

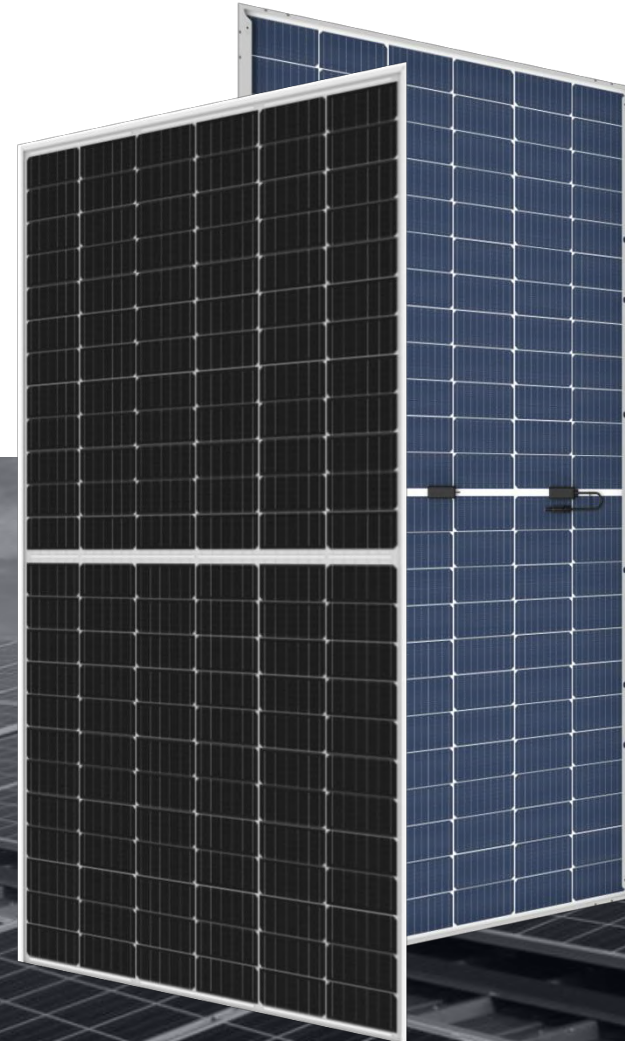


# 182 series

QUALITY CASTING VALUE

# Production Distribution

Haitai Solar has been constantly innovating in the design of its products. Its reliable and efficient 182mm modules integrate mainstream cell efficiency technologies to meet the demands of different markets and customers.



# Technical Features



## Multi-busbar

Better current collecting; improved ability to prevent invisible fissures and broken busbars



## Non-destructive cutting

Non-destructive cutting can improve the mechanical strength of cells, limit the risk of invisible fissures and enhance module reliability.



## M10 wafers (PERC)

Better temperature coefficient and weak light performance, lower degradation rate





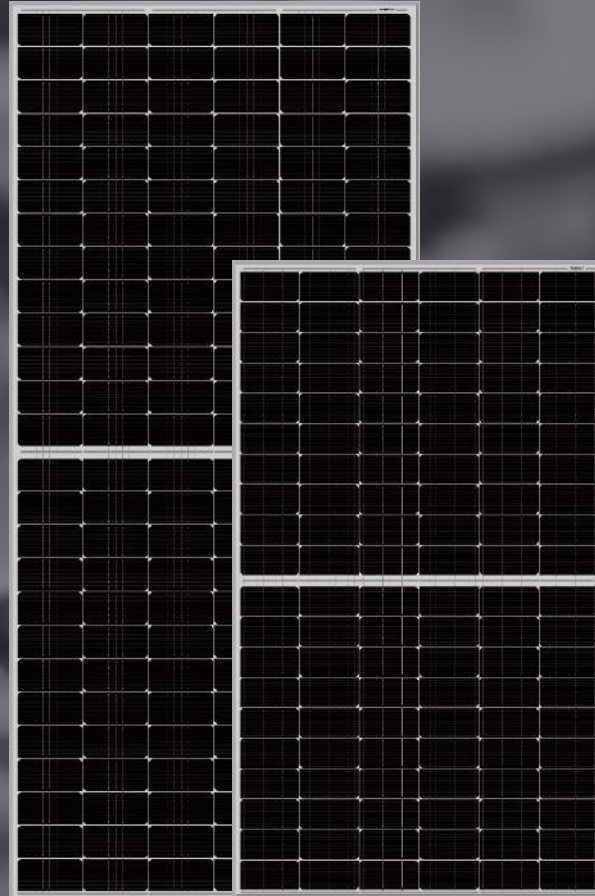
## Anti-hotspot

When hot spots occur, the hot spot temperature of a half-cut module is 10-20°C lower compared to a normal module in the same environment and application scenario.



## Low working temperature

Current running through the module is halved as the module uses half-cut cells, the lower cell energy consumption helping to reduce operating temperature.



## Not affected by shading

When the lower half of a half-cut module is shaded by horizontal PV arrays, power generated by the upper half will not be affected.



## Adaptable to high temperatures and irradiation levels

In high temperature and high irradiation environments, the output of a half-cut module is higher.

# Product Warranty

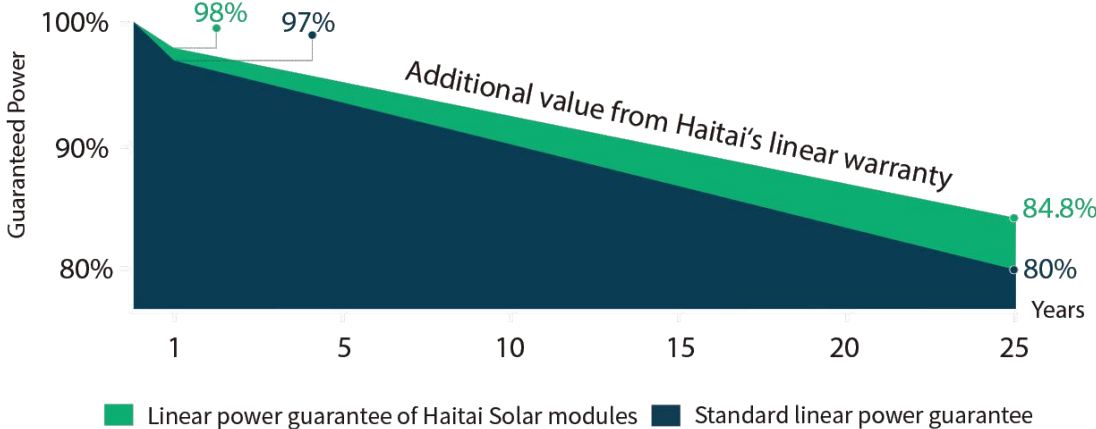


**2.0%**

Degradation of 2%  
in the first year

**0.55%**

Subsequently 0.55%  
year on year





# Product Certification

All Haitai' s product series have been placed on the list of 'Enterprises with Regulated Conditions in the PV Industry' released by the Ministry of Industry and Information Technology, and all its products have achieved certification from global entities such as TUV, CQC, UL, CSA, CEC, BIS, KS, INMETRO, SII, and MCS. Adhering to its operational philosophy of "focusing on quality and seeking technology-driven development," the company has been creative in product design in order to address the needs of various markets and customers.

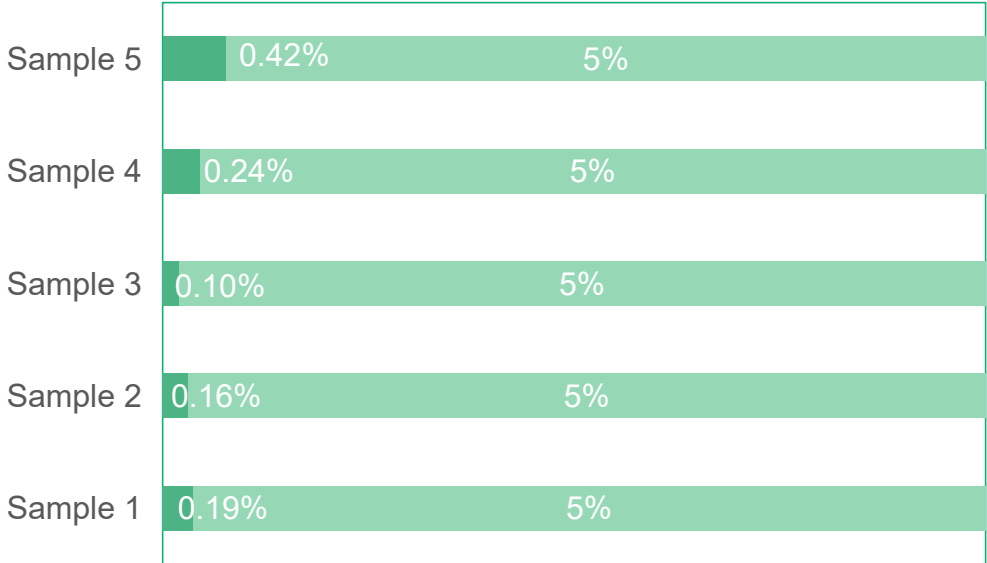


# Product Quality Assurance - PID test

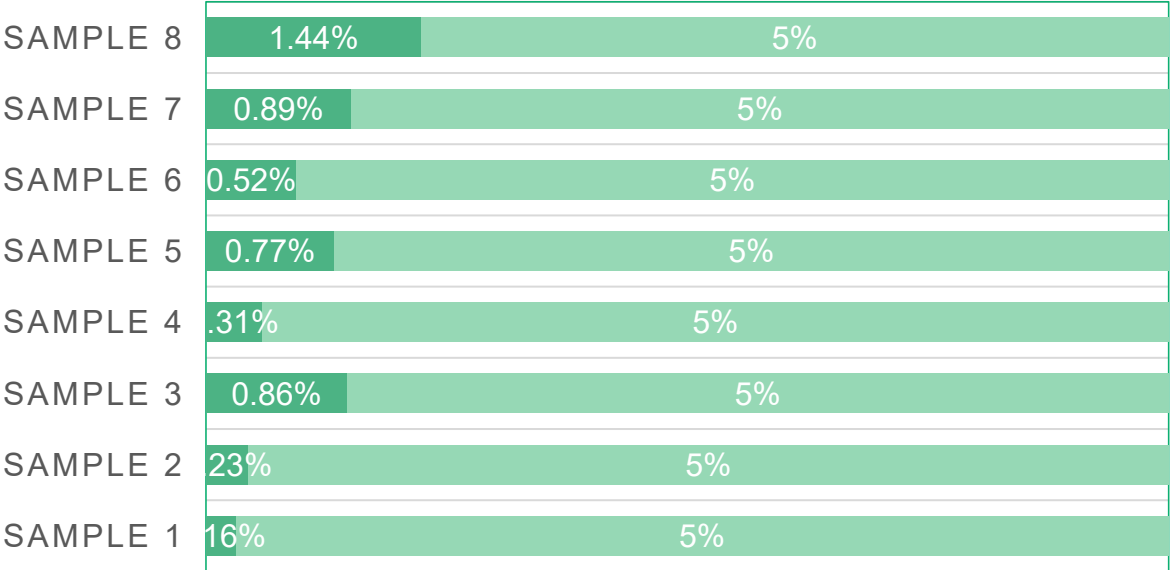


Monofacial and bifacial products all performed very well in TUV's PID96h test. Upon test completion, the average module degradation rate is shown to be 0.22% (monofacial) and 0.65% (bifacial), far exceeding IEC standards.

PID testing for monofacial mono products



PID TESTING FOR BIFACIAL MONO PRODUCTS





# System Application-BOS savings

Modules	Mainstream Output	Number of Strings	Power of String	String Power Gains
182	540W	25	13.5 kW	15.4%
166	450W	26	11.7 kW	Baseline

13.3%  
Pile  
foundation

7.8%  
Mounting  
system

3%  
Cabling

34.2%  
Combiner  
box

16.7%  
Labour  
cost

1.3%  
Land

Single string capacity increase (58%), BOS reduction (7.83 cents/W)



# Inventory of Products Available



Modules	158.75-72	163.75-78	166-72	182-72
Maximum Power (W)	410	470	450	540
Module Efficiency (%)	20.38	20.93	20.7	20.89
Module Dimensions (mm)	2008*1002	2182*1029	2094*1038	2279*1134
Voltage at Maximum Power (V)	49.48	52.14	49.48	49.53
Serial number	24	24	26	25
Imp (A)	9.86	10.86	11.0	13.17
<b>BOS reduction (Cents/W)</b>	<b>Baseline</b>	<b>-2.56</b>	<b>-3.2</b>	<b>-11.03</b>

# System Application - Inverters

Input current above 13.5A can support a 182mm module and the functioning of a string inverter. The mainstream models of the top inverter brands can all meet current adaption requirements.



Current at Maximum Power: **13.10A**  
Short Circuit Current: **13.79A**



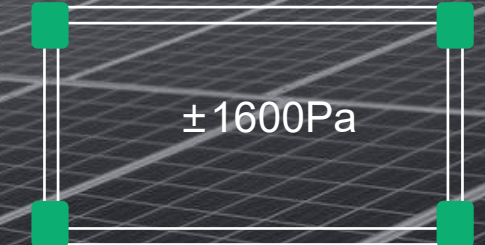
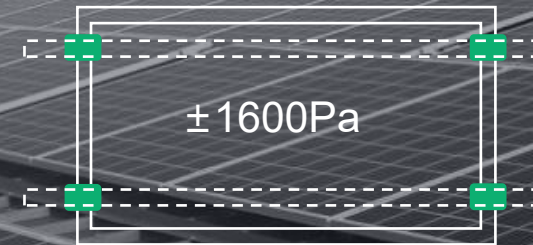
Current at Maximum Power: **13.13A**  
Short Circuit Current: **13.63A**

Inverter Type	Inverter Brand	Inverter Model	Number of MPPT	MPPT Input Current
Centralized	The 182mm module can be accommodated by the string design of the combiner box.			
String	Sungrow	SG320HX	2	40 A
	Sungrow	SG30/40...225HX	2	30 A
	Huawei	SUN2000-196KTL-H3	4/5/5	100 A
	Sineng	SP-250K-H	2	40 A
	Goodwe	GW25K/30K.....136K	2	30 A
	Goodwe	GW17-25K	2	27 A
	Ginlong	GCI-25K以上	2	32 A



# System Application - Rooftop

◆ In Europe and the US, residential rooftop and some small C&I projects favour short-side /four-corner installation methods with minimum module load not less than  $\pm 1600\text{Pa}$ . A large format module cannot meet the load requirement, whereas the 54C 182mm module launched by Haitai for such scenarios is a perfect match.



◆ There are many types of residential rooftops in the Japanese market, where the available space is quite limited. Local customers generally prefer small sized modules, and the 54C 182mm product can also be used here.

◆ For small distributed projects (< 100kW) in Australia, the minimum DC capacity is limited to 75%, so the model and power of the module chosen will directly impact installer gains. Haitai' s HTM415MH5-54 product can maximize inverter capacity to boost profits for installers.

## The optimal module type selected for 5kW mainstream inverters

Module type	Module Output	Number of strings	Power of Single String	The maximum power allowed into the inverter
182-54	415W	16	6.64kW	6.66kW

## 182 泰极

主流功率: 405-410W

尺寸: 1724\*1134\*35mm

重量: 22.0kg

载荷: +5400Pa, -2400Pa

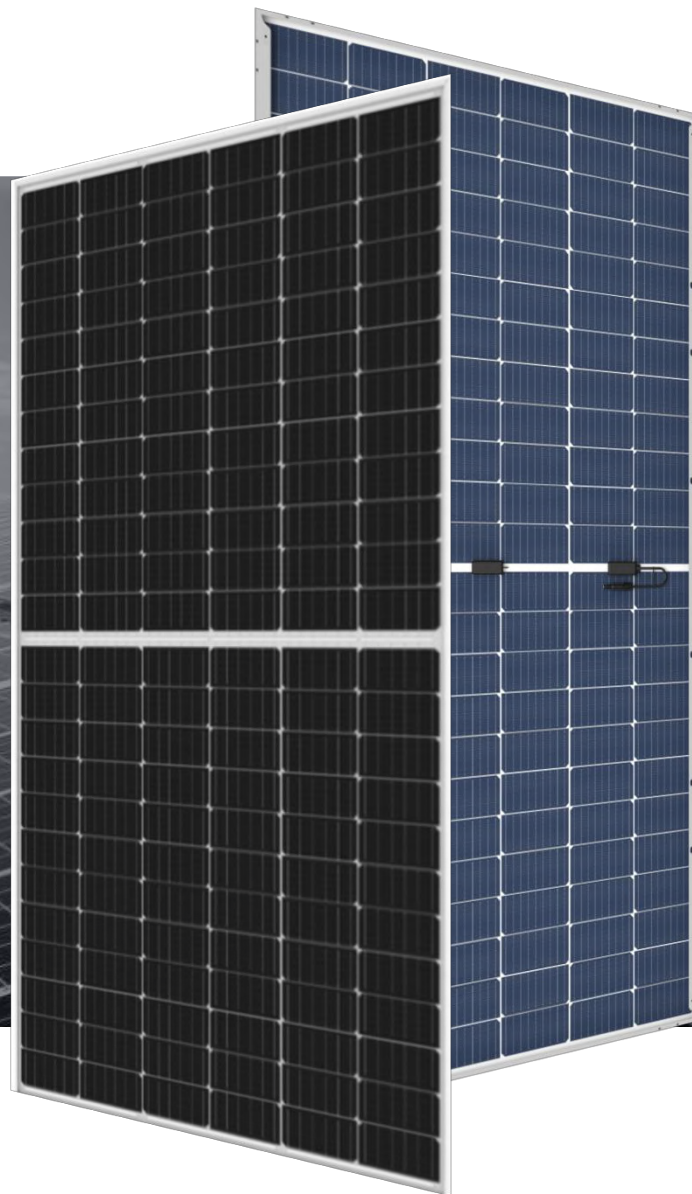
### 应用场景



户用分布式



工商业屋顶



## 泰合 182

主流功率: 540-545W

尺寸: 2279\*1134\*35mm

重量: 29.0kg/32.0kg

载荷: +5400Pa, -2400Pa

### 应用场景



地面电站



工商业屋顶



# Intelligent Quality Made



## 6S

## MES

## ERP

The use of digital, systematic, standardized manufacturing and leading-edge technology and advanced manufacturing process control ensure excellent quality of products



Haitai products meet ISO9001, 1400 and 45001 standards



High-efficiency crystalline silicon solar cells and modules – inspected and certified by Hebei Engineering Laboratory



Comprehensive smart management system to stringently control the whole manufacturing cycle



Fully automated modular manufacturing enhances product reliability, with the use of digital, systematic and standardized leading-edge technology and advanced process control ensuring excellent product quality



## Full service

01

### Pre-sales support

professional pre-sales support, comprehensive support from product technology to system solution

02

### After-sales service

dedicated service, customer first, professional 7x24h after-sales service

03

### High quality standards

strict monitoring of production lines and product quality control to meet the demands of different customers.

04

### Flexible response

In addition to its latest products, Haitai can also offer tailored versions of previous products, according to customers' special requests.



# Comprehensive Service and Efficient Operation



Resource integration, quick response to customer requests, sound pre-sales support and after-sales service to speed up signing and shipment cycles.

## Professional team

Sales

Marketing

Technical support/after-sales service

Operation management

## Different customer needs

Distributors

EPCs

Installers

Developers


Retailers

IPPs

# Utility Projects



**240MW**


 Cangzhou, Hebei Province





# Utility Projects

**130MW**

 Ruicheng, Shanxi Province





# Utility Projects



**100MW**  Baicheng, Jilin Province



**100MW**  Golmud, Qinghai Province





# C&I Projects



**4MW**

📍 Jiangsu Kanion Pharmaceutical

QUALITY CASTING VALUE

[www.haitai-solar.cn](http://www.haitai-solar.cn)



# C&I Projects





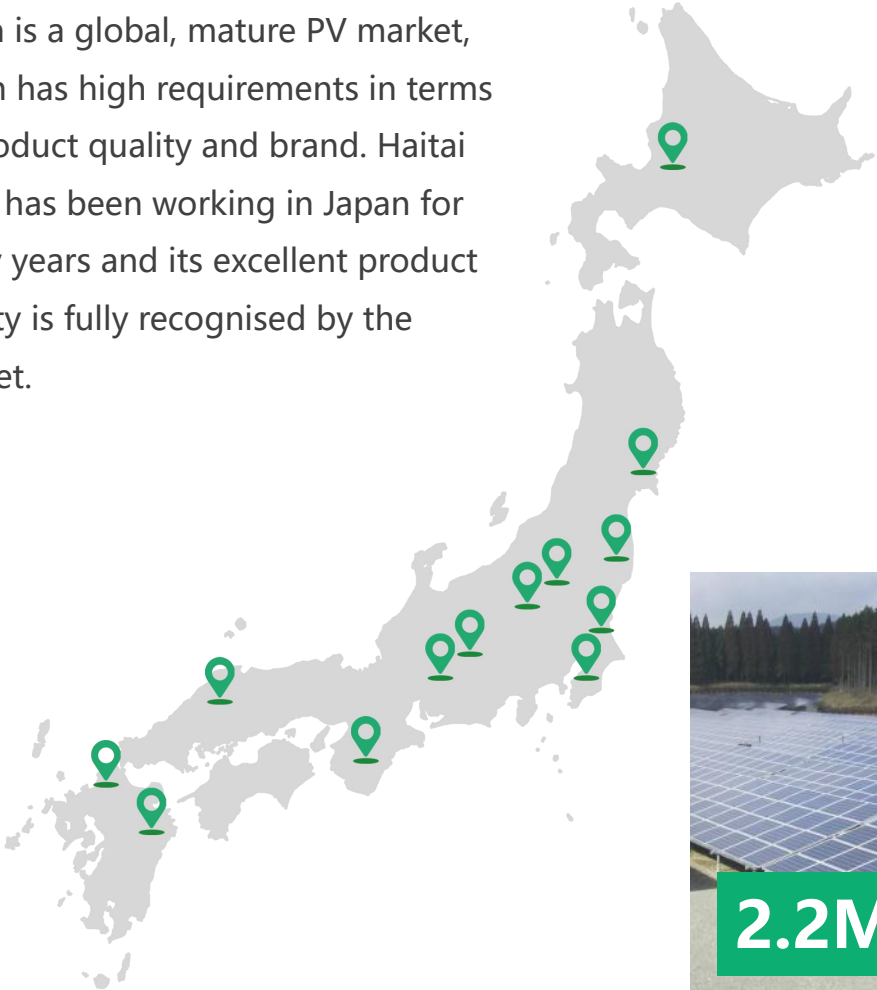
# C&I Projects





# Projects in Japan

Japan is a global, mature PV market, which has high requirements in terms of product quality and brand. Haitai Solar has been working in Japan for many years and its excellent product quality is fully recognised by the market.






# Residential Projects



**2MW**

 Tangshan, Hebei Province



# Residential Projects







**Thanks**