



SGARIA.

Trustable for life



Solar Tracking System





The Sgaria

In addition to the best products, we work objectively and efficiently, with integrity and a sense of urgency to generate the best services.

Check out some of the pillars of our company:

Customer Focus: Our customers are the reason for our existence. We are committed to meeting your demands on site and time required;

Safety: We are strict in meeting our standards, valuing the safety of our customers and contributors;

Quality Results: We seek to maximize results by valuing quality in every detail of our operation;

Teamwork: Together we achieve our goals, acting in a shared way will more easily achieve achievements and good results, sharing achievements and results.

Certificates

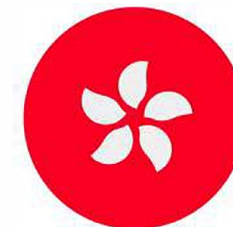
By bringing together technical force with design and experience, Sgaria has all the documentation necessary to deliver a certified quality product



Sgaria Hong Kong

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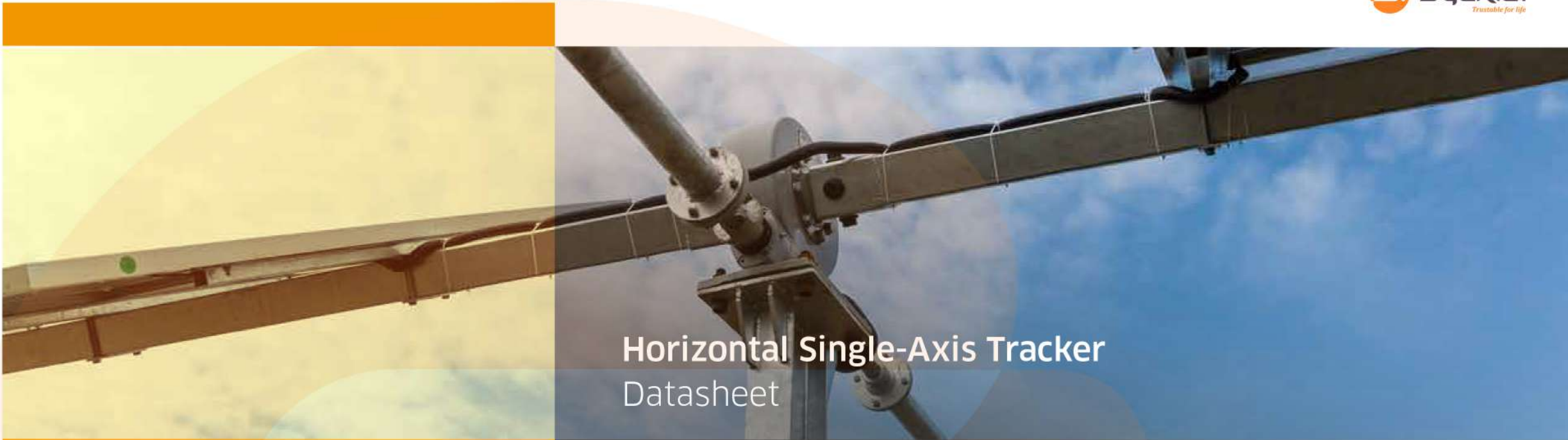
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HORIZONTAL SINGLE-AXIS TRACKER

power generation increase

10% - 25%



Horizontal Single-Axis Tracker Datasheet

High Profitability /

HSAT can improve power generation by 10~25% comparing to fixed mounting system with accurate tracking software and backtracking technology, significantly enhance profits and reduce investment cycle of power station.

Outstanding Stability /

We use the most reliable slewing driver bearing system which is easy to install with low failure rate. The secure worm drives gear guarantee superior quality. Our tracker has passed most rigorous wind tunnel test, which ensure good strength and stability.

High Flexibility /

Wide range of feasibility including ground power plant, rooftop, combination with agriculture, fishery and stocking farming. The unique universal joint structure enables 15° terrain adaptability.

Intelligent and Reliable /

Our HSAT has simple and reliable structure with compact amount of parts to install. The sealed and free of maintenance motor resists the invasion of wind and sand. The self-lubricating bearing lowers maintenance cost. Accurate tracking control system and intelligent operation modes can achieve automatic wind protection and rain cleaning.

GENERAL CHARACTERISTICS

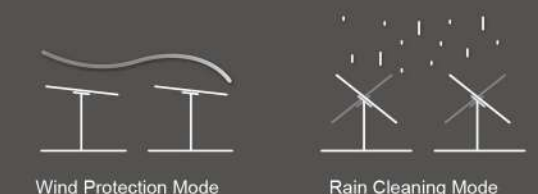
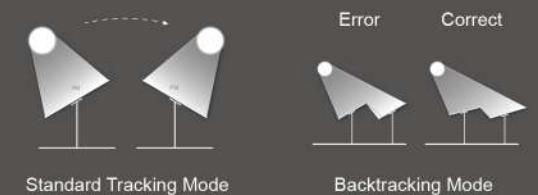
Tracking type	Horizontal Single-Axis Tracker
Module type	60/72 Poly/Mono/Double-glazed Module 255~335W
Unit capacity	269.3kW~321.6kW
Driving device	Slewing drivers
Linkage mode	Multi. slewing driver+Universal joint / push-pull rod
Structure materials	Hot-dip galvanized steel
Motor type	DC 24/48V, 500W; AC 380V, 2.2kW
Power consumption	0.5 kWh/day
Wind protection	System protective wind speed 64.8km/h
Time to stow position	<5min
Working wind speed	64.8km/h
Max wind speed	118.8km/h (GB50009-2012); (can be customized) 150km/h (ASCE 7-10)
Working Temperature	-25°C to 65°C

ELECTRONIC CONTROLLER FEATURES

Tracking range	-45°~ +45°
Control electronics	MCU
Tracking mode	Astronomical algorithm with GPS input
Tracking accuracy	< ±2°
Night-time stow	Yes
Backtracking	Yes
Position limit protection	Yes
Data transmission	RS485/Zigbee

FIVE MODES

- Standard Tracking Mode
- Backtracking Mode
- Wind Protection Mode
- Rain Cleaning Mode
- Extreme Weather Protection



TILTED SINGLE-AXIS TRACKER

power generation increase

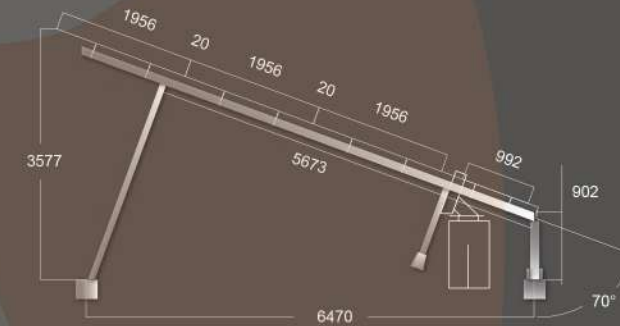
25% +



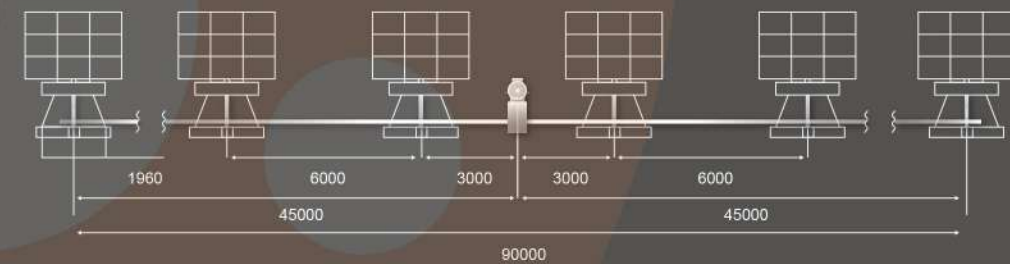
Tilted Single-Axis Tracker Datasheet

- ▶ Mechanical rod structure with low cost and high reliability
- ▶ Suitable for middle latitude, power generation increase 25%
- ▶ Astronomical and sensors close-loop tracking algorithm with high tracking accuracy
- ▶ Use polymer material bearing for moving parts, resistant to sands and no need for maintenance.
- ▶ Multiple working modes, for best application, rain, snow, gust protection etc.
- ▶ Adapt to all kinds of terrain, which is flexible and reliable.

Profile



Front



GENERAL CHARACTERISTICS		ELECTRONIC CONTROLLER FEATURES	
Type	Tilted Single-axis tracker	Tracking range	-45°~ +45°
Module type	60/72 Poly/Mono/Double-glazed	Control electronics	MCU
Modules per unit	160	Tracking mode	Astronomical algorithm with GPS input
Unit capacity	40.8kW~53.6kW	Tracking accuracy	< ±2°
Driving device	Slewing diver	Night-time stow	Yes
Tilted angle	20°	Backtracking	Yes
Max wind speed	118.8km/h	Position limit protection	Yes
Structure material	HDG Steel	Data transmission	RS485/Zigbee

DUAL-AXIS TRACKER

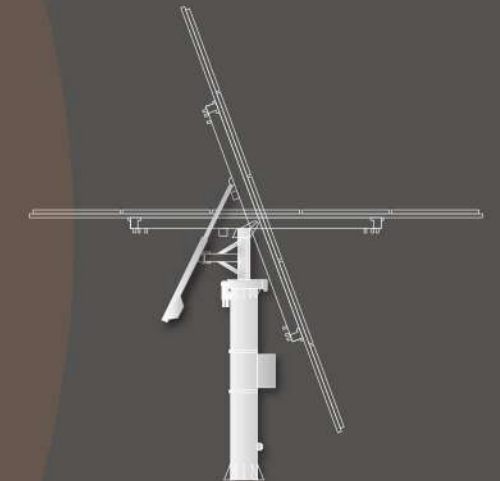
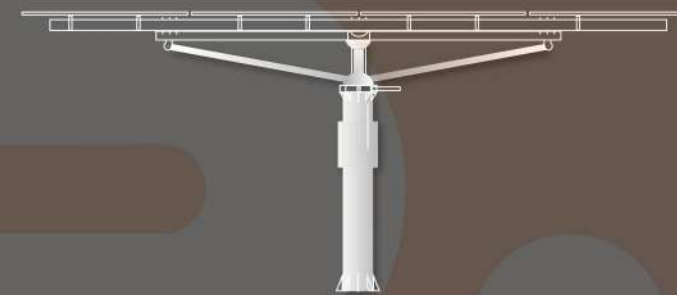


Dual-Axis Tracker Datasheet

power generation increase

35% +

- ▶ Has two degrees of freedom tracking elevating angle and azimuth, which can achieve optimized sun-light tracking.
- ▶ Suitable for high latitude area, with power generation increase at least 35%.
- ▶ Astronomical and sensors close-loop tracking algorithm
- ▶ Full-automatic operating, with no need of manual intervention
- ▶ All kinds of terrain adaption, do not need flat ground.
- ▶ Multiple working modes, for best application, rain, snow, gust protection etc.



GENERAL CHARACTERISTICS

Type	Dual-axis tracker
Module type	60/72 Poly/Mono/Double-glazed Module (255~335W)
Modules per unit	20~40
Unit capacity	5.1kW~13.4kW
N-S tracking angles	0°~70°
E-W tracking angles	-135°~+135°
Tracking accuracy	1°
Tracking logic	Active tracking
Protection function	Overload / limitation / Strong Wind/Rain/Snow
Backtracking	Yes



SEASONAL ADJUSTED RACK

Seasonal adjusted rack has different adjustable angles for different regions and different seasons, which can effectively increase the power generation.

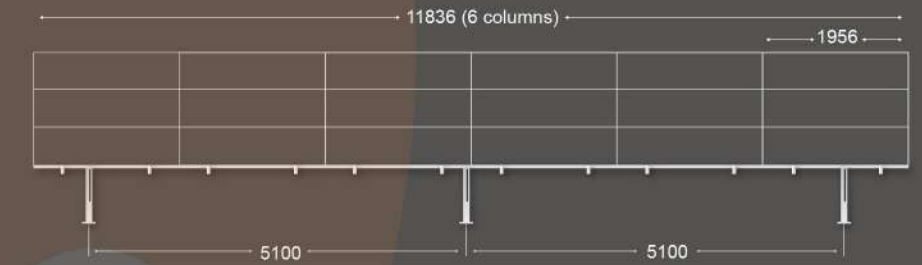
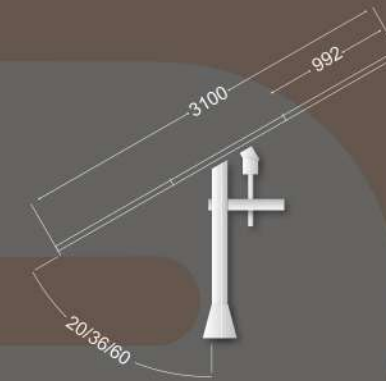
power generation increase

5%



Seasonal Adjusted Rack Datasheet

- ▶ Triangle support structure with high reliability
- ▶ Multiple-terrain suitability with 5% power generation increase
- ▶ Good compatibility for all kinds of modules
- ▶ Post/Beam/Brace assembly has industry' s lowest part count and fastest assembly
- ▶ Maintenance free adjusting structure which is easy to adjust with high efficiency
- ▶ Safe and secure position limit protection structure, preventing module damage from incorrect manual operation.



GENERAL CHARACTERISTICS

Type	Seasonal adjusted rack
Module type	60/72 Poly/Mono/Double-glazed Module (255~335W)
Modules per unit	18~21 (customizable)
Unit capacity	4.59kW~7.04kW
Adjustable angle	20°/36°/60° (customizable)
Max wind speed	118.8km/h
Anti-corruption	Hot-dip galvanization

FOUNDATION TOLERANCE

N-S tolerance	±30 mm
E-W tolerance	±30 mm
Elevation tolerance	±30 mm

FLOATING SOLAR SYSTEM

A floating solar system is solar plant built on water face like pond, lake, reservoir etc., in order to solve the huge land occupation problem of traditional ground solar system. Floating solar systems mainly consist of floating bodies, anchoring system, PV modules, combiner boxes, invertors, transformers and cables.

water cooling effect can increase power generation

10%

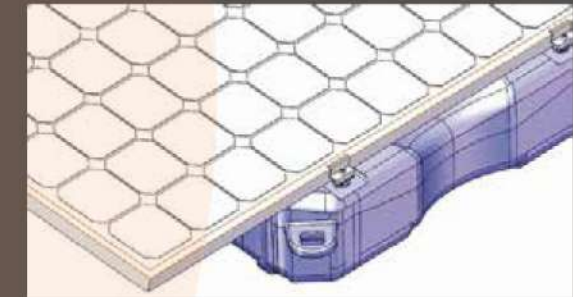


Floating Solar System Datasheet

- ▶ Built on water surface, reduce land expropriation cost.
- ▶ Do not need site formation, trenching work, foundations and save relevant costs.
- ▶ Water has function of cooling PV modules, so that can achieve more power generation about 10%.
- ▶ Floating modules can reduce water evaporation, less sunshine also helps algae restrain, to protect water source.
- ▶ Modular design, easy to install. Water area close to villages and cities, can be consumed or connected to grid conveniently.
- ▶ Ecological material made, pollution free, 100% recyclable, long longevity and no hazardous substance exudates
- ▶ Tidy and orderly array of modules on water can be a highlight spot for tourists, bring about tourism



Floating bodies are fixedly connected with plastic bolt and nut.

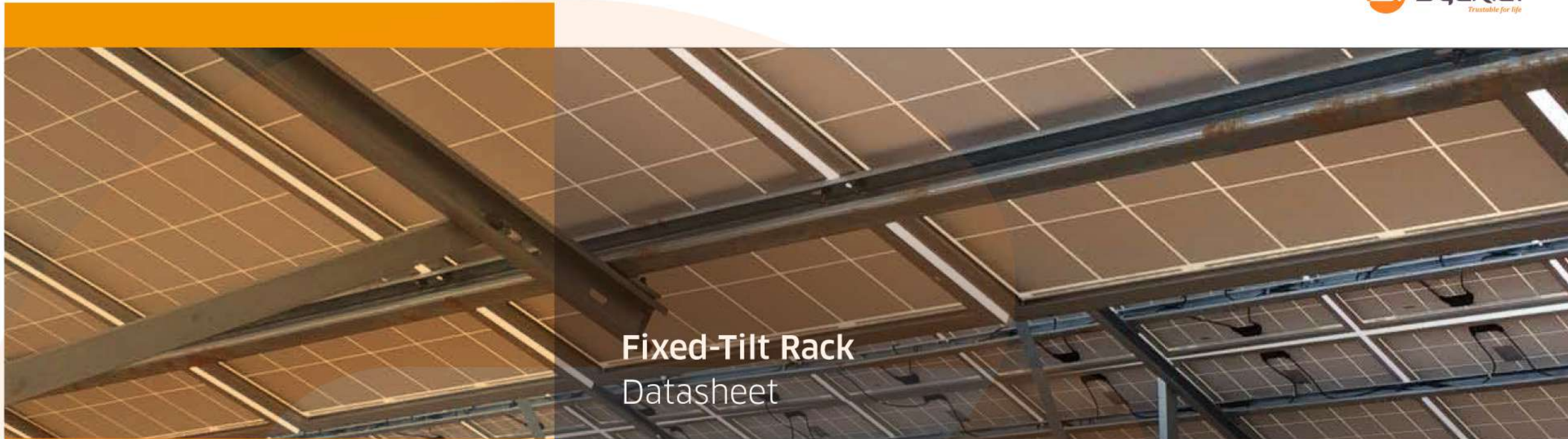


Module and main floating body are connected by a side pressing block bolt.

GENERAL CHARACTERISTICS

System type	Floating solar system	Size (floating body 2)	1000X500X200 mm
Max wind speed	118.8km/h	Buoyance	75±5kg
Water flow speed	≥1m/s	Weight	5.3±0.4kg
Water wave height	≥0.5m	Size (floating body 3)	1100X500X200 mm
Temperature	-20°C~+70°C	Buoyance	85±5kg
Size (floating body 1)	1100x1000x450 mm	Weight	5.7±0.4kg
Tilt	12°	Size (floating body 4)	1100x500x200 mm
Buoyance	160±5kg	Buoyance	85±5kg
Weight	11.3±0.4kg	Weight	6±0.4kg
		Body Thickness	3-5 mm

FIXED-TILT RACK



Fixed-Tilt Rack
Datasheet

- ▶ Fixed-tilt rack can be divided into two types according to the structure: single-pole rack and dual-pole rack.
- ▶ Grounded in durability, adaptability, and reliability.
- ▶ Optimized Mounting structures, fostering grid parity.
- ▶ Mount your investments on intelligent structures.
- ▶ Products that stand the test of time, usage, and cost.

Single-Pole Rack		Dual-Pole Rack	
Formation	Single support column post	Formation	Two support column posts
Module Layout	18*2 Portrait	Module Layout	10*2 Landscape

GENERAL CHARACTERISTICS	
Foundation	Pipe or cast-in-place pile
Structure	Q235B
Section size deviation	1%
Length deviation	1%
Bolt hole deviation	≤2mm



ROOFTOP RACK



**Rooftop Rack
Datasheet**

Color Steel Tile Roof / Flat Tile Roof / Tile Roof

- ▶ The rack is connected using clamping device, which is firm and reliable, and the roof structure is not destroyed.
- ▶ Simple structure, convenient installation.
- ▶ Lightweight structure, low roof load requirements.

Cement Flat Roof

- ▶ A variety of flexible foundation forms to meet the different roof needs.
- ▶ Does not destroy the original roof waterproof layer, enhance the application of products.
- ▶ Scientific and creative structure, greatly improve the installation efficiency.

GENERAL CHARACTERISTICS

Installation angle	0~60°
Building height	up to 20m
Anti-wind capability	<42m/s
Snow load capability	<1.2KN/m ²
Design standard	GB 50797
Lifetime	25 years



SMART MODULE CLEANER

smart module cleaner use aeronautical material and modular design, which makes it only 1/3 weight of like products. The cleaner runs along module edge, with no rail in need.

It is self-powered and can achieve high efficient water-free cleaning with 0 manpower. By use of module cleaner, it can effectively solve the cleaning problem and increase the power generation.

power generation average increase

7% -15%



Smart Module Cleaner Datasheet

Water-Free, High Efficiency /

Significantly improve solar system efficiency, increase 7-15% averagely and 35% at most. It will not affect the normal power generation, and can work in all weather.

Modular Design, Self-Cleaning /

Light weight structure, modular design and self-powered system enable great reliability and long lifetime. The self-cleaning function also increase the system efficiency.

Smart Operation, Multiple Operation Modes /

Users can customize the working mode and frequency, and achieve remote control via APP system. The cleaner can always work in high efficiency and automatically run at night.

SPECIFICATIONS	Model 1	Model 2
Size	1-3*0.5*0.14 m	3-5*0.4*0.12 m
Weight	20KG	40KG
Power	20W	30W
Duration	2h	2h
Clean distance	500m	500m
Scan distance	3000m	3000m
Infrared detect	Optional	Optional
Wireless com	Yes	Yes
APP	Yes	Yes



PV Combiner Box



PV Combiner Box Datasheet



DC Combiner Box
Wide DC input voltage range, up to 1500V

1500 v

AC Combiner Box
World-class brand AC circuit breaker, to meet the 25 year operation

25 YEARS

DC Combiner Box /

- Wide DC input voltage range, up to 1500V
- Protection level of IP65, to meet the outdoor installation
- 16 photovoltaic array inputs (can be customized)
- Suitable for crystalline silicon and thin film panels, can modify DC fuse current
- Use photovoltaic DC fuse and lightning protection module
- Take electricity from photovoltaic array directly, with low power consumption (<10W)
- Perfect anti reverse protection
- RS485 communication interface, compatible with any RS-485 communication protocol
- Real-time monitoring function of voltage, current and temperature
- Modular design, easy installation and maintenance

AC Combiner Box /

- World-class brand AC circuit breaker, to meet the 25 year operation
- Intelligent monitoring module to record current, voltage, power and switch data
- IP65 protection grade to meet outdoor requirements
- The cable inlet and outlet of the box adopts IP68 protection grade
- Strict high and low temperature test to meet the extreme environment
- Reliable lightning protection
- 4/6/8 basic input unit, input number can be customized
- Input circuit breaker, output circuit breaker, AC lightning protector, intelligent monitoring system
- Simple installation and simplified system wiring

DC Combiner Box

Model	16 inputs, 1 output
Max. PV Input Voltage	1000V DC (1500V optional)
Input No.	16 (Customizable)
Max. DC Current per Input	15A
Max. DC current	200A
Protection Class	IP65
Ambient Temperature	-35~+70°C
Ambient Humidity	0~99% (No condensation)
Communication Interface	RS485
Data Acquisition Module	Yes
Lightning Failure Indication	Yes
Installation Type	Outdoor
Cooling Mode	Self-cooling
Size (L*W*H)	750*600*200 mm

AC Combiner Box

Model	6 input, 1 output
Rated input voltage (V)	480±15%
Rated insulation voltage (V)	690
Rated frequency (Hz)	50
Output current range (A)	0~400
Input current per Input (A)	≤63A
Max. discharge current of lightning arrester	40KA
Ambient Temperature	-25~+60°C
Ambient Humidity	0~95%
Over current protection	Yes
Short circuit protection	Yes
Internal overheat protection	Yes
Installation Type	Wall Hanging Installation
Protection Class	IP65
Input Numbers	6 (Customizable)
Size (L*W*H)	800*750*200 mm



Technology Center

We constantly reduce the cost of photovoltaic power generation with science and technology innovation

- ▶ PRODUCTION CAPACITY
- ▶ R&D CAPABILITIES
- ▶ QUALITY CONTROL



Technology Center



▶ PRODUCTION CAPACITY

▶ R&D CAPABILITIES

▶ QUALITY CONTROL

manufacturing area -

80000M²

annual production capacity -

2GW

PRODUCTION CAPACITY

Has two manufacturing bases-Yixing and Maanshan, more than 18 Acres manufacture area, our production capacity of tracking system exceeds 2GW. With entire production line including Steel Fabrication, Surface treatment, Electric control equipment, Floating body molding etc., we can meet any requirements of high quality. Besides, through professional management and perfect quality system, our products are under all-around guarantee.

R&D CAPABILITIES

R&D Team, company has a high-qualified technology and scientist team, with more than 41% postgraduates including PhD, and researchers as well as 10 more professional technical engineers. We are capable to offer complete and reliable solutions based on customers' requirement with services of solar tracking system design, shadow analysis, energy management, photovoltaic power plant development, system integration, construction and installation etc. while we also have a very experienced Management Team With average age 37 and 16 years power plant working experience throughout the world.

QUALITY CONTROL

Our quality management system meets all requirements of ISO9001, ensure every step of manufacturing is under very fine control. Our products have passed CQC (CHINA QUALITY CERTIFICATION CENTRE) Certificate and ETL (Intertek Testing Services) Certificate. Also, we have a strict criterion to audit our raw materials supplier, thereby we can master quality from upstream.

provides one-stop-service for our customers and quality warrant & insurance worldwide, all-round guaranteeing quality and customer benefits.

Service Center



▶ **ENGINEERING SERVICE**

▶ **INTELLIGENT OPERATION & MAINTENANCE**

▶ **AFTER-SALES SERVICE**

ENGINEERING SERVICE

provides one-on-one customized service for each project, including solar project design, technical support, on-site engineering instruction, operation and maintenance service etc.,

We have a very experienced management team with average age 37 and 16 years power plant working experience throughout the world. Our management team can analyze different project with respect of timing, quality, costing, by considering each dimensions we will effectively work out the best project solution.

INTELLIGENT OPERATION & MAINTENANCE

As best smart solar equipment & service provider, is willing to offer intelligent solutions during any stage of solar power plant development. Since ground power plants are usually located at remote area, hard to access to manpower response on time when anything abnormal happens. Meanwhile, dust is a common issue for most solar power plants, especially for inland ground ones, PV modules are easily got dust/soil coverage, which leads to huge power loss.

smart operating & maintenance system will solve these problems. Our SCADA will help monitor power plant 24 hours 7 days, detecting any problems and feedback in time to center control room. Furthermore, SCADA can realize preventive alarms of any possible issue detected and give remote control. In addition, our smart module cleaner can improve power generation by automatically sweep modules regularly to get rid of stubborn dusts/soils.

AFTER-SALES SERVICE

Customer' smile and satisfaction are always our desire and driving force of our company. Therefore, we provide perfect after-sale service for each of our client. To whatever problem happens, we will respond within 24 hours, give solutions or have our engineer sent to site, help rule out system failure and save downtime loss. Besides, also have option of 5 million CYN product liability insurance, from finance prospective help clients settle down.



To create a better life in the future starting from the solar energy



The solutions

- ▶ THE GROUND STATION SOLUTIONS AND APPLICATION
- ▶ DISTRIBUTED SYSTEM SOLUTIONS AND APPLICATION
- ▶ WATER FLOATING SOLUTIONS AND APPLICATION



To create a better life in the future
starting from the solar energy

The Solutions

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THE GROUND STATION SOLUTIONS AND APPLICATION

As an industry leading intelligent solar equipment provider, accumulated a wealth of experience in product manufacturing and project engineering. We establish a series of excellent solutions around the ground photovoltaic power station, from project design, installation, to operation & maintenance. Through our technological innovation, we make operation of ground station simpler, more convenient, and more efficient.

Reliable Tracking System

As our core products, tracking systems are installed all over the country. By the end of 2016, our cumulative solar tracker installation volume reaches over 500MW, which represents China's top tracker provider in terms of 2016 installation & projects execution. We use the most reliable slewing driver bearing system which is easy to install with low failure rate. Our multiple slewing driver structure makes the tracking system safer and more reliable. The unique universal joint structure enables 15 ° terrain adaptability. Our tracker has passed most rigorous wind tunnel test, which ensure good strength and stability. We hope to use our advantageous products and services to increase the power generation and efficiency, lower the LCOE and create more value for customers.

Smart Module Cleaner

Dust is considered as "the No.1 killer" of solar station. Common clean methods rely on manpower and water, resulting in high cost and low efficiency. We see the problem and bring the smart module cleaner to solve it effectively and efficiently. With no rail design of our smart module cleaner, there is no need to modify the modules. Our cleaner runs along the module edge, and has only 1/3 weight of like products. Our cleaner uses water-free cleaning, with customizable working mode and frequency. By use of the cleaner, it can achieve intelligent operation with zero manpower, which significantly increase the O&M efficiency.

Competitive Mounting System

Besides tracking systems, we can also meet the requirements of ground solar station with fixed mounting systems. Thanks to our high standard technology and manufacturing capability, we can provide competitive solar mounting system, including seasonal adjustable rack and fixed-tilt rack. With 2 manufacturing bases and over 2GW annual production capacity, we have entire production line including steel fabrication and surface treatment, which can ensure high quality and cost-effective price. Our full product line solar mounting systems can meet different requirements and give customers the best solution.



Shouguang Yang kou - 2MW



Shanxi Yulin - 6MW



Qinhai Xining - 1MW



Jiangsu Funing - 30MW



Hainan Dongfang - 2MW



Nanjing Pukou - 14.2MW



Qinghai Delingha - 21.5MW



Hubei Jiangling - 48.2MW



Shenmu Pingxi - 37.6MW



Shenmu Ping Yuan - 21MW



Hebei Shangyi - 21.5MW



Henan Ruzhou - 21MW

Cumulative Tracker Installation

500MW

China's No.1 tracker provider in terms of 2016 installation & project execution

The Solutions

▶ THE GROUND STATION SOLUTIONS AND APPLICATION

▶ DISTRIBUTED SYSTEM SOLUTIONS AND APPLICATION

▶ WATER FLOATING SOLUTIONS AND APPLICATION

DISTRIBUTED SYSTEM SOLUTIONS AND APPLICATION

JU-SMART provide customizable solution for each distributed system from the customer's point of view. Relying on rich solar project construction experience and high quality solar equipment, we can offer one-stop solutions from residential rooftop systems to industrial & commercial projects. We customize the system design from the early product selection to the late operation and maintenance, to meet different customer requirements with turn-key EPC service. We make integrated analysis for the power consumption condition, installation site, local weather, geographical features, architecture style, installation forms, engineering support, and return of investment, to provide the best options.



Project Consultation

We make deep communication with customer, understand project requirements, and provide solution from project location to applicable technology.



Financing Consultation

We establish a wide range of in-depth trust and cooperation with large financial institutions, which can provide customers with a full range of global, full process financing services.



System Design

We help the customers to complete the system design, equipment selection, and system equipment configuration according to customer needs and project characteristics.



Business Management

Provide the project budgeting, with most competitive price, according to the project design and equipment list. Complete the business contract on behalf of customers.



Engineering implementation

Assist customers to complete project permits required for the project. Transfer the system in form of "turn key" with strict testing and inspection after completion of the construction.



Detailed Design

Complete detailed technical proposal and construction drawings.



Operation Management

Provide management services for the whole operation period after the system has been put into operation, including documents management, operation monitoring and testing, and the necessary maintenance and repair services.



Wuxi Jingxicun Rooftop Project
1MW



Chifeng Hospital Rooftop Project
204.5KW



Distributed System Solutions

Tailor-Made



The Solutions

▶ THE GROUND STATION SOLUTIONS AND APPLICATION

▶ DISTRIBUTED SYSTEM SOLUTIONS AND APPLICATION

▶ WATER FLOATING SOLUTIONS AND APPLICATION

WATER FLOATING SOLUTIONS AND APPLICATION

As an innovative form of solar station, water floating system is now attracting more and more market focus. SGARIA has made the strategic planning in advance, and can provide a whole package of mature and reliable water floating solution from product to service, from installation to maintenance, to help customers make use of the new form of solar system better.

Floating Island System

Floating island system consists of main floating body, auxiliary floating body, plastic fasteners and module connecting accessories. Main floating body is used for supporting solar modules. The modules are firmly connected to main floating bodies with connecting accessories. Auxiliary floating body is used for the connection between the main floating bodies, which keeps the distance between the rows of the solar panels to prevent the shadow, and can also be used as a maintenance channel. The main and auxiliary floating bodies are connected together by a plastic fastener. All floating bodies are made of environmental protection materials, and has no influence on environment and does not pollute water resources.

Anchoring System

The anchoring system is used to firmly fix the floating island in the water, which can make the floating system move with the water level fluctuates, and also level in a certain range of movement without any collision, especially not sink in encountered strong winds, also not hit the shore.



▲ Xiexin, 15KW



▲ Jiangsu Peixian, 1MW



▲ Suzhou Tongli, 50KW

Water Floating Solutions

**New Type
Solar Station**



/IND.SGARIA

