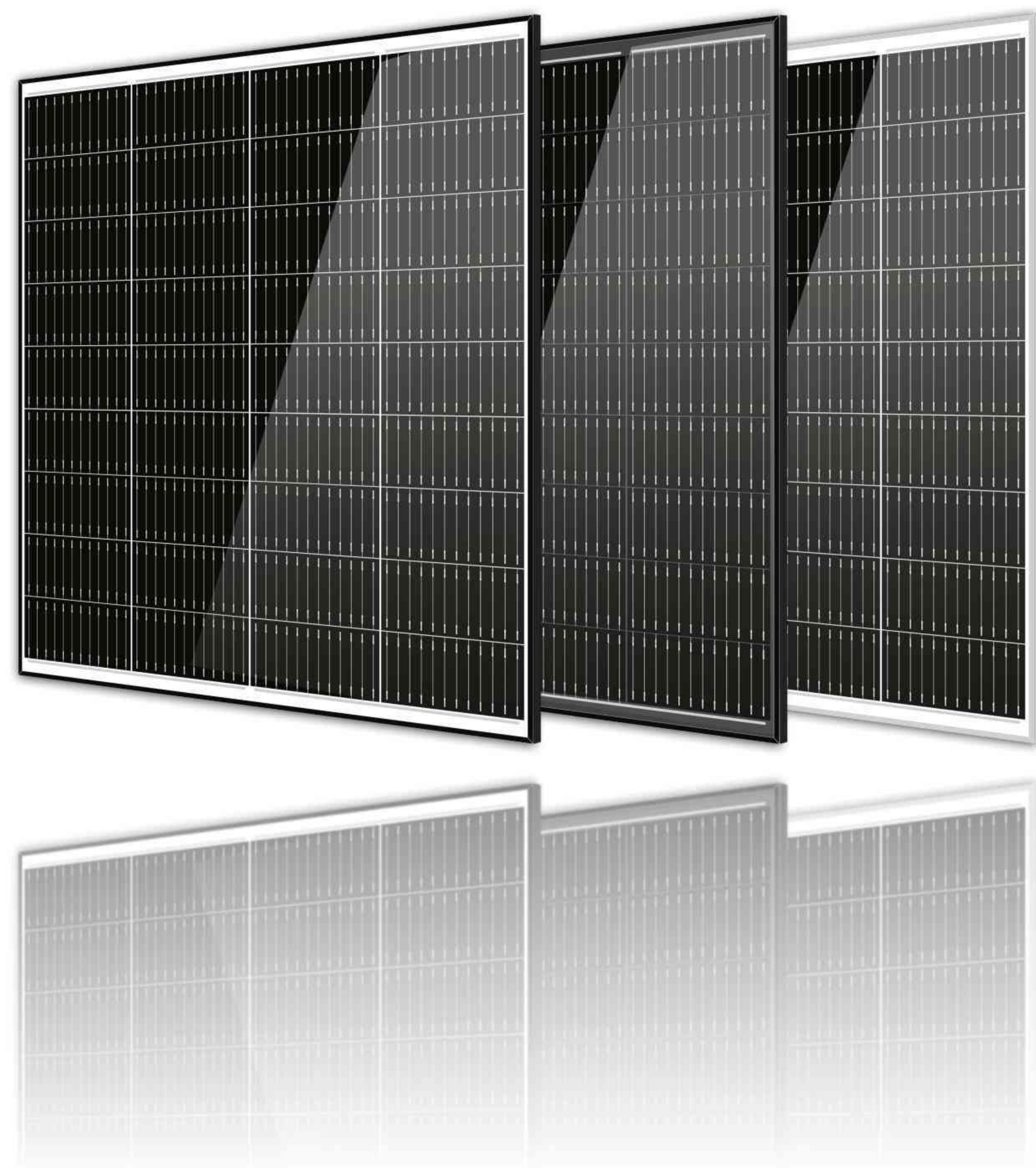
POWER:560W-585W
Cell Amount: 110 half-cells



POWER:610W-635W
Cell Amount: 120 half-cells



POWER:685W-710W
Cell Amount: 132 half-cells



Solar Creek Customized Solar Modules

- ✓ POWER:10W-380W
- ✓ CUSTOMIZED SIZE



• Outdoor Solar •

Portable, lightweight, high efficiency.

- Max. STC Power 180W
- System Voltage 1500V
- Size 1020mm*875mm*35mm



• Solar Street Light •

Tailored for diverse street light systems.

- Max. STC Power 110W
- System Voltage 1500V
- Size 820mm*700mm*30mm



• Photovoltaic RV Car •

Lightweight solar panel perfect for RVs.

- Max STC Power 130WP
- Max System Voltage 1500V
- Size 890mm*765mm*30mm

03

Technology

Specification | Certificate | PERC | N-Type



Maximum Rating

Power selection 0~+5W

Measuring uncertainty of Pm 0~±3%

Operating Temperature -40°C~+85°C



Low Light

High Performance in Low-light environment



Warranty

25/30 Years Power Output Warranty

10 Years 90%, 25 Years 80%

15 Years Product Warranty on Materials



Qualified Materials

MBB/SMBB Cell

Higher Output Power

Harsh Environmental Adaptability

PID Protection



Enhanced External Load

Wind Load 2400Pa

Snow Load 5400Pa



Certification

IEC61215: 2021 IEC61730: 2016

TUV Rheinland Standard, IEC, CE,

ETL, UL, MCS, CB, JP-AC, INMETRO

ISO9001, ISO14001, CQC, CSI, etc

Certificates

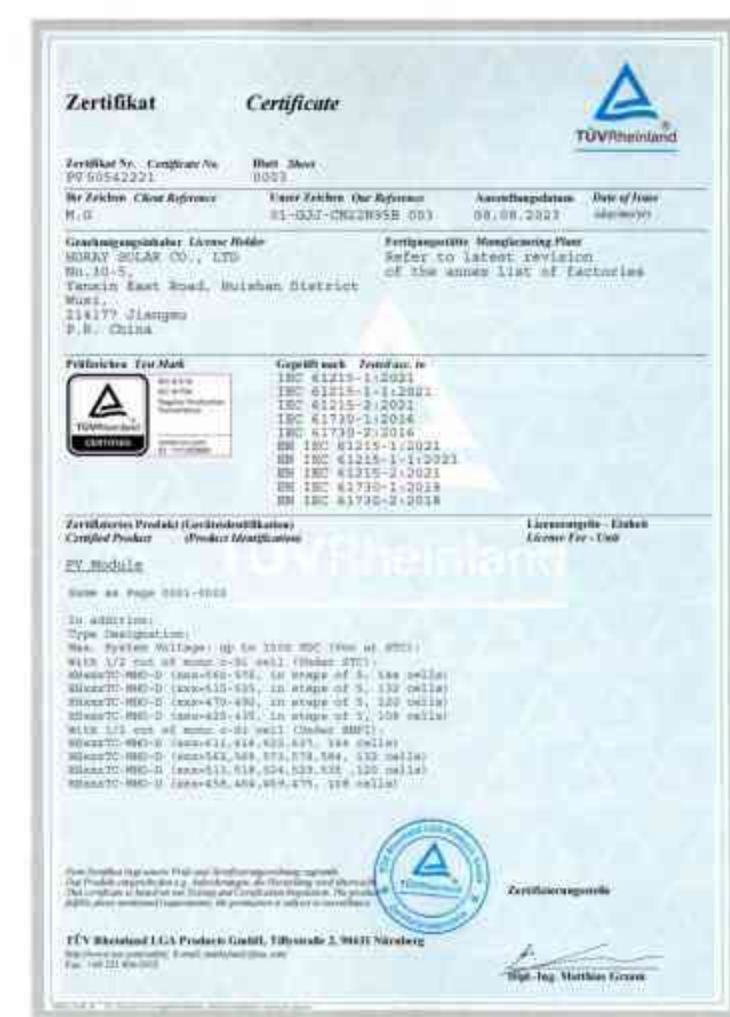
For Products

Tested by the Third-party, Horay Solar 's modules obtained international certifications. Incl. TUV , IEC, CE, MCS, CSI, INMETRO, CB,ETL, BSCI, JP-AC, CQC etc.

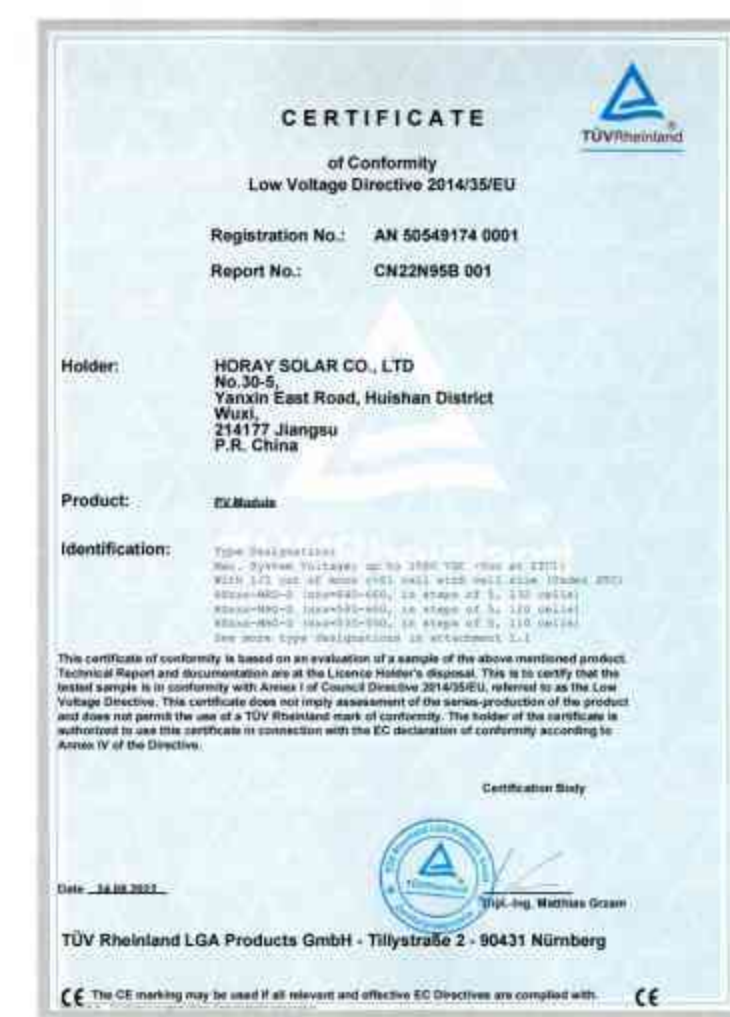
For full details, please contact us.



TUV



IEC



CE



INMETRO



CQC



MCS



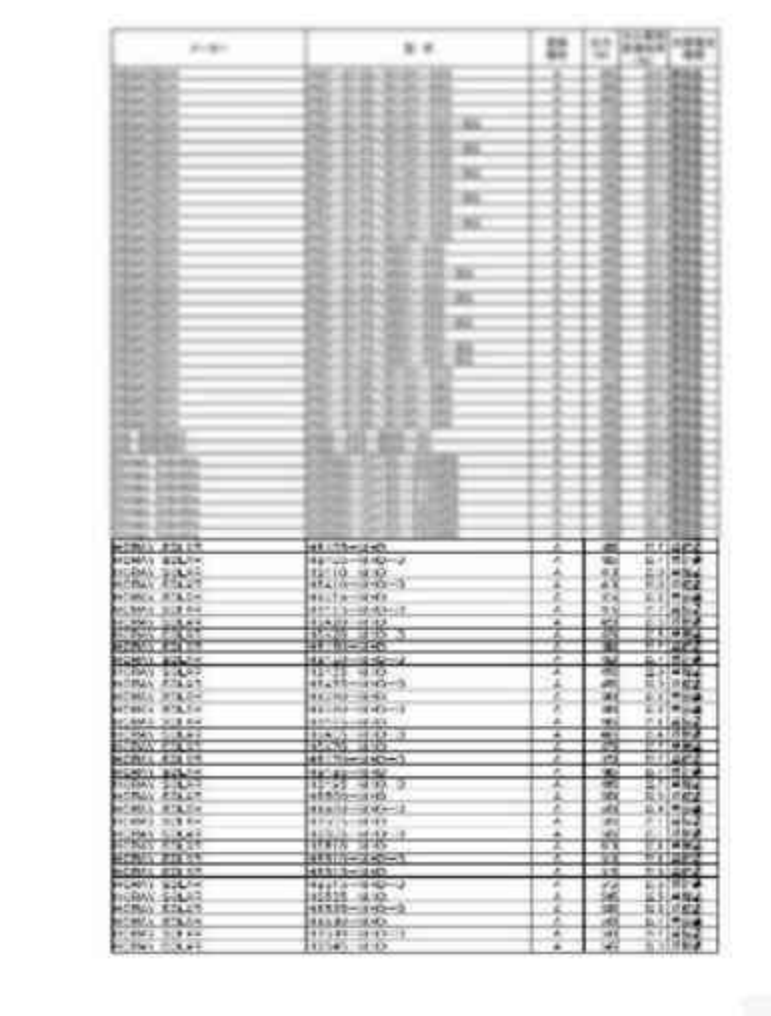
CSI



CB



ETL



JPAC



Certificates

For Factory

Tested by the Third-party, Horay Solar factory obtained international certifications. Incl. BSCI, ISO9001, ISO14001, ISO45001 etc.

For full details, please contact us.



BSCI



ISO 9001



ISO 14001



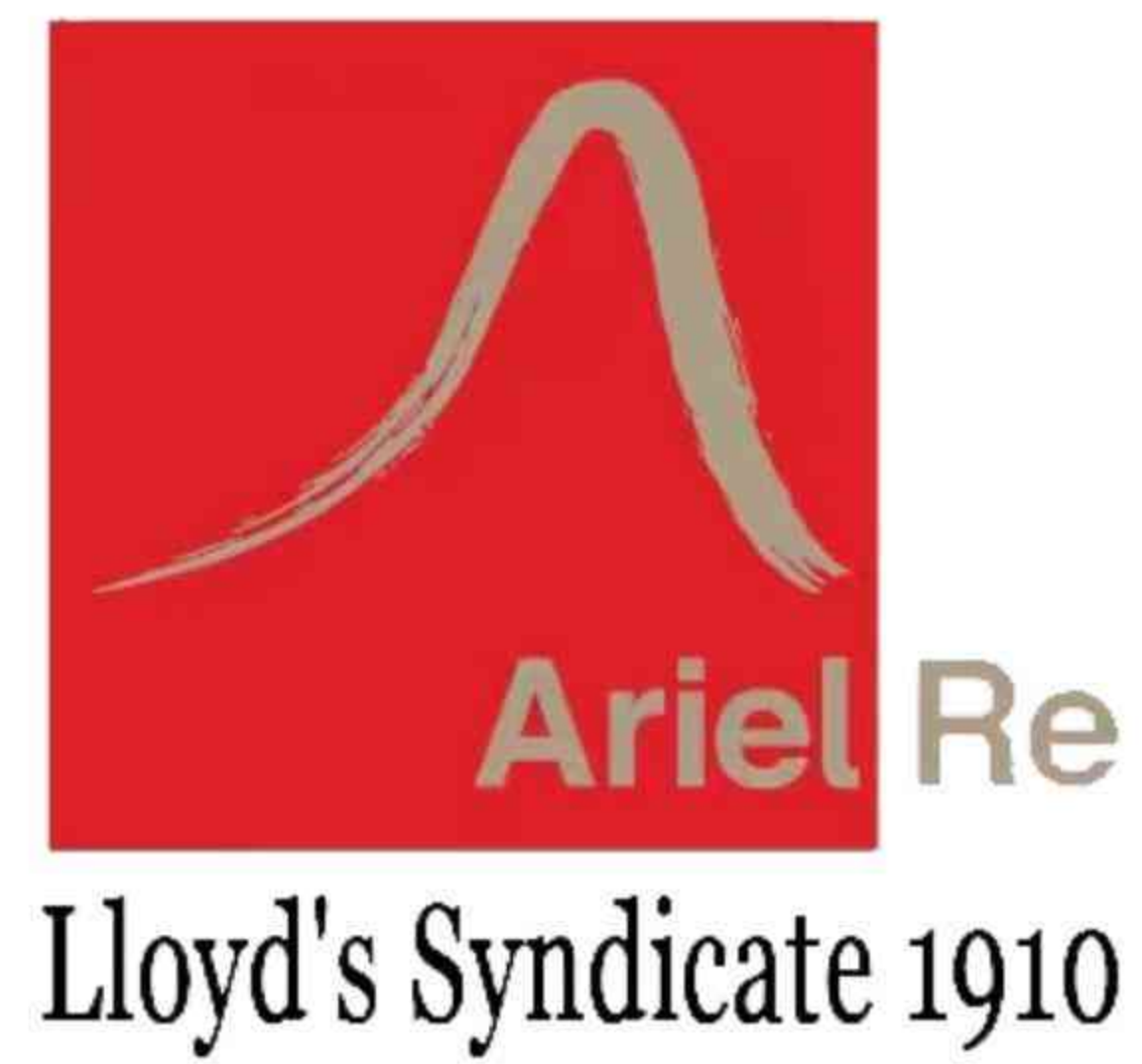
ISO 45001

Certificates

Additional Services

Horay offers solar performance insurance lasting up to 30 years, along with module recovery and recycling services.

For full details, please contact us.



LLOYD Ariel Re



PV CYCLE



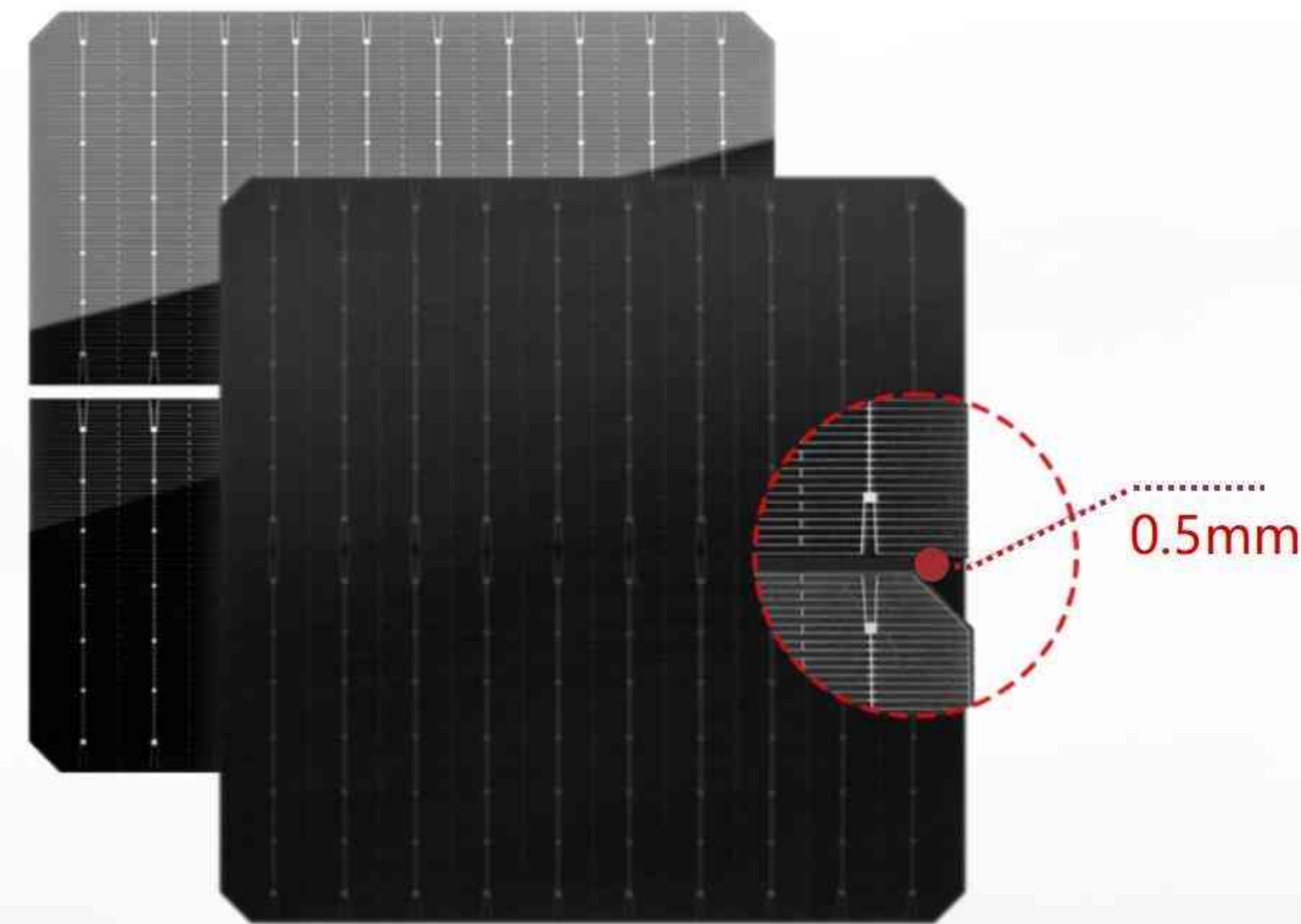
PERC Technology 182mm & 210mm High Efficiency Cell

High Efficiency

- ✓ Enlarged cell area

MULTI-BUSBAR

- ✓ Reduced micro-cracking risk
- ✓ Increased active working area



HALF-CUT TECHNOLOGY

- ✓ High-precision laser cutting
- ✓ Lower internal power loss

MINIMIZED CELL GAP

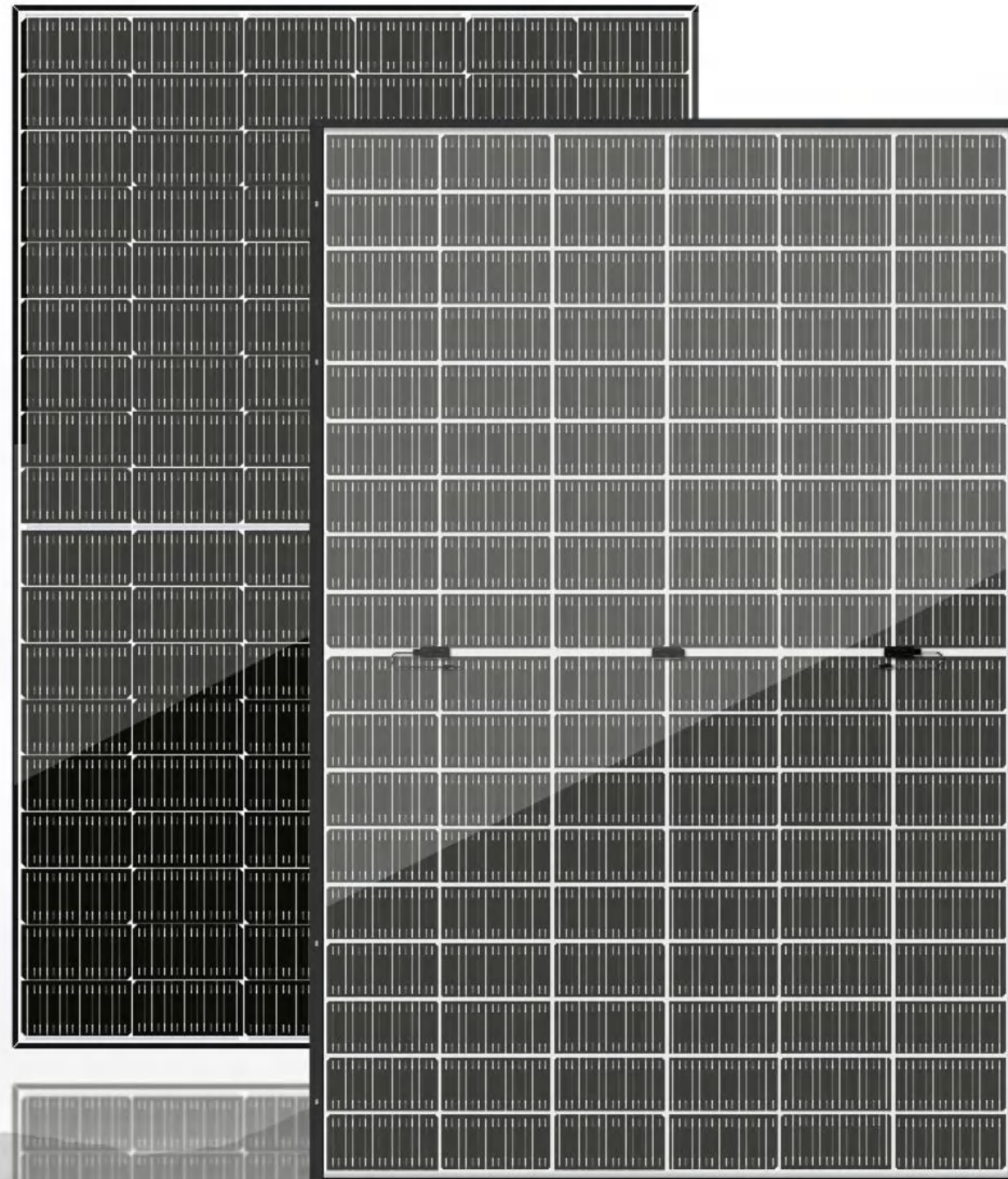
- ✓ High-density encapsulation

Innovative N-Type Technology

Innovative Cell Technology

- ✓ Selective passivation contact
- ✓ Slim multi-busbar

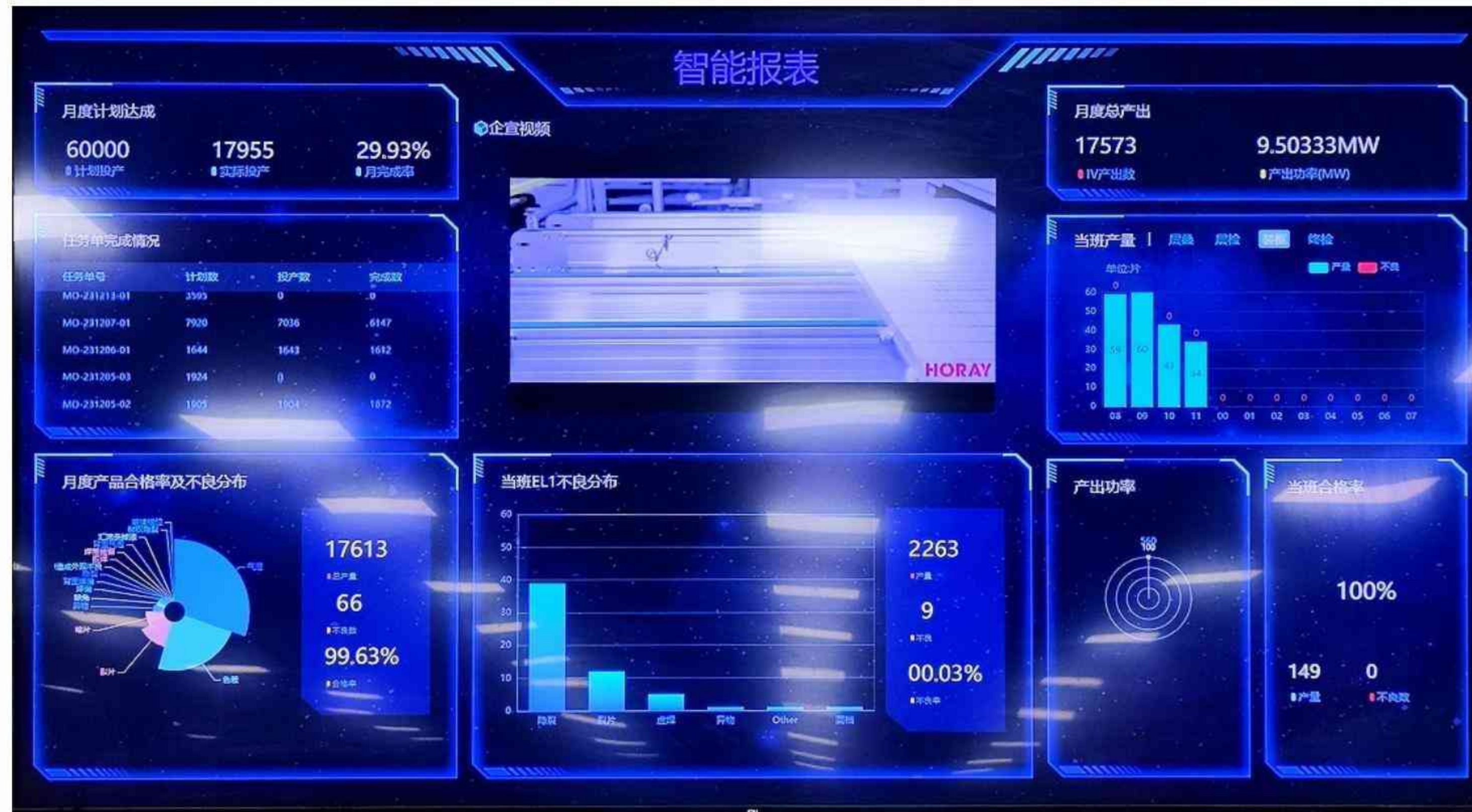
- ✓ Larger active working area
- ✓ Higher power output
- ✓ Lower attenuation rate



Extra Power Gain From Bifacial Applications

- ✓ A significant power increase from the backside

- ✓ High intensity encapsulation
- ✓ Superior load capacity



- Manufacturing Statistics
- Product Line Management
- Quality Control
- Fault Management
- Material Management
- Planning and Scheduling
- BOM Management

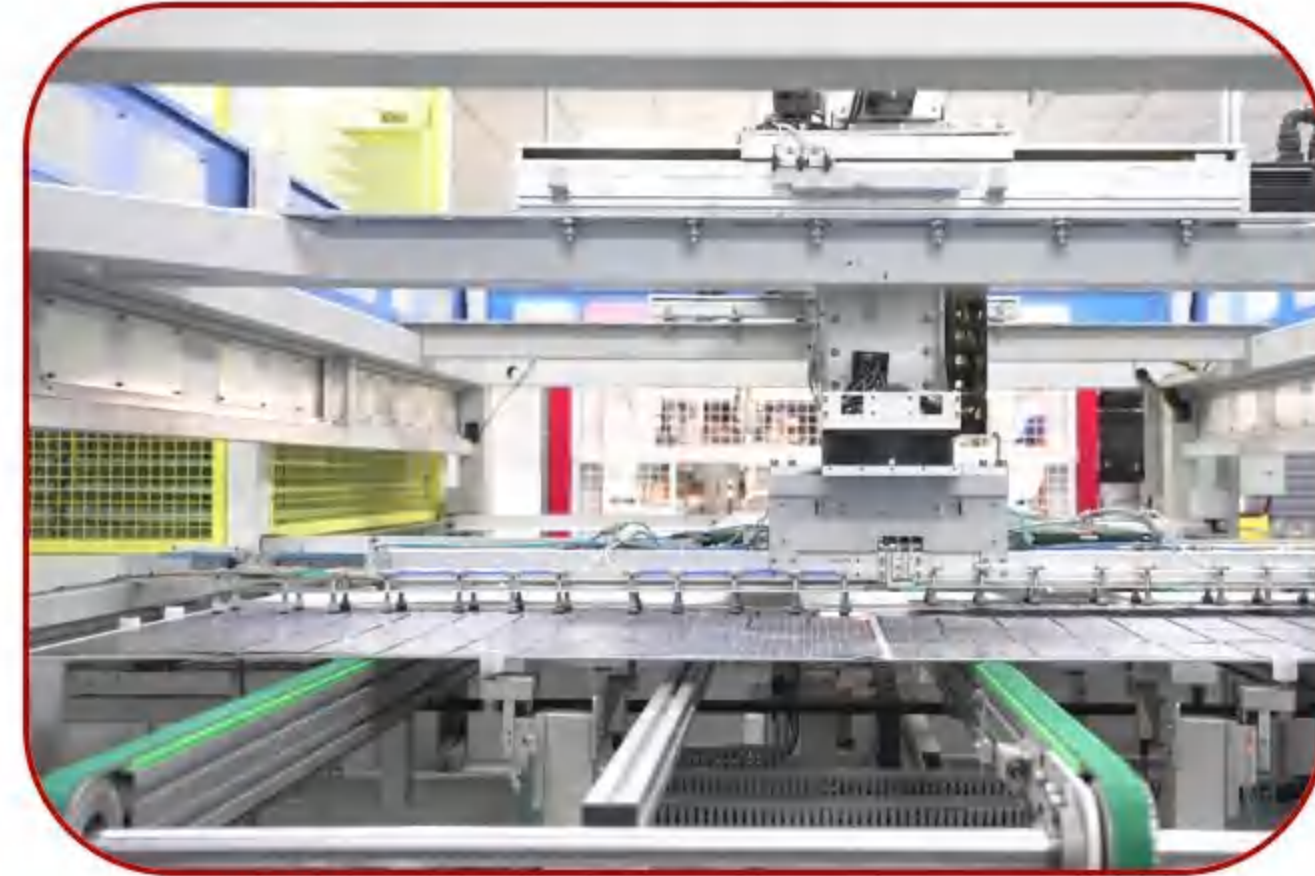




01 MATERIAL FEEDING



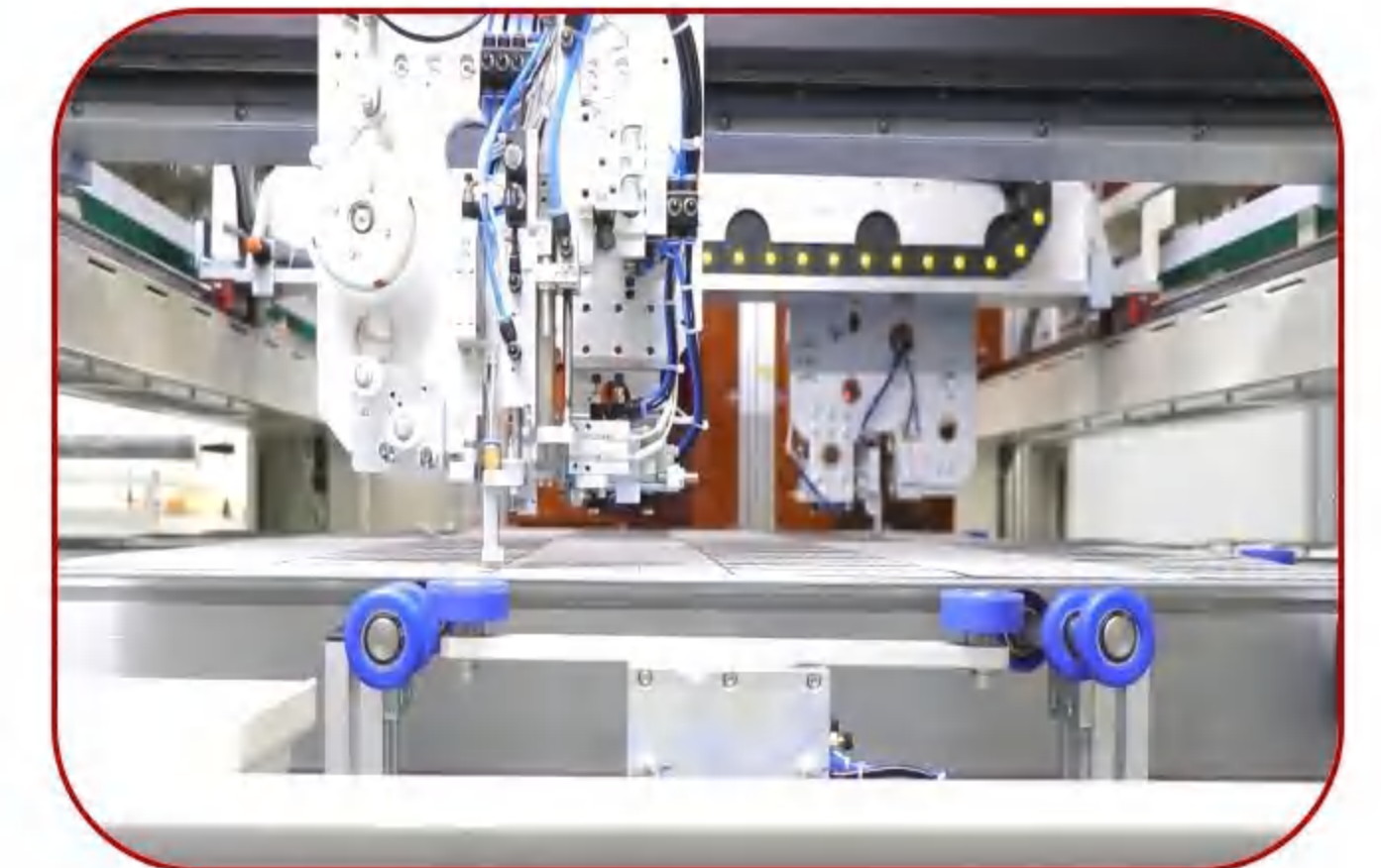
02 CELL SOLDERING



03 TYPE SETTING



04 AUTO BUSSING



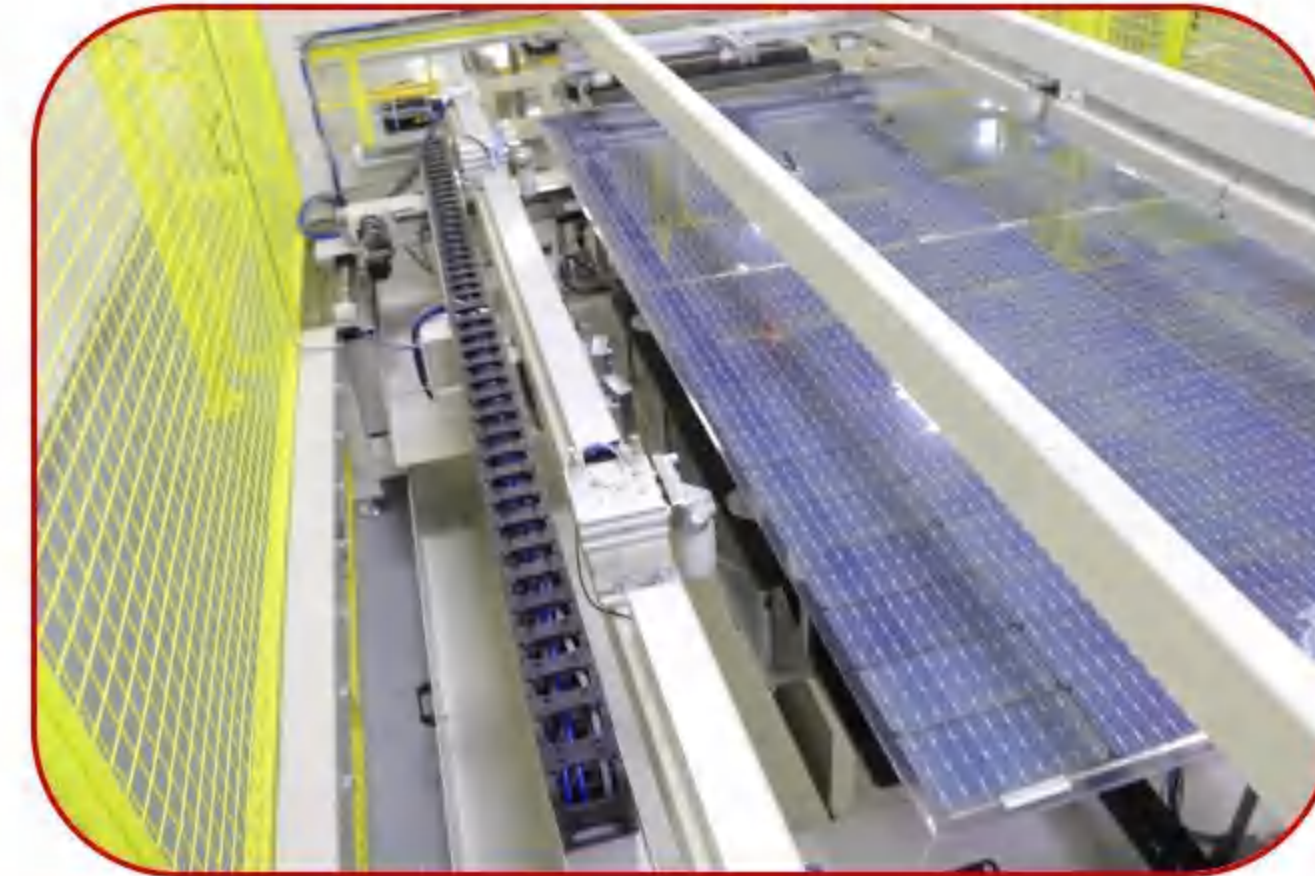
05 TAPING



10 FRAME UP



09 VISUAL INSPECTION



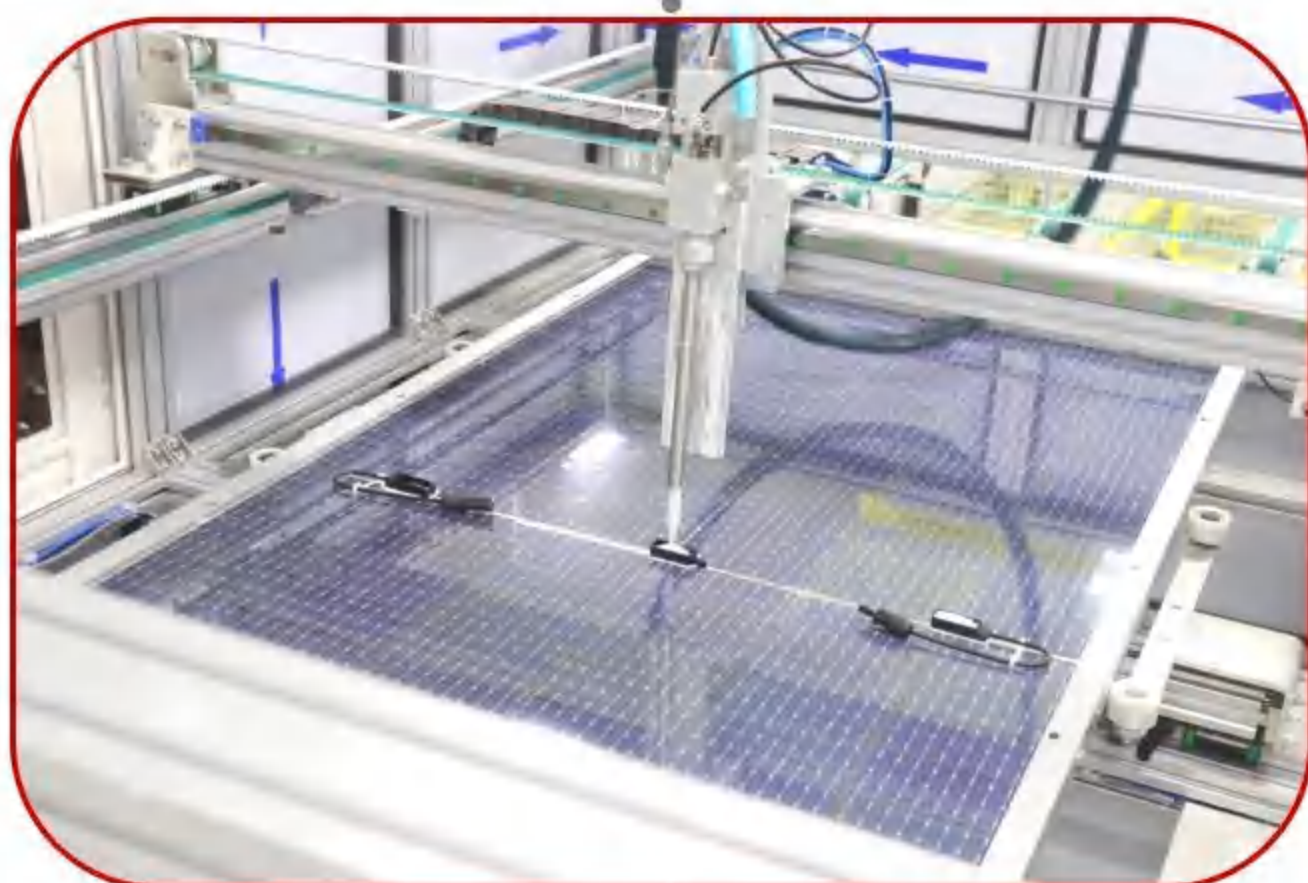
08 PARING OFF



07 LAMINATION



06 EL TEST



11 POTTING



12 SOLIDIFICATION



13 IV TEST



14 EL TEST



15 FINAL INSPECTION

- 6.6MW Project in Czech Republic

04 | Global PV Station

PV Power Plants | Commercial & Industrial | Residential

Czech Republic | 6.6MW



Czech Republic



Horay brand Solar Ocean 550W
Mono Facial Modules

Czech Republic | 5.5MW



Bruntal, Czech Republic



Horay brand Solar Ocean 460W
Mono Facial Modules



China | 5.2MW

 **China**

Czech Republic | 4.5MW



Most, Czech Republic



Horay brand N-Type 570W
Bifacial Modules

Germany | 3MW

 Warlin, Germany

 Horay brand Solar Ocean
415W Mono Facial Modules

HORAY

Italy | 2MW



Horay brand Solar Galaxy 660W Mono Bifacial Modules



Malaysia | 1.3MW

 Senai City, Johor State Capital

 Horay brand Solar Ocean 540W Mono Facial modules

Germany | 1MW

 Gross Gievitz, Germany

 Horay brand Solar Ocean 415W Mono Facial Modules

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Embrace the Sun Step into a Bright Future with Horay Solar

Horay Solar Co.,Ltd

THANKS

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-  Robert-Bosch-StraBe 27-29, 63225 Langen, Germany

