

CREATE NEW OPTRONIC NEW VALUE

Creates and Leads New
Values in Efficient PV

en.akcome.com



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SMART SUNSHINE

"Intelligently" Utilize Sunshine
to Make The Low-carbon
Future A Reality

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CREATE NEW OPTRONIC NEW VALUE



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Part.A

AKCOME HOLDING GROUP

A More Intelligent Layout Focused on Forward-looking PV Technology

Human beings have never stopped the exploration of solar energy. Thanks to the scientific creativity behind extraordinary imagination, the emergence of PV technology has become a reality, unlocking the mystery of sunlight. As the application of PV is growing, new technologies are also continuously emerging.

How to pursue the balance between a high conversion rate and low construction cost? Akcome Optronics focuses on the in-depth exploration of PV technology to explore the solution of efficient PV applications for you.

We are explorers of efficient PVs.

We are more willing to discover the new future of efficient PV applications with you.

Akcome Holding Group Leader of New Values in The PV Industry, and A HJT Leading Enterprise

Established in 2006, the Akcome Holding Group is headquartered in Zhangjiagang City, Jiangsu Province, one of the leading enterprises in China's New Energy industry. Three core businesses subordinated to Akcome include Akcome Technology, Chenghui International, and Huihao Group: Akcome Technology focuses on New Energy manufacturing and was listed on Shenzhen Stock Exchange in 2011 (stock code: 002610); Huihao International is committed to providing full life cycle PV power station services and was listed on Hong Kong stocks (stock code: hk1094); Chenghui Group focuses on two major fields of new energy photovoltaic and new energy vehicles, and will rely on the traditional advantages of solar frame section and other industries to build new energy cell tray and other emerging industries to achieve the IPO goal.

Akcome has been complying with the development trend of the New Energy industry, keeping up with the cultivation of the New Energy field, and has been listed in the Top 500 Chinese Private Enterprises and the Top 500 Global New Energy Enterprises for many consecutive years. The Company has more than 3,500 employees and a sales and service network in more than 80 countries and regions around the world. Over the past 17 years, with excellent quality and a good market reputation, Akcome has obtained more than 300 technical patents and nearly 500 well-known honors in China and abroad.

In line with the iterative upgrading of PV technology, Akcome actively creates a two-wheel-driven business development model with "New Energy Manufacturing + New Energy Services" as the core. The company wholeheartedly devotes itself to providing customers with full life-cycle operation services of high-end metal manufacturing, efficient cell&modules, complete sets of PV mounting system, and New Energy power stations, and focuses on the upgrading and application of HJT PV technology to promote the sustainable development of affordable New Energy to benefit the world.

No.272

Ranked 272nd in 2023 Top 500 Global Energy Enterprise

No.73

Ranked 73th in 2022 Top 100 Suzhou Private Enterprises

SZ002610

Akcome Technology
Listed on Shenzhen Stock Exchange

HK01094

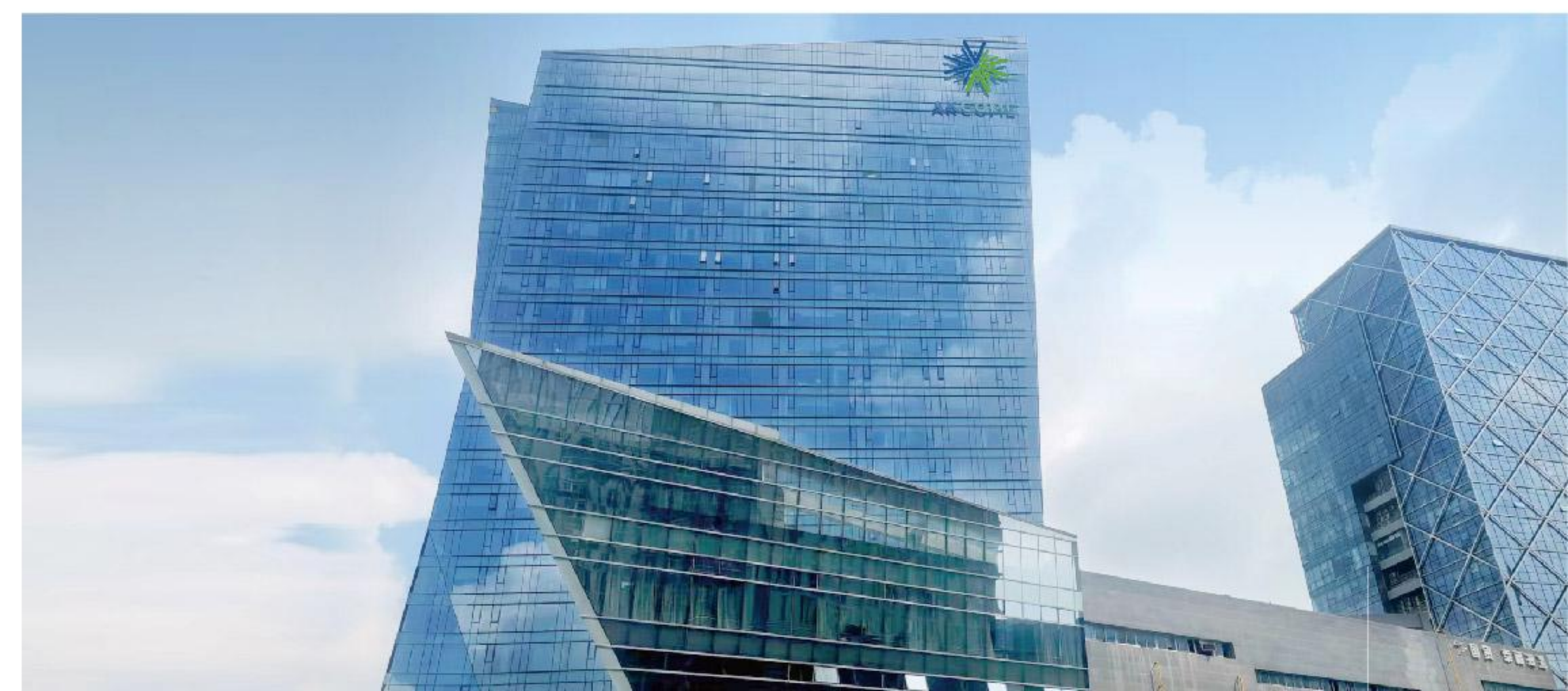
Chenghui International
Listed on Hong Kong Stock Exchange

No.71

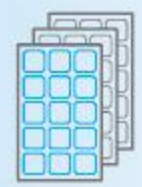
Ranked 71th in 2022 PVBL Top 100 Solar PV Brands in the world

500

Won more than 500 world-renowned honors in accumulative total



Akcome Holding Group's 4 Five-year Plan Seventeen Years of PV Attainments Focuses on New Value Discovery



2006–2010 PV Accessories Integrated Supplier

Taking PV accessories as the core and becoming the largest supplier of PV accessories in China

In 2006, Akcome's frame business was officially put into operation, which successfully developed the markets in Europe, America, and Japan, and Akcome became a leading enterprise in the global PV accessories industry. In the same period, it gradually expanded the core business of PV manufacturing such as PV material processing, PV mounting system, PV cell modules, and new PV materials, thus showing up prominently in the PV industry and occupying a leading position in the international market.

-  2019 Top 50 China Enterprises with the Most Investment Value
-  2009 Top 10 Technology Innovation Units
-  2010 Top 10 Technology Innovation Units



2011–2015 New Energy Integrated Operator

Taking the investment, construction, and operation of PV power stations as the core, step into the first tier of China's private PV power generation integrated operators

Marked by the successful listing of "Akcome Technology", it has quickly achieved remarkable achievements in developing and holding about 1.5GW of PV power plants, settled the leading position of private enterprises in the development, operation, and maintenance of PV power plants; meanwhile, established an integrated energy service division as well as power sales company to lay out in the field of energy Internet and completed the successful transformation from accessories suppliers to PV power generation operators.

-  2011 Forbes China Potential Enterprises
-  2012 Top 10 Technology Innovation Enterprises
-  2010 Top 15 enterprises in Total Economic Output
-  2011 Forbes China Potential Enterprises



2016–2020 New Energy Integrated Service Provider

Take new energy manufacturing and new energy service industry as two core businesses

The New Energy manufacturing sector takes the manufacturing of efficient batteries and differentiated modules as the core and leverages scale and technical advantages to help PVs access the Internet at fair parity. With the development and operation of New Energy projects as the core, it creates a full life cycle — a one-stop service system from investment consulting, design and development, EPC Construction, operation and maintenance, and energy sales, so as to improve the profits and overall value of the power station in an all-around way.




-  2019 Global Top PV Brand Award in China PV Brand Ranking List
-  2020 The Most Influential Operation and Maintenance Enterprise in the PV Industry of "Solar Energy Cup"
-  Ranked 8 in 2018 Top 20 Global PV Enterprises
-  2016 Golden Reputation Award of China Energy Enterprises



2021–2025 New Energy Efficient Manufacturer

Focus on new energy and efficient manufacturing, assort new energy services and high-end metal business

As an advanced and efficient manufacturing industry by centering the development, taking the new generation of efficient HJT technology as the core, and supported by module, mounting system and frame, the Company plans to realize the production capacity of more than 40GW efficient PV cell&modules within five years, strives to become a leading enterprise in efficient HJT cell &modules and boosts the high-quality development of the PV industry with the strength of technological innovation through the layout of six bases in Huzhou, Ganzhou, Suzhou, Zhoushan, Wenzhou and Overseas.

-  2022 Top 500 Chinese Energy Enterprise (Group)
-  2022 Top 100 Suzhou Private Enterprises
-  2022 PVBL Top 100 Solar PV Brands in the world



Akcome Optronic Foresees New Opportunities of The New Trends Creates and Leads New Values of Efficient PV

Akcome Optronics is a subsidiary of Akcome Holding Group, which is a New Energy manufacturing enterprise with HJT cell and module as the core guided by "Creating and Leading Efficient New Energy".

Over the past 13 years, Akcome Optronics has been well aware of the future orientation of the industry and continuously improving PV cells and modules, and upholding the determination to deeply cultivate the PV industry to take advantage of the technological development and demand change of the PV industry. The company uses high-quality and efficient PV products and convenient and perfect supporting services to help the high-quality development of the PV industry and contribute to the goal of carbon peak and carbon neutralization.



4

PV industry bases



11

branches all over the world



2,500⁺

Employees



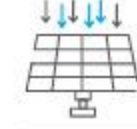
TOP3

2023 global HJT module capacity ranking



15GW

Total cumulative shipments of modules in 2022



25.6%

HJT cell average conversion



13GW

Module production capacity in 2023



12.5GW

Cell production capacity in 2023



40⁺GW

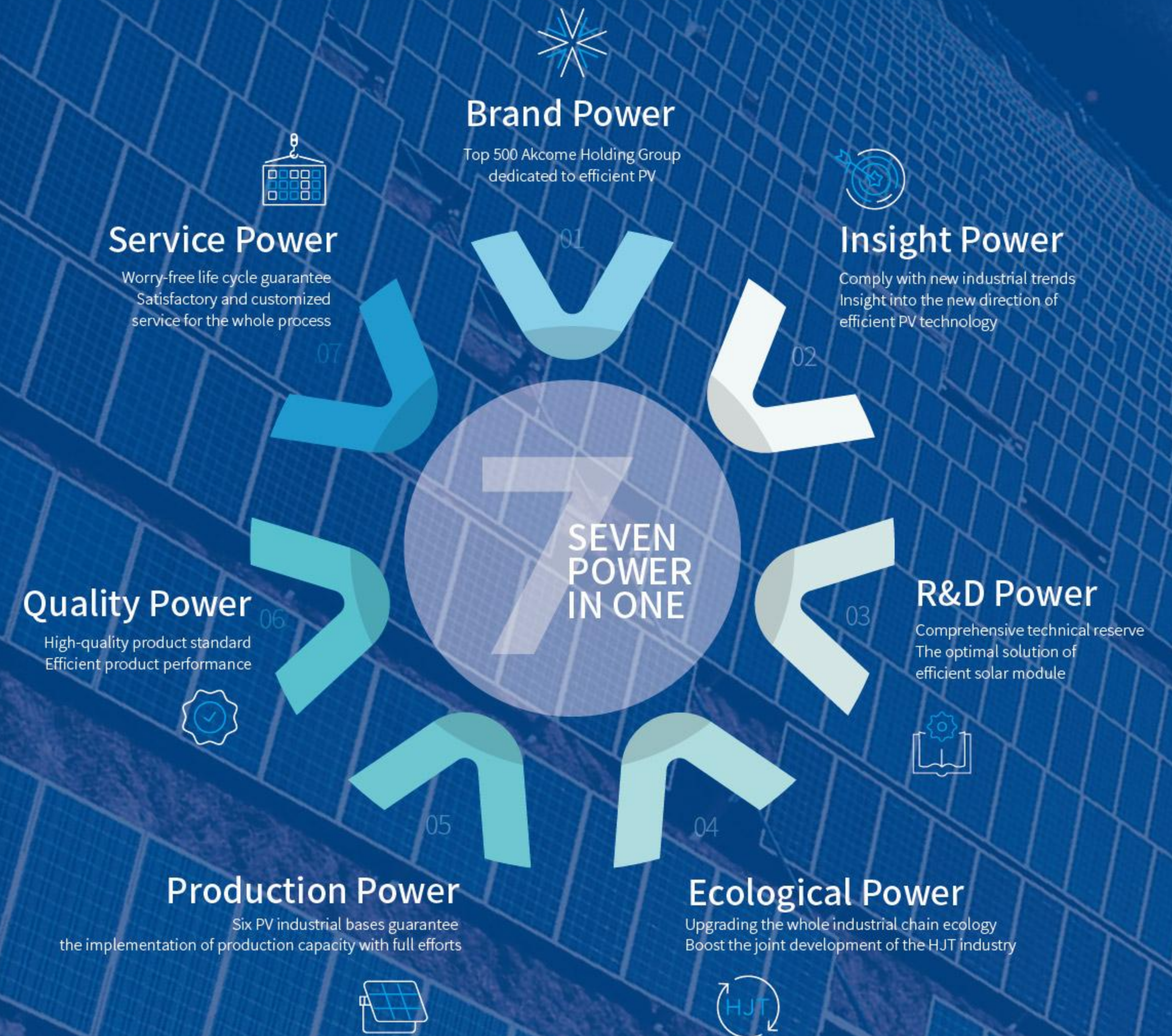
Total scale of HJT cell & module in 2025

Part.B

COMPREHENSIVE ADVANTAGES

Adopting The More Forward-looking Development,
to Lead A More All-around Advantage

Make efficiency and reliability run through every link
of the whole product life cycle, and let efficient solar
energy be your value preference.





Top 500 Akcome Holding Group Dedicated to Efficient PV

Akcome Holding Group, focused on its goal of "Creating and Leading Efficient New Energy", drives the high-quality development of PV module products with technology innovation, and always adheres to the original intention of advanced and efficient manufacturing with HJT cell&modules as the core, so as to further realize the efficient upgrading of the industry, thus serving the requirements of global customers and secure the low-carbon future.



300

Obtained more than 300 technical patents in total



500

Won more than 500 world-renowned honors in accumulative total



No.272

Ranked 272nd in 2023 Top 500 Global Energy Enterprises



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40+GW

Achieve more than 40+ GW of cell& module capacity by 2025

2022 PVBL Top 100 Solar PV Brands in the world, PVBL Global Product Practice Case Award

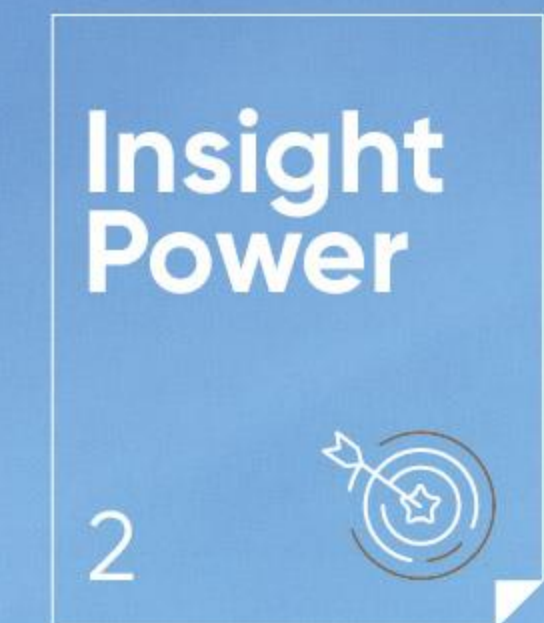
2022 PV Industry "The Most innovative Cell / Module Enterprise

2022 Impact Photovoltaic New-type PV Cell/Module Brand Award

2022TÜV Rheinland All Quality Matters HJT PV Module Energy Yield Simulation Award

Comply with New Industrial Trends Insight into The New Direction of Efficient PV Technology

We are well aware of the development trend of the current optoelectronics industry. The pursuit of more efficient and stable cell&modules has become the consensus among PV enterprises. Akcome Optronics complies with the trend from product technical route to R&D and manufacturing.



Efficient PV

Although PERC is still the mainstream of the cell module market, restricted by the limited space for efficiency improvement, more efficient cell&modules have become an irresistible trend. Akcome advantages of technology and production capacity in the field of HJT are highlighting its value.



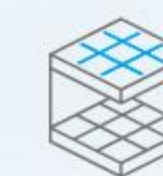
Cut-Cell Design

Half-cut design is the current mainstream. The cut-cell design can effectively reduce the current loss and contribute to the promotion of large-size slices, while HJT has obvious advantages in the cut-cell design.



Large-size Wafer

M10/G12 large-size wafer have become the mainstream of the PV module market. Akcome is well versed in the market. With the gradual release of production capacity, its advantages in large-size and modules are becoming more and more obvious, and the total output of large-size wafers has exceeded 90%.



Nondestructive Cutting

In order to reduce the risk of silicon slice cracking and ensure the yield rate, Akcome adopts the nondestructive cutting process to ensure the smooth cutting surface of the cell, without thermal-affected area, and no loss of current.



MBB Technology

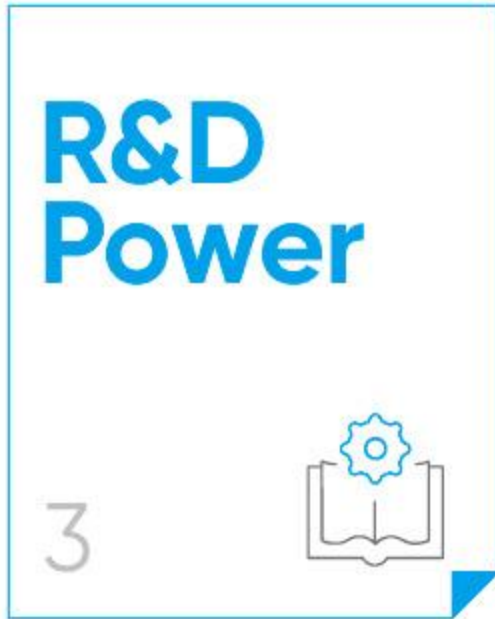
With the large-size silicon slice becoming the mainstream, the MBB technology becomes the inevitable direction. MBB technology can effectively reduce the unit consumption of silver paste and reduce the shading area, which makes the cost reduction effect of HJT increasingly apparent and allows its economy to keep improving.



Bifacial Module

Benefit by the extra power contribution from backside, the application ratio of global large-scale ground power stations to bifacial modules keeps up increasing. While HJT modules benefit from a higher bifacial generation coefficient and the power generation gain is more significant.





Comprehensive Technical Reserve Optimal Solution of Efficient Solar Module

Akcome Optronics has a cutting-edge R&D team and efficient technical reserves in the field of HJT, which is committed to providing customers with more reliable application solutions for efficient PV cells and modules. It is not only reflected in the continuous breakthrough in product efficiency but also reflected in the optimization and customization from product selection to scheme design, realizing the continuous reduction of construction cost and continuous growth of operating income of efficient PV.

Introduction to Akcome Research Institute

Founded in 2013, Akcome Energy Research Institute has always been deeply engaged in the R&D, incubation, and application of key technologies of intelligent energy. The Research Institute team is mainly composed of cutting-edge talents with master's degrees and 8-10 years of PV cutting-edge experience. Over the past 10 years, the Institute has been down-to-earth and so deeply versed in the subject as to be able to present it with ease. After years of accumulation and development, the Institute has obtained more than 300 technology and invention patents in accumulative total, of which more than 100 patents have been applied in cell-related fields, such as HJT, which has become the backbone of Akcome's technology transformation and strategic upgrading.



10+

Akcome Energy Research Institute Founded in 2013



100+

More than 100 patents have been applied for HJT cell-related field



300+

Obtained more than 300 technology and invention patents in accumulative total



Seiichi Kiyama

Chief Technical Advisor to Akcome

- Graduated from Osaka University in Japan with a Doctorate in Engineering
- Technical director of Panasonic clean energy company and director of solar energy research institute
- One of the first researchers in Japan who developed crystalline silicon solar cells and mass production technology as well as applied them in industrialization
- Senior expert in the field of HJT efficient solar cells in Japan and the main inventor of HJT cell technology



Genbao Xu

National Distinguished Expert, General Manager of AKCOME Manufacturing Center Ganzhou Base



Zhichun Ni

Doctor of Chinese Academy of Sciences, 333 Project Talent, Innovative and Entrepreneurial Talent, President of AKCOME Future Research Institute



Xiner Huang

Doctor of Taiwan University, Initiator of Solar Cell Thinning Program of ChungShan Institute of Science and Technology, GM of Huzhou Base of AKCOME Cell Manufacturing Center

Forge The Whole Industrial Chain Ecology Boost The Joint Development of The HJT Industry



Silicon End



Cooperate with large state-owned enterprises to jointly establish and invest in silicon material production

Wafer End



Cooperate with large state-owned enterprises to jointly set up joint ventures to produce HJT wafer and sell HJT cells based on strategic cooperation

Cell End



Large scale procurement reduces the cost of fixed investment of equipment, and strategic partners or related parties provide main materials with more cost advantages and conduct strategic cooperation in terms of auxiliary materials

Module End



In addition to its own cell production capacity, the head HJT cell enterprise provides cell cuts exclusively to meet the production of Akcome HJT modules.

Power Station End



Obtain the development indicators of the power station through cooperation with the state-owned enterprises, sharing of resources and joint construction, promotion of the whole county and other measures, and supply Akcome HJT modules

Production Power

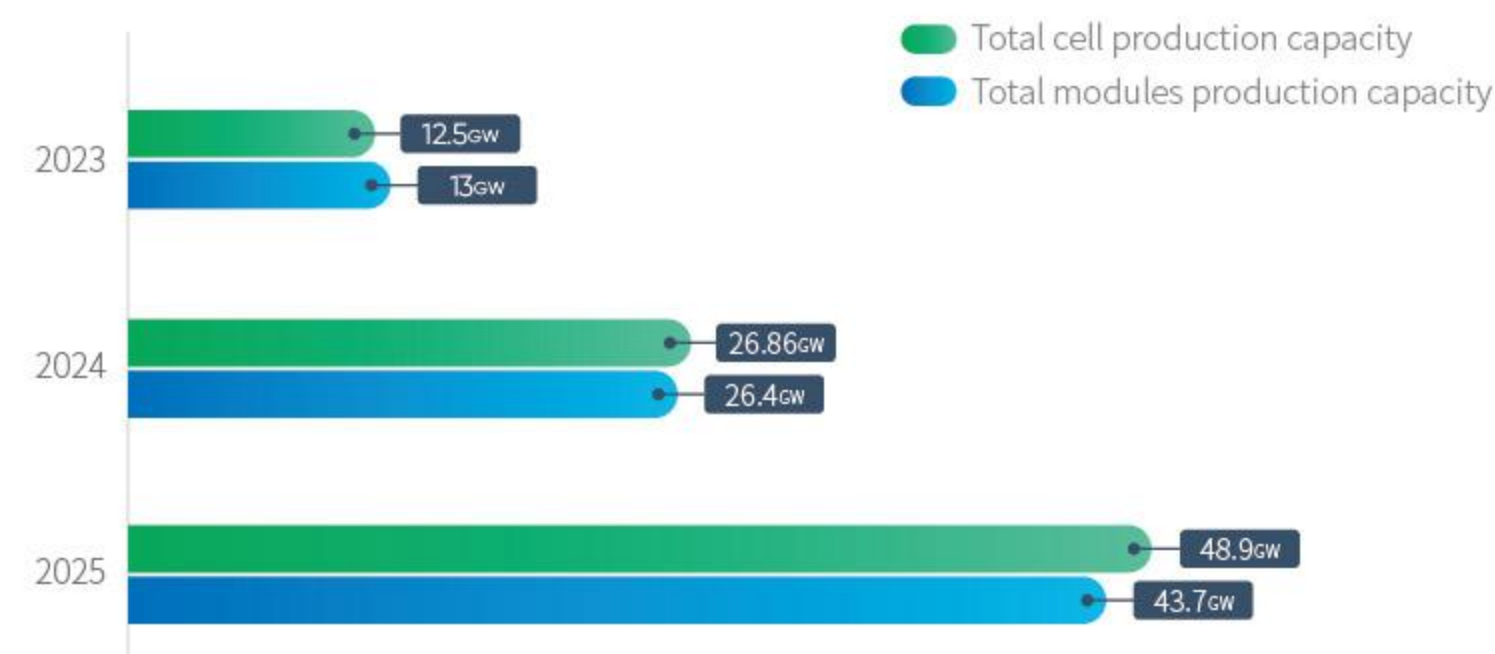
5



Six PV Industrial Bases Fully Guarantee The Implementation of Production Capacity

Akcome Optronics is working in the development direction of efficient PV with HJT as the technical core, which has gained more and more consensus. It is not only reflected in the high coordination of many customers but also reflected in the innovation and joint construction of the industrial base. Akcome has promoted the construction of a HJT application base together with state-owned enterprises such as China Resources and Zhejiang Energy as well as local capital. The Company's efficient and cost-effective delivery ability not only improves the quality of products but also enhances the Company's reliable delivery capability. It enables efficient PV products to become the trustful and first choice of global customers.

Efficient PV Product Matrix Capacity Planning



A: New Industrial Landing Mode (Joint venture + Cooperation)



01

Zhejiang · Zhoushan Base

It has established joint ventures with CR Power and Zhoushan Ocean Investment to jointly develop the HJT project with a total investment is about RMB 11.6 billion to build 3GW heterojunction battery + 4GW energy efficient component project. The project covers an area of 860 mu and is under construction in four phases. The base has supporting industries covering an area of 330 mu, with a total land of about 1190 mu.

4 Industrial Intelligent Manufacturing Base

B: New Upgrading of Manufacturing Base (Mixed transformation + Cooperation)



02

Zhejiang · Huzhou base

It has established an HJT production base jointly with Zhejiang Electric Power, Changxing Financial Holding, and other capitals; the base is located in Changxing, Huzhou, Zhejiang. Total investment of 8GW+2GW heterojunction battery module project is about RMB 16 billion, covering an area of about 680mu, which is under construction in three phases. The supporting industrial park covers an area of about 250mu, with a total land of 930mu. In addition, Guokang Optoelectronics will plan 6.86GW energy efficient N-type battery, which will also expand construction in 2023.



03

Jiangsu · Suzhou Base

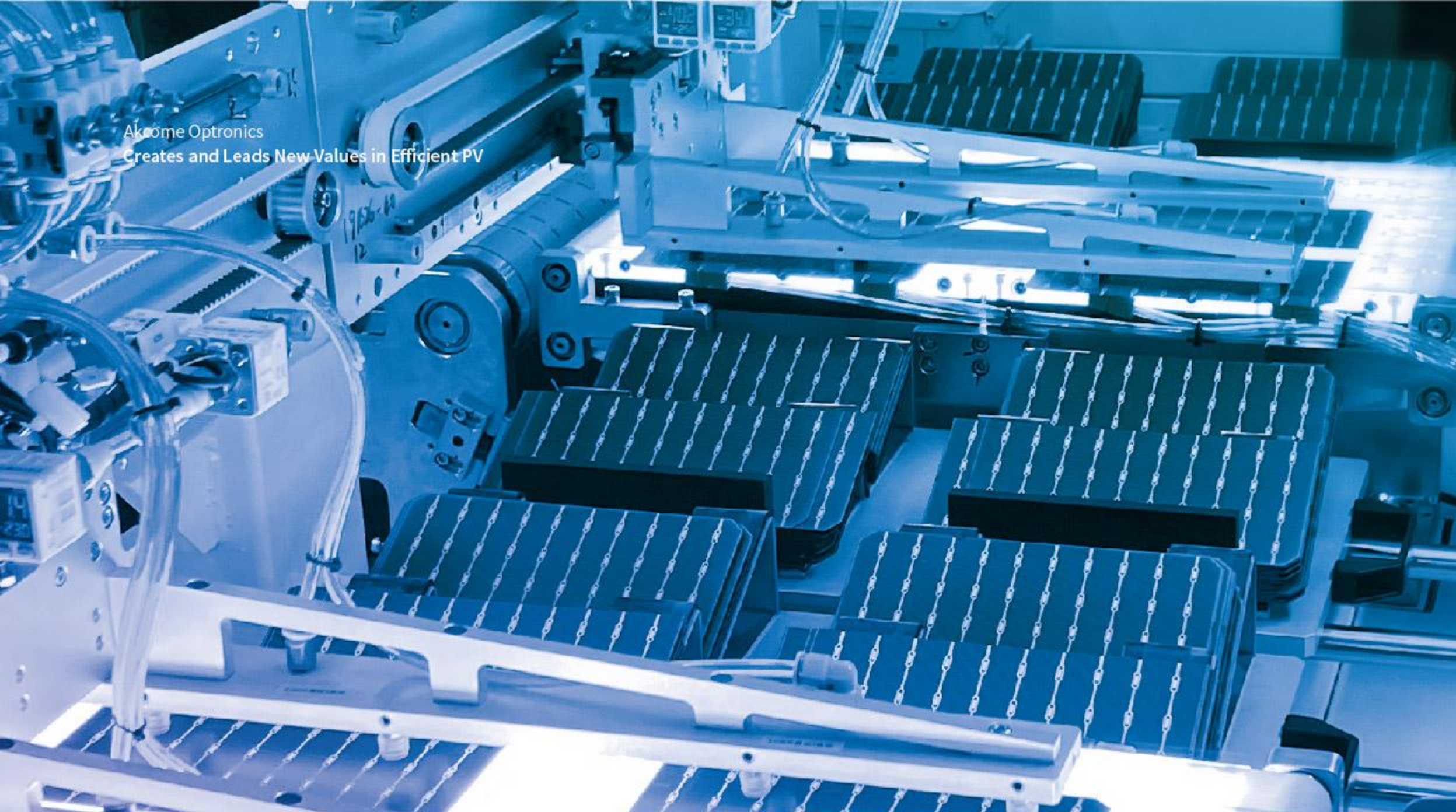
The base is located at 12.4GW photovoltaic module intelligent manufacturing base in Zhangjiagang, Suzhou City, Jiangsu Province, covering an area of more than 350mu.



04

Jiangxi · Ganzhou Base

The base is located in Ganzhou, Jiangxi Province, with the plan of 4.5GW TOPCon battery + 2GW energy efficient component + 10GW HJT/TOPCon battery. The base covers an area of 500mu. At the same time, the supporting industrial park covers an area of about 200mu, with a total land of 700mu.



Quality Power

6



High Quality Product Standards Efficient Product Performance

Cell Production Line

Use YAC, AKT, BACCN, and J&R equipment imported from Japan, Europe, and America, and realize the full-automatic feeding and blanking of each process, so as to minimize the impact of manual operation. Equipped with the industry-leading Halm tester, adopt the German Fraunhofer standard to ensure the consistency and reliability of the cell cut. Select the first-class raw material suppliers and utilize reactive plasma deposition technology to prepare transparent conductive films, which not only have the characteristics of high mobility, good conductivity, and high penetration rate but also has the advantages of high cell conversion efficiency, low broken cut rate, and low packaging loss.



Fraunhofer



RENA

ULVAC

SINGULUS



Product warranty on materials and workmanship



Linear power output warranty

Our Intelligent Selection with Confidence Your Choice with Assurance

Akcome Optronics spared no effort to build a complete set of global cutting-edge intelligent production lines to ensure the stability and reliability of each cell to module and realizes the intelligent manufacturing of the whole process of products from R&D, production, testing, and packaging, thus making the excellent performance of the product.

Module Production Line

The production line is equipped with the production capacity of a multi-main grid, laminated imbricate module, and other cutting-edge products. It is well compatible with PERC, TOPCON, HUT, and other efficient cells, adopted advanced automatic production equipment in the industry, imported an advanced MES management system to digitally track the whole production process of products, and provide customers with high-quality and reliable products: The experimental center is equipped with a comprehensive aging box, PASAN simulator, El tester, dynamic load tester, ultraviolet aging chamber and other equipment, and the test items cover the reliability, safety, electrical performance and durability of PV modules and their raw materials. It meets the requirements of IEC61215/IEC61730/UL and other international testing standards and has the capability to apply for CNAS, certification authority witness laboratory, and other qualifications.



Service Power

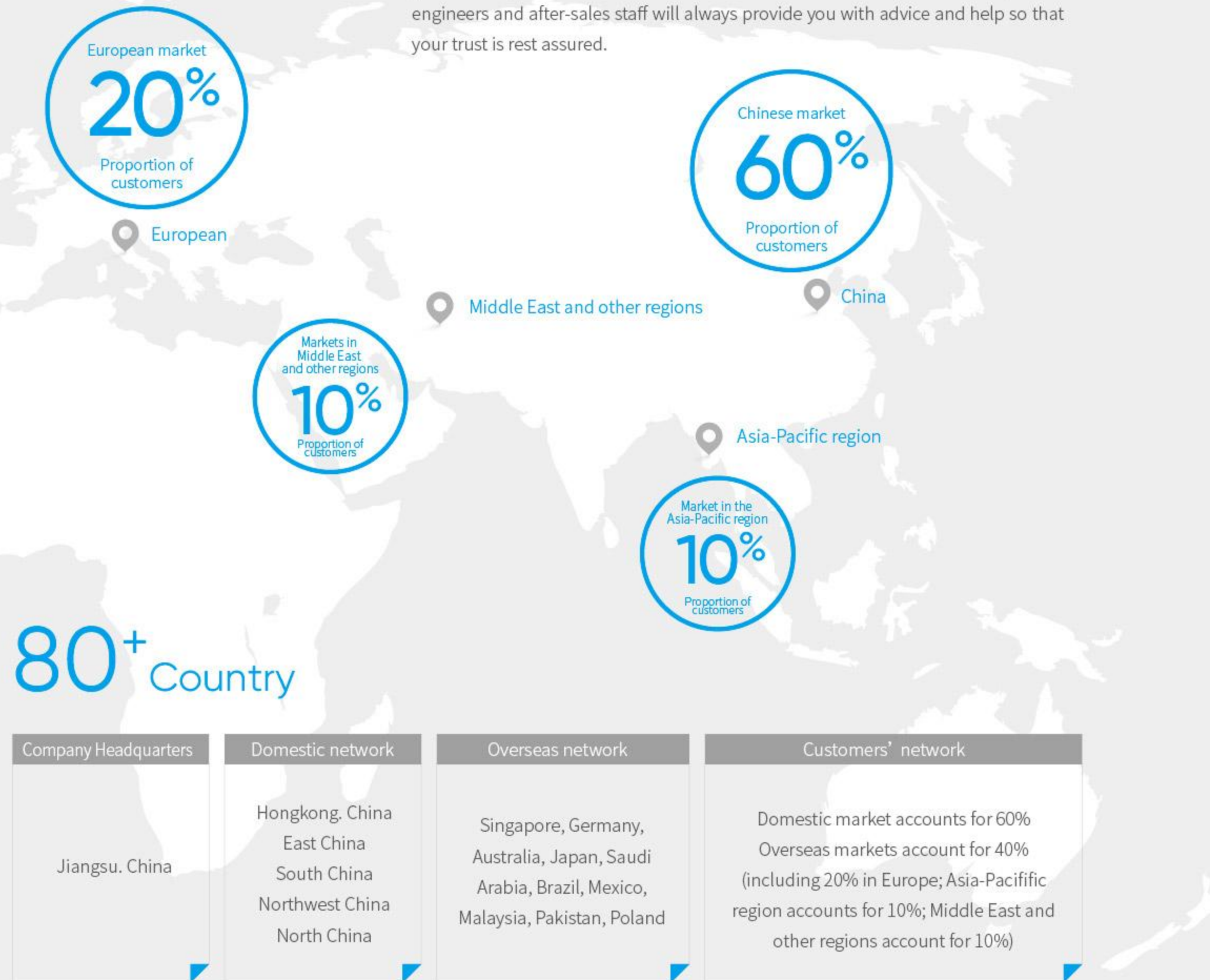
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Worry-free Life Cycle Guarantee Satisfactory and Customized Service for The Whole Process

Akcome Optronics not only meets customers' requirements with an efficient PV product matrix but also provides customers with worry-free service throughout the process with a global marketing network, customized delivery scheme, and rapid response mechanism.

Akcome Optronics always implements the belief of "Customer First" in the whole process of pre-sales, in-sales and after-sales, and our professional product engineers and after-sales staff will always provide you with advice and help so that your trust is rest assured.



Part.C

AKCOME PRODUCT

Adopt More Lean Products,
Chase and Decode PV Modules with
A Better Understanding of Sunshine

When PV gradually becomes the primary choice of clean energy, searching for higher quality PV power stations will be closely linked with it.

Nowadays, our measurement standard for power stations is not only the data of power generation capacity and power generation cost itself, it is more important to improve the possibility and conversion efficiency of PV modules.

How to rely on new technologies to bring changes to the benefits of PV power plants?

Akcome Optronics takes HJT as the technical core to optimize the solution of cost reduction and gain increase for PV power station for you.

We are practitioners of efficient PV,
and more willing to work with you to make the PV power station against the challenge of time.

Integrate Industrial Intelligence into Technological Innovation Advance by Chasing Dreams of Efficient PV

With 13 years of industry intelligence, Akcome Optronics has been constantly optimizing its position in the field of PERC cell and phase parts manufacturing, while adapting to the future, focusing on the R&D of efficient PV technology and committing to the practice and application of HJT in the industry.

With the joint construction of the industry, the investment cost reduction and operation gain effect of HJT project implementation are becoming more and more obvious. Akcome Optronics has realized the continuous upgrading of high-efficiency AK iCell, AK iPower HJT modules and AK iChaser PERC modules, bringing affordable and reliable PV New Energy closer to you.

Efficient PV Product Matrix

Cell Series

Efficient cell
AK iCell HJT/PERC

Module Series

Efficient HJT module
AK iPower 6.0 / 7.0

Efficient TOPCon module
AK iTopper 4.0 / 5.0 / 6.0

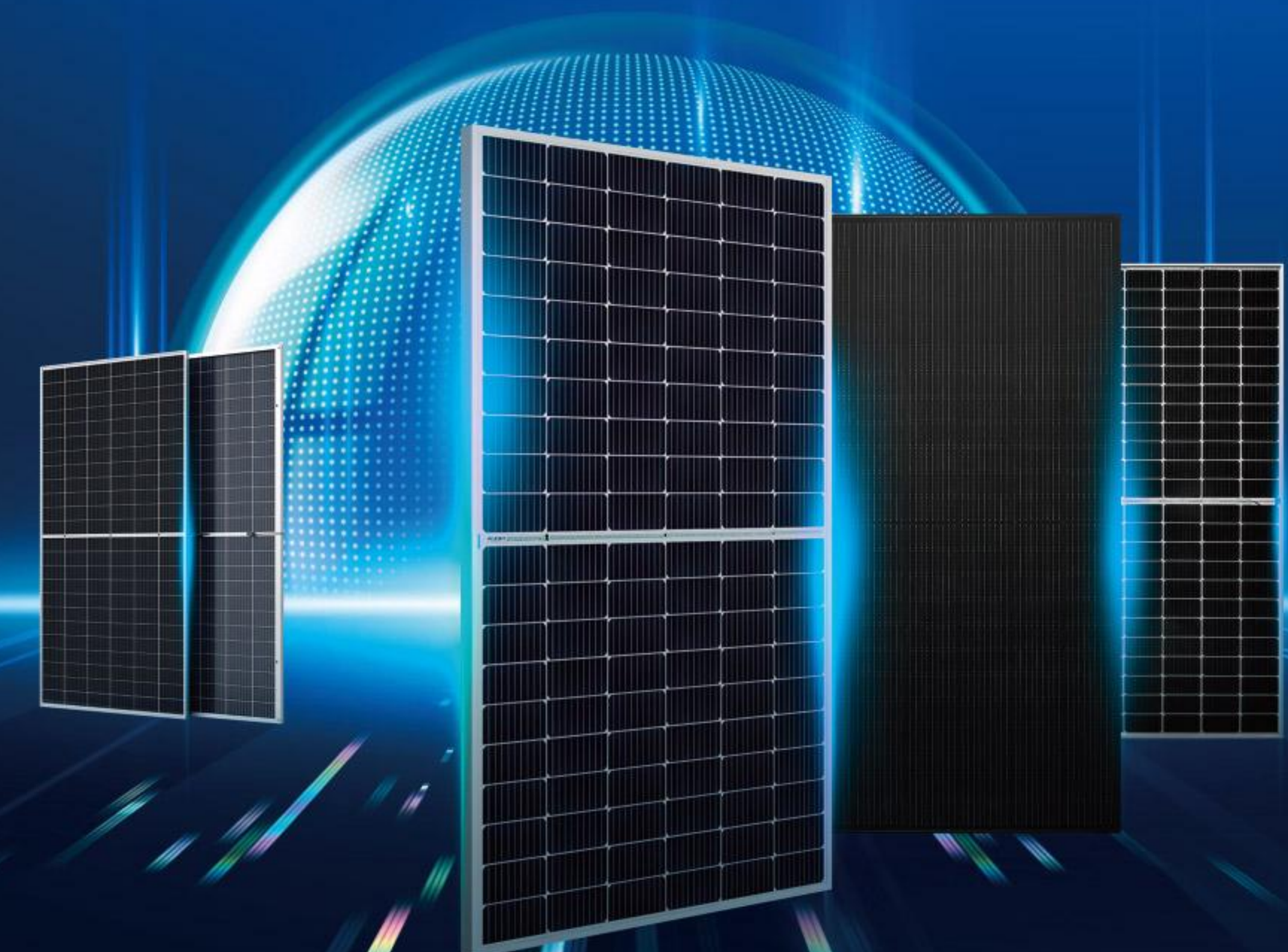
Efficient PERC module
AK iChaser 4.0 / 5.0 / 6.0

Global Consensus, HJT, A New Suddenly Rises Let the Same Sunshine Create Different Value

Efficient HJT Cell
Efficient HJT Module

Reliable One-stop Efficient PV Solution

<p>"Add" power +</p> <p>Higher Light energy conversion efficiency</p> <p>HJT has realized higher light energy conversion efficiency with new technology and realized reliable power generation gain with large panel and high double-sided power generation coefficient</p>	<p>"Reduce" cost -</p> <p>Lower Cost and attenuation rate</p> <p>With the continuous reduction of equipment investment of HJT and non-silicon manufacturing cost, it matches the lower attenuation rate of the module in the whole life cycle and helps you effectively reduce the cost</p>	<p>"Multiply" efficiency ×</p> <p>Multiplied Power generation efficiency and benefit</p> <p>Comply with the rapid improvement of industrial demand and production capacity, the hourly power cost advantage of HJT is becoming more and more obvious, which can double your power generation efficiency and gain.</p>	<p>"Remove" defects ÷</p> <p>Better production efficiency and yield rate</p> <p>Simplified cell process and ultra-high yield rate of finished products and mature packaging process to effectively remove the leakage current effect, as well as enable the integration of the working quality and efficiency of modules.</p>
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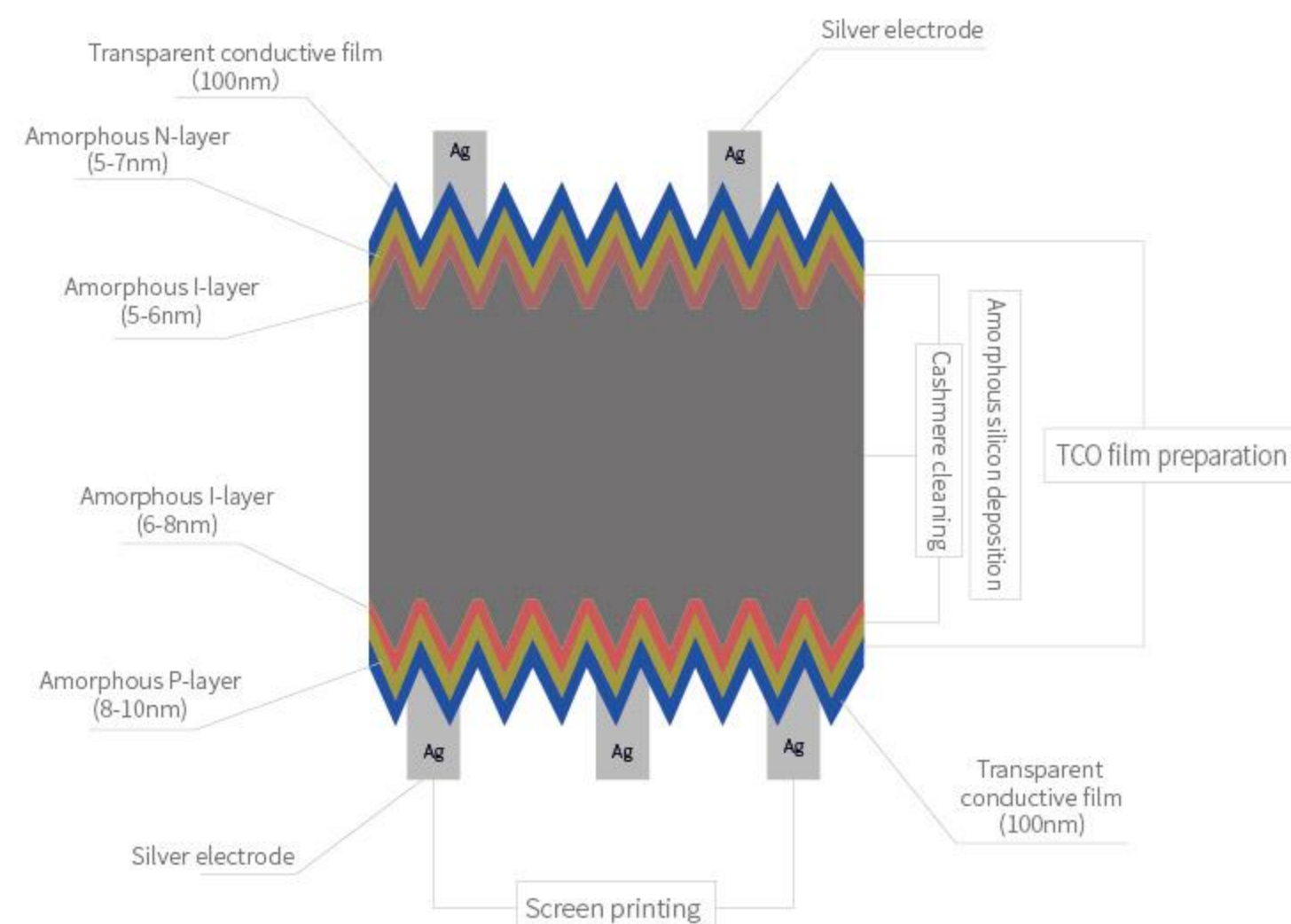


The Efficient Mystery is Showcased within A Small Cell

Efficient HJT Cell Core Advantages

- High generation gain
- High Backside generation gain
- Biggest cost reduction potential
- Simple structure of HJT
- Minimal manufacturing process
- Easy to control yield rate

HJT Cell Technology Process



AK iCell HJT

Efficient HJT Cell

25.6%

Average efficiency is 24.7% and above

95%

Bifacial rate up to 95% and above

15%

Generation gain over 15%

4

Core 4-step technology, easier to maintain a high yield rate

PID

No PID, LID

100 μ m

It can achieve 100 μ m thickness silicon slice mass production



Low temperature Coefficient



Ammonia-free wastewater production

AK iCell HJT 210 12BB Parameters

Efficiency (%)	Maximum output power P _{mpp} (W)	Short circuit current I _{sc} (A)	Filling factor FF (%)	Maximum power point voltage U _{mpp} (V)	Maximum power point current I _{mpp} (A)
25.2	5.56	8.588	86.35	0.677	8.207
25.1	5.53	8.580	86.11	0.676	8.186
25.0	5.51	8.573	85.89	0.675	8.166
24.9	5.49	8.560	85.78	0.674	8.145
24.8	5.47	8.554	85.47	0.673	8.123
24.7	5.45	8.553	85.24	0.672	8.116
24.6	5.43	8.542	85.11	0.671	8.093

AK iCell PERC

Efficient PERC Cell

23.3%

Average efficiency is 23.3% and above

PID

High resistance to PID

2%

Lower degradation, first year $\leq 2\%$, annual -0.3%

25

Linear power output warranty up to 25 years



Low risk of microcrack and snail trail



Excellent high temperature resistance, anti-wind sand, anti-salt spray performance



Low operation and maintenance cost, frameless design



Excellent wind and snow load capacity, excellent fireproofing performance

AK iCell PERC 182 10BB Parameters

Efficiency (%)	Maximum output power P _{mpp} (W)	Short circuit current I _{sc} (A)	Maximum power point voltage U _{mpp} (V)	Maximum power point current I _{mpp} (A)
23.4	7.72	13.646	0.600	13.035
23.3	7.69	13.725	0.590	13.013
23.2	7.65	13.705	0.589	12.990
23.1	7.62	13.686	0.588	12.968
23.0	7.59	13.665	0.587	12.944
22.9	7.56	13.656	0.585	12.923
22.8	7.53	13.651	0.583	12.907



Efficient HJT Module “Peculiar” Shining in The Sun

No matter when, we always pursue faster, higher and stronger.

Just like the exploration of the mystery of sunshine, rely on efficient PV modules to achieve faster power generation efficiency, higher energy efficiency conversion and stronger weather-resistant stability.

All these benefits are the results of advancements in science and technology and the ability to put beautiful imagination into practice.

Akcome Optronics has devoted itself to PV for the past 13 years, integrating intelligence into practice - insisting on transforming the dream ideal into the exploration and application of new PV technologies, even if only 1% of energy efficiency improvement is achieved.

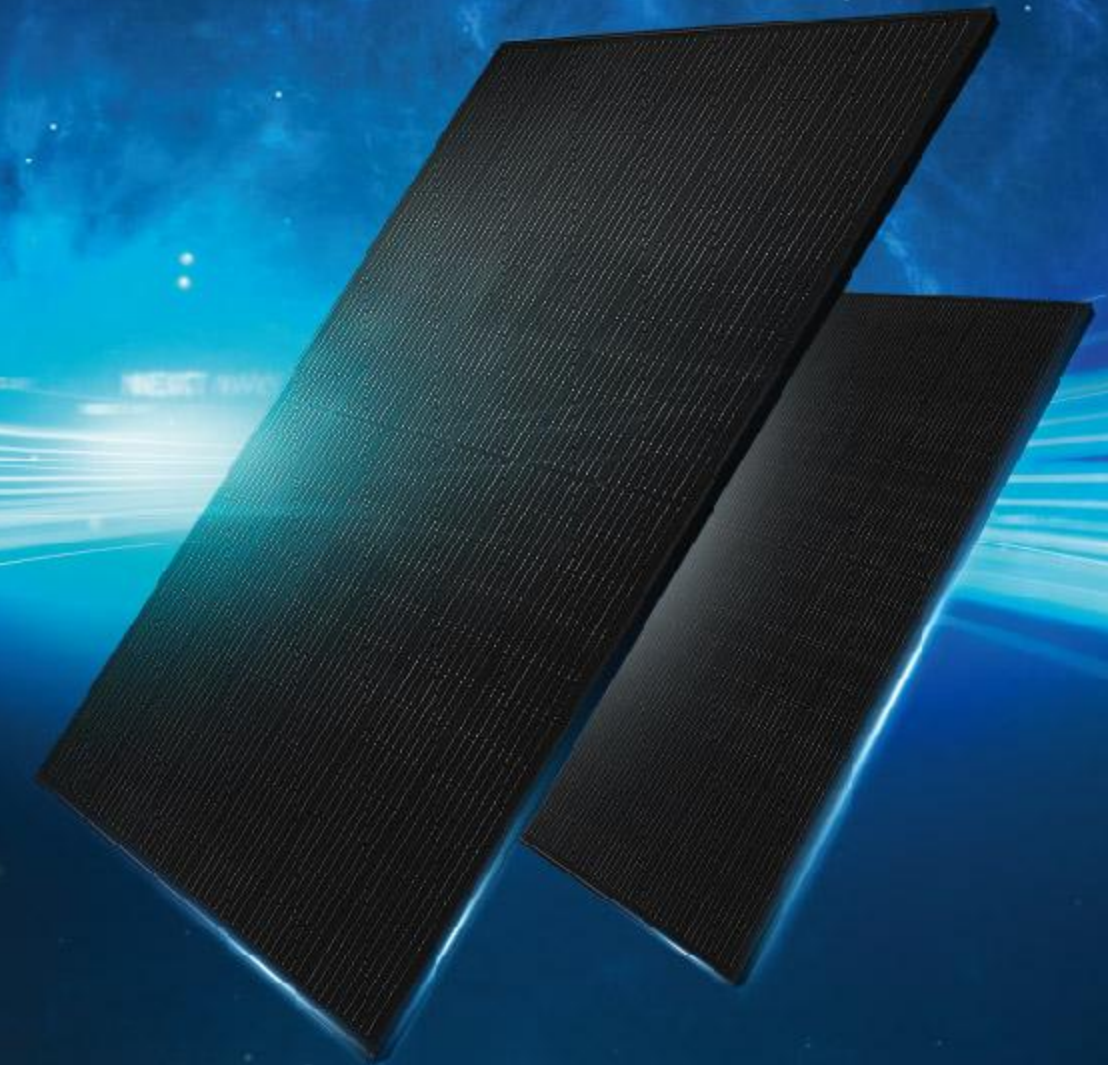
What is "chasing a dream"? It is not limited to imagination, nor to achievement. It is a "dreamer".



AK iPower Product series



Greatness in Simplicity Different from Nature



23.2%
Efficiency

85%-95%
High bifacial rate

≤1%
Lower degradation
first year ≤ 1%
Annual -0.25%

3+%
Lower LCOE
decrease 3%
and above

30
Double glass
modules life span
up to 30 years

10+%
Higher power
generation improve
10% and above

9.6%
Higher IRR
up to 9.6%

PID
No PID

AK iPower Mainstream Products

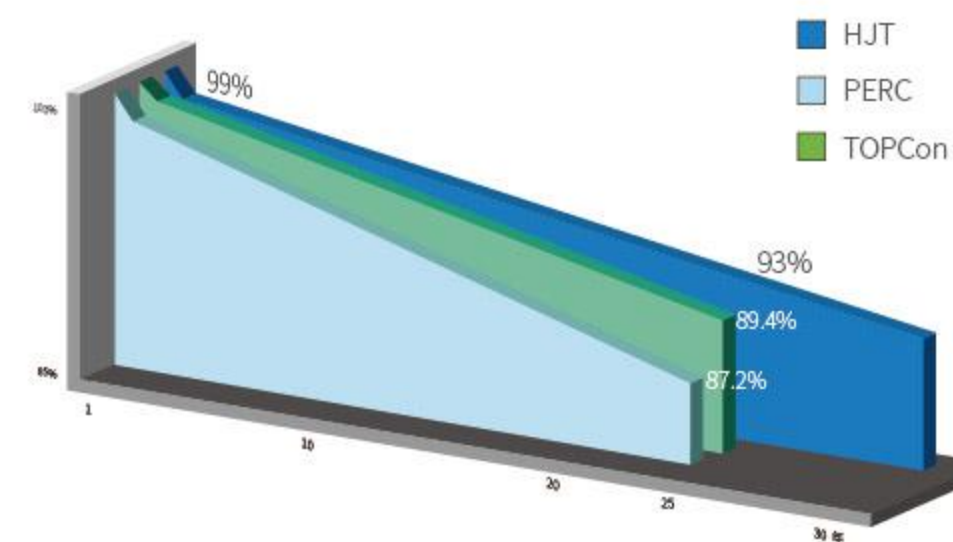
Module Type	Module Size (mm)	Weight (kg)	Power (W)
G12-60-double glass	2172×1303×33	34.9	635
G12-66-double glass	2384×1303×33	38.3	720



High-Efficiency HJT Solar Modules Core Advantages

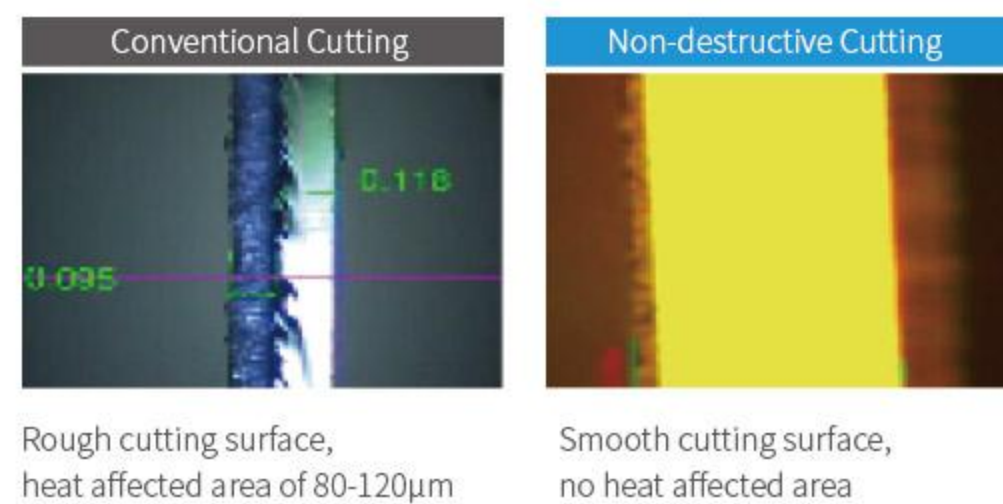
Low Degradation

First year degradation of AKCOME HJT Modules is 1%, annual degradation is -0.25%. HJT modules can guarantee power generation rate of no less than 93% in 25 years, while TopCon and PERC are 89.4% and 87.2% respectively.



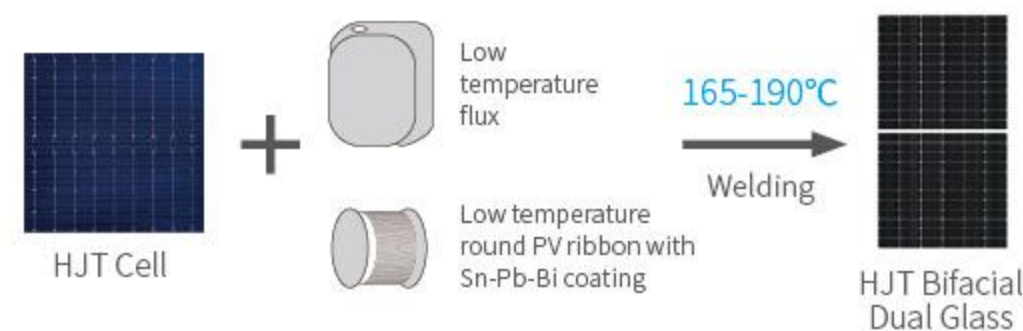
Non-destructive Cutting

AKCOME HJT Modules adopts non-destructive cutting process to ensure the smooth cutting surface of the cell, without thermal-affected area, and no loss of current. While conventional cutting surface is rough, with heat affected area of 80-120 μm .



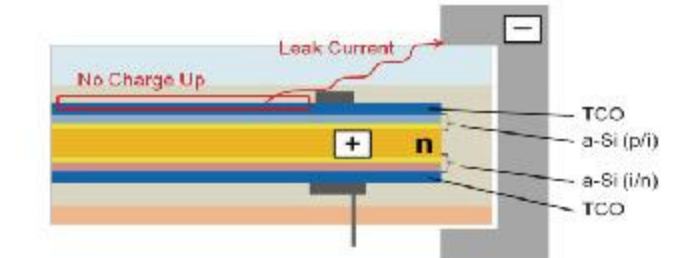
Low Temperature Welding

HJT modules adopt the production technology of low-temperature ribbon and low-temperature flux, granting reliability and performance comparable to that of PERC.



No PID

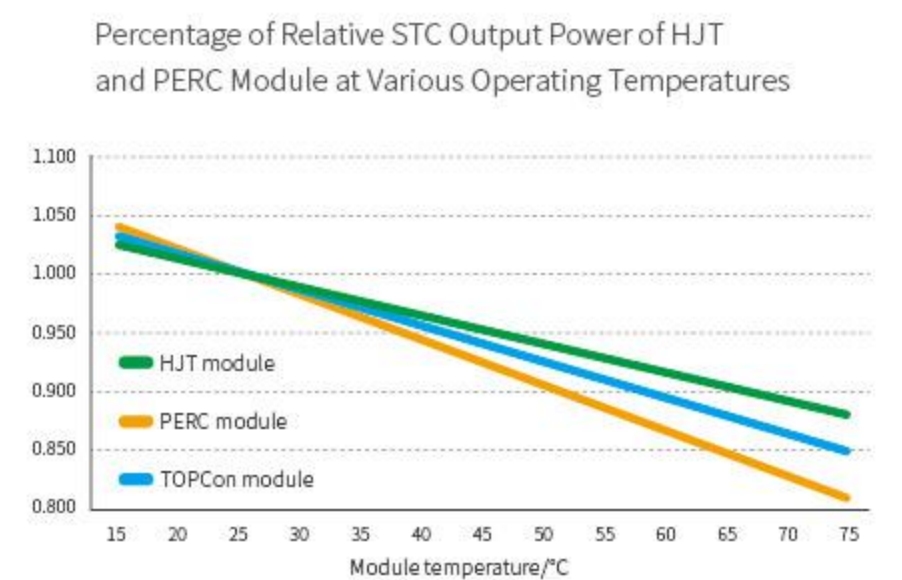
The front and back sides of AKCOME HJT modules are encapsulated by TCO conductive film. Under high voltage and bias conditions, there is no insulating layer that accumulates charges, therefore PID phenomenon is avoided.



- The front and back sides are encapsulated by TCO conductive film.
- Under high voltage and bias conditions, there is no insulating layer that accumulates charges, therefore PID phenomenon is avoided.

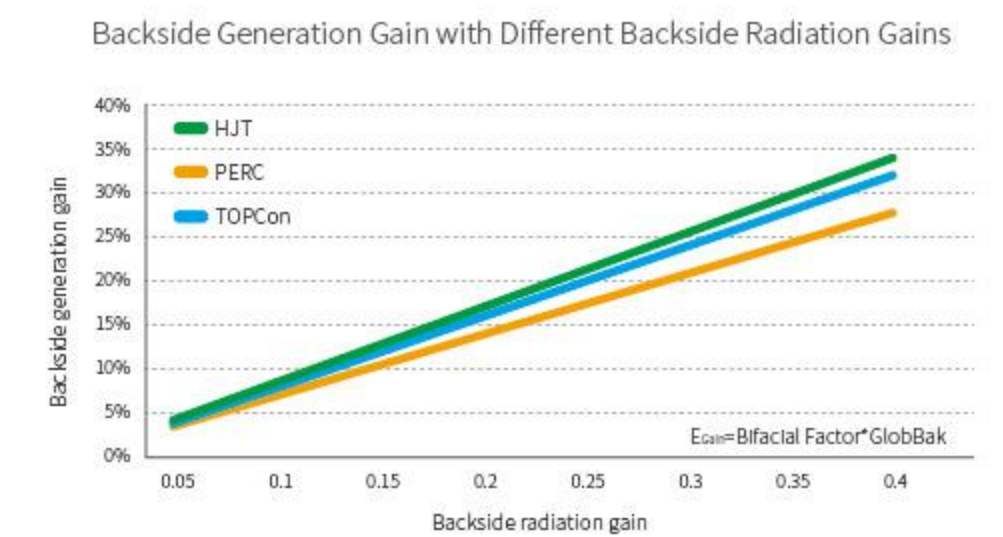
Low Temperature Coefficient

Compared with other types of solar modules, HJT modules with low temperature coefficient have less power loss and more stable power generation performance in high temperature environments.



Backside Generation Gain

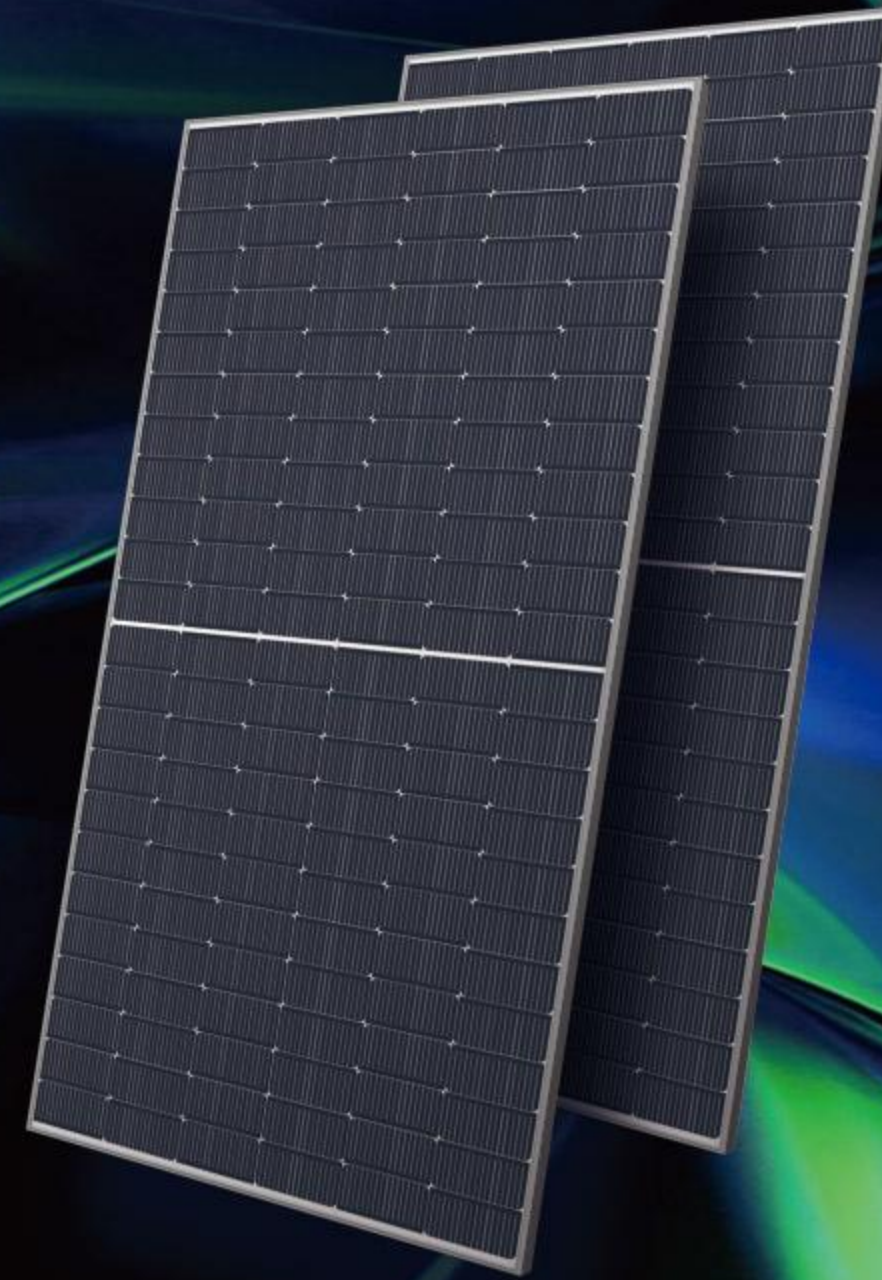
The back radiation gain depends on the reflectivity of the ground surface and the installation mode of the module, etc. The HJT module benefits from higher bifacial power generation coefficient. The larger the radiation received by the back surface, the higher the power generation gain.





Efficient TOPCon Module Pursue Intelligent And Innovative Upgrading

On the journey of photovoltaic development, AKCOME has always explored a higher level of technology with enthusiasm and faith. Based on the keen insight and deep grasp of the photovoltaic market, AKCOME introduced advanced technologies such as large-size silicon wafer, SMBB and half-cut design, to improve the efficiency and reliability of TOPCon modules and bring higher value to customers.



AK iTopper Product Seires



182mm 440W (54type)



182mm 580W (72type)



182mm 630W (78type)

22.46%

High efficiency

75%–85%

High bifacial rate

≤1%

Lower degradation,
first year ≤1%, Annual-0.4%

-0.3%/ °C

Low temperature coefficient

30

Double glass
modules life span
up to 30 years

LCOE

High power generation
gain, to reduce LCOE
effectively

7%–25%

High backside generation gain.
Double glass modules has a power
generation gain of 7%-25% on the
back side

Fire Class A

Excellent fireproofing performance,
harsh environment adaptability



AK iTopper Mainstream Products

Module Type	Module Size (mm)	Weight (kg)	Power (W)
M10-54-single glass	1722×1134×30	21.5	440
M10-54-double glass	1722×1134×30	24.5	435
M10-72-single glass	2278×1134×35	28.6	580
M10-72-double glass	2278×1134×30	32.5	575
M10-78-double glass	2465×1134×35	33.4	630

High-Efficiency TOPCon Solar Modules

Core Advantages



High Conversion Efficiency

The special passivation layer brings high efficiency advantages to TOPCon. The highest conversion efficiency of AKCOME TOPCon modules can reach 22.46%, and has great efficiency improvement potential, which can achieve higher power generation output in the whole life cycle.



Low Degradation

First year degradation of AKCOME TOPCon Modules is 1%, annual degradation is -0.4%. TOPCon modules can guarantee power generation rate of no less than 89.4% in 25 years.



Low Temperature Coefficient

AKCOME TOPCon module has a low temperature coefficient of -0.30%/°C, lower than P-type module of -0.35%/°C, with better power generation performance in high temperature environments.



High Bifacial Rate

AKCOME TOPCon double-glass module has a bifacial rate of up to 75-85% and a power generation gain of 7%-25% on the back side, which increases the power generation compared with P-type module.



Multi-Busbar Technology

AKCOME TOPCon modules adopt Multi-Busbar Technology and use thinner grid lines to achieve shorter conduction distance and less occlusion, effectively reducing power loss. With the increase of main grids, the number of welding strips and main grid line welding points increases, and the welding strength is enhanced, thus improving the reliability.



Non-Destructive Cutting

AKCOME TOPCon Modules adopts non-destructive cutting process to ensure the smooth cutting surface of the cell, without thermal-affected area, and no loss of current, which can achieve no mechanical damage, high efficiency, less pollution and other effects.



Efficient PERC Module Excellent Choice for "Dream Chaser"

Based on the requirements of the technical improvement and cost reduction of the PV industry, Akcome Optronics integrates the industrial supply chain and production advantages, focuses on the upgrading of this generation of large-size PERC cells, so as to realize the higher cost performance of half-cut and bifacial PERC modules. At the same time, it ensures your model selection with sufficient capacity.



Innovation Driven Empower Efficient

AK iChaser Product Series

AK iChaser 4.0 182mm 420W(54type)

AK iChaser 5.0 182mm 510W(66type) 560W(72type)

AK iChaser 6.0 210mm 610W(60type) 670W(66type)



21.57%
Efficiency


Nondestructive cutting technology, Effectively reduce hot spot loss

9.2%
Higher IRR
Up to 9.2%


Bifacial cell Higher internal gain rate

2.4%
Lower LCOE
Reduce 2.4%


Low attenuation, Gallium doped technology with less attenuation

1.6°C
Half-Cut design, reduce the module temperature by 1.6°C


MBB technology, Effectively reduce power loss

AK iChaser Mainstream Products

Module Type	Module Size (mm)	Weight (kg)	Power (W)
M10-54-single glass	1722x1134x30	21.5	420
M10-66-single glass	2094x1134x35	26.3	510
M10-72-single glass	2278x1134x35	28.6	560
M10-72-double glass	2278x1134x30	32.5	560
G12-60-single glass	2172x1303x35	30.9	610
G12-60-double glass	2172x1303x33	34.9	610
G12-66-single glass	2384x1303x35	33.7	670
G12-66-double glass	2384x1303x33	38.3	670

Part.D

AKCOME SERVICE

A More Considerate Service Helps Us Distribute Clean Solar Energy All over The World

Clean power helps the world run efficiently,

We are honored to participate in it and feel the variation of the world exerted by New Energy.

When one by one PV power stations ceaselessly output power to people who need it, we believe even more that the intelligence of technology will eventually be transformed into values beneficial to society.

How to let more people enjoy the vitality brought by PVs to life? Akcome Optronics began to take innovation as its mission and create new value solutions for global customers.

We are the promoters of efficient PV. We are more willing to witness with you that green energy makes the world live long and prosperous.



Intelligently Manufacture More Efficient PV Build A Cleaner Future Together

Over the 13 years of active exploration of Akcome Optronics, from intelligent manufacturing products to intelligent service, Akcome Optronics has created an outstanding performance for global customers with efficient service.

By 2022, we have been devoted to hundreds of mega optical application projects around the world, contributed more than 15GW PV projects, provided more than 19 billion kWh of clean power for approximately 5.5 million households, reduced CO₂ emission more than 18 million tons and equivalent to planting 7 billion trees on Earth.

PV project shipment 15GW	Provide clean power for approximately 5.5 million households 19+ Billion kWh	Reduce CO ₂ emission 18million tons	Equivalent to planting 7 billion trees on Earth 7billion
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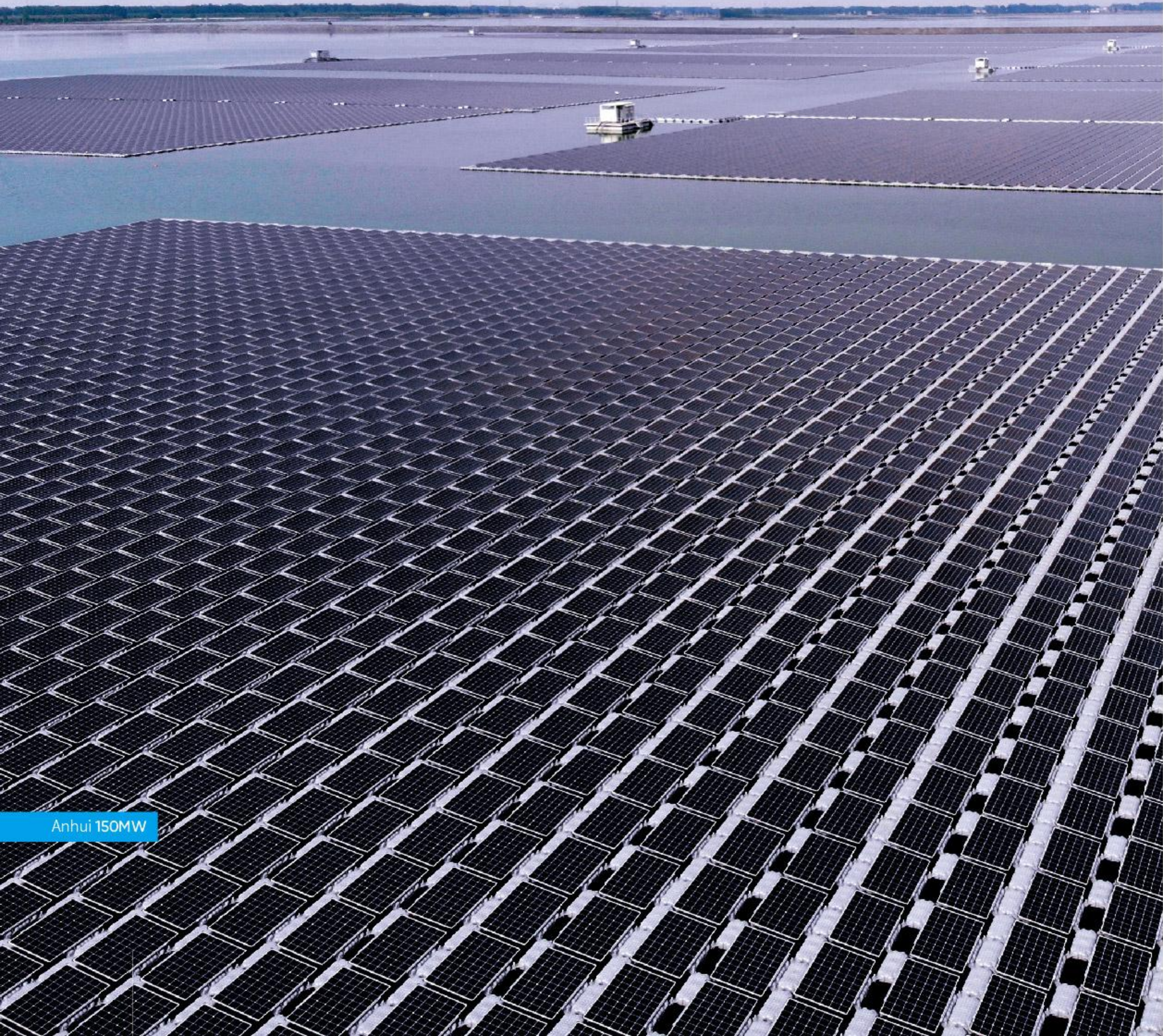
Akcome Optronics · Major Project Cases

Large scale ground power station projects [part]		Industrial and commercial power station projects [part]		Roof power station projects [part]	
Location	Project capacity	Location	Project capacity	Location	Project capacity
China	5 GW	China	800 MW	China	500 MW
Europe	500 MW	Europe	1200 MW	Europe	800 MW
Asia-Pacific	500 MW	Asia-Pacific	500 MW	Asia-Pacific	300 MW
South America	100 MW	South America	100 MW	South America	50 MW

High-quality Project Engineering Selected Cases (Large-scale Ground Power Stations)



High-quality Project Engineering Selected Cases (Aquaculture-complementary & Agriculture-complementary Power Stations)



Anhui 150MW



Netherlands 4.5MW



Ukraine 189MW



Italy 1.8MW

High-quality Project Engineering Selected Cases (Industrial and Commercial & Residential Power Stations)



AKCOME FUTURE

With A More Insightful Vision, We Validate Efficient PV to Empower A Sustainable Future

When the bright lamps in myriad families illuminate the night, we are glad to see that Solar energy is taking root in every corner of the world.

This is the epitome of social progress promoted by technology.

It also lets us know that the responsibility of a PV enterprise is far more than creating more gains.

How can enterprises, society, human beings, and nature take care of each other?

Akcome Optronics will discuss with you the solution of a low-carbon future with the determination of dedicating to deep cultivation of the PV industry.

We are efficient PV leaders and are willing to explore with you more diversified beauty in the world brought by PV intelligent manufacturing.