



PHOTOVOLTAIC POWER STATION METEOROLOGICAL STATION



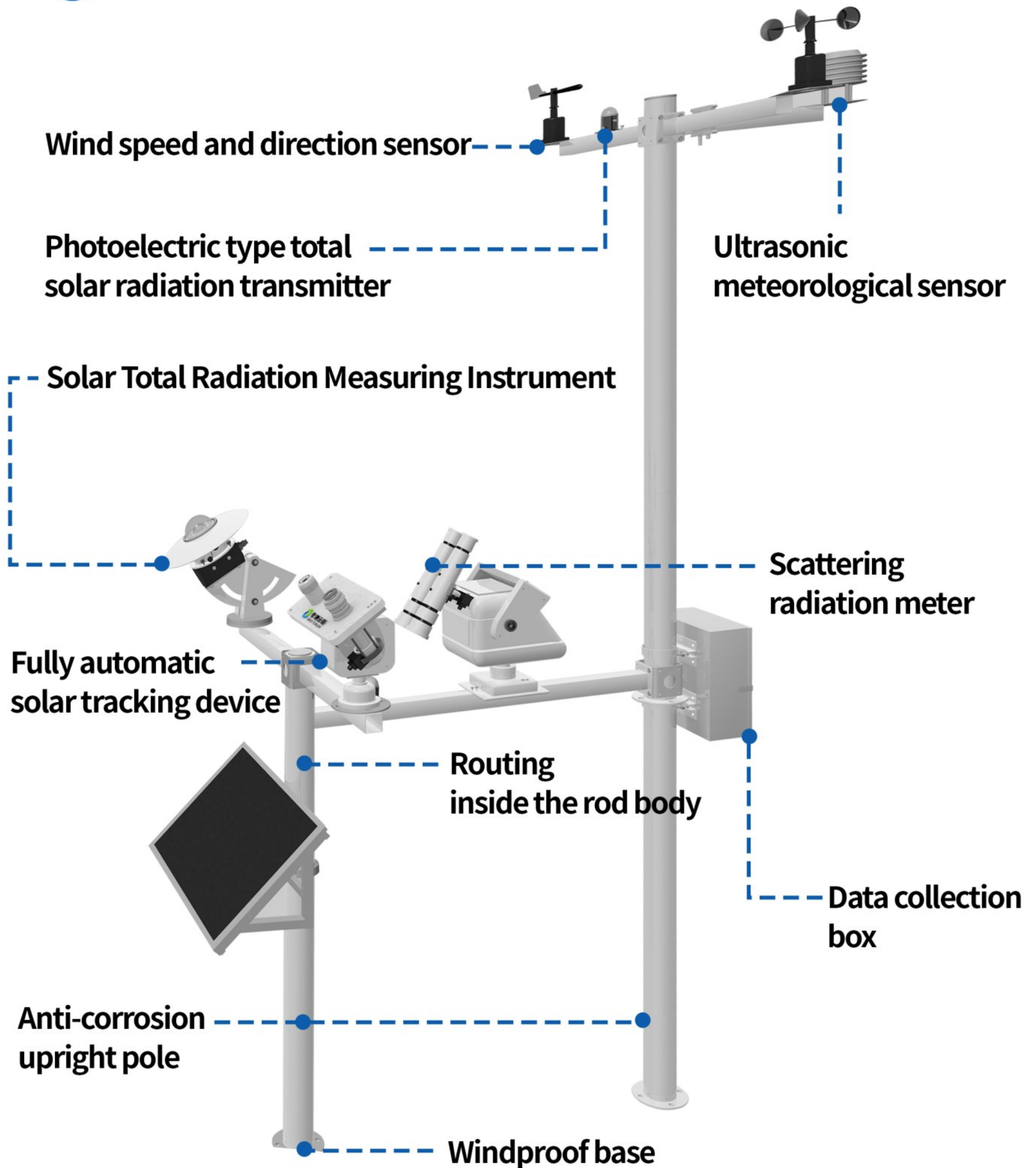
Product Introduction

The Photovoltaic Meteorological Station is a multi-element monitoring device specifically designed for photovoltaic scenarios, integrating sensors for solar radiation, temperature and humidity, wind speed and direction, etc.

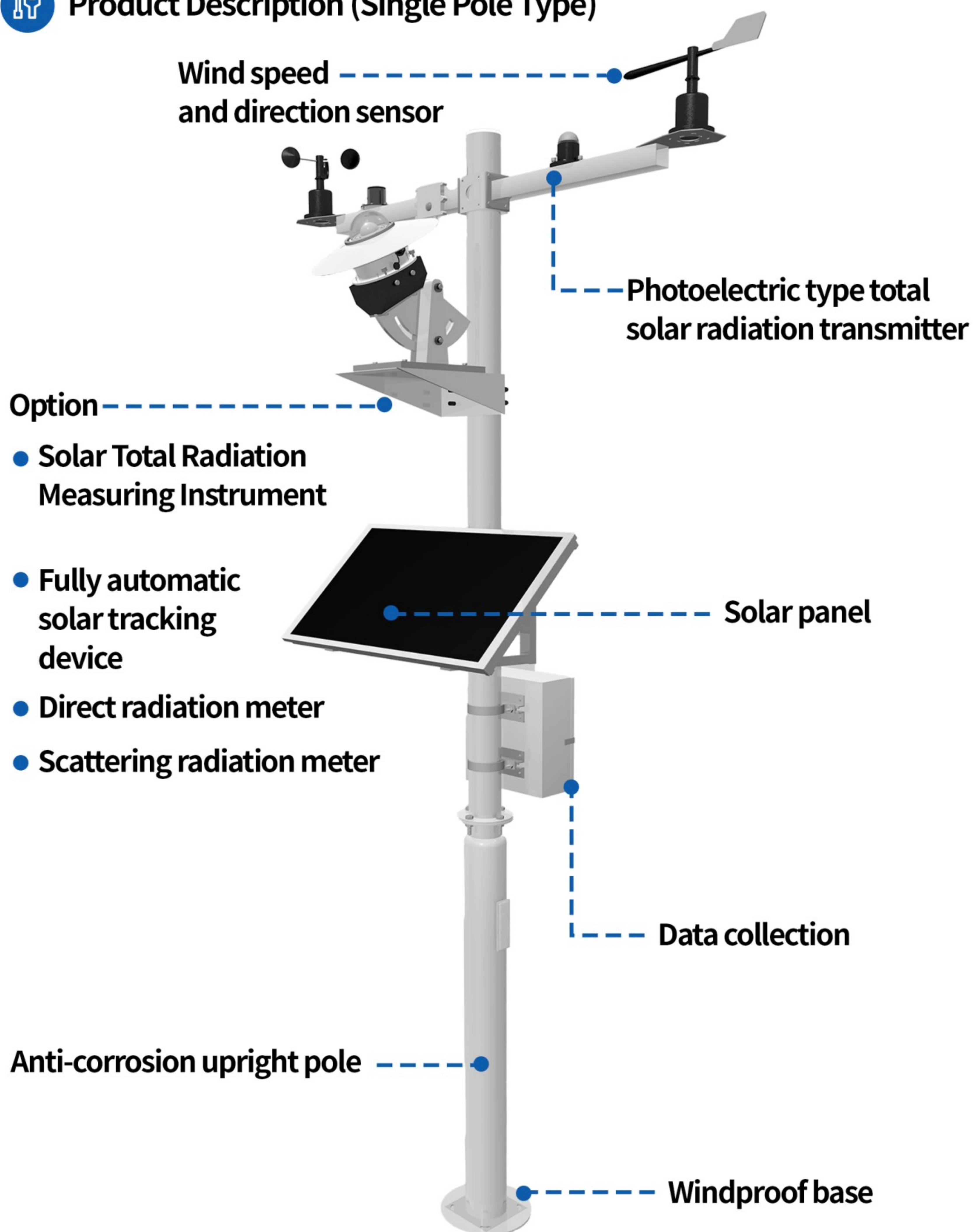
The equipment is installed in a modular manner, suitable for outdoor conditions of photovoltaic power stations. Data is connected to the photovoltaic control system through a stable transmission protocol, enabling real-time monitoring of meteorological factors that affect the efficiency of photovoltaic power generation. This provides precise data support for power prediction and operation scheduling of the power station.



Product Description (Double-rod Type)



Product Description (Single Pole Type)





Photoelectric type total solar radiation transmitter



Measurement Range: 0 – 2000 W/m², covering the typical range of total solar radiation under natural environmental conditions.

Working Principle: Based on photoelectric conversion technology.

Photovoltaic sensors convert solar radiation energy into electrical signals, which are then calibrated and converted into radiation intensity values.

Resolution: 1 W/m², enabling the detection of subtle variations in radiation intensity for refined monitoring.

Accuracy: ±3% (full scale), ensuring that measurement errors fall within acceptable limits and meet the requirements of scientific research and engineering applications.



Solar Total Radiation Measuring Instrument



Measurement Range: 0 ~ 2000 W/m², covering the conventional intensity range of total solar radiation over land areas and suitable for multi-scenario monitoring applications.

Resolution: 1 W/m², capable of identifying subtle changes in radiation intensity to ensure refined data collection.

Accuracy: ±2% (full scale), with measurement errors lower than those of similar devices, meeting the requirements for research-grade monitoring.



Automatic Solar Tracker



Measurement Range: Horizontal 0°~360°, vertical 0°~90°, covering the full daily trajectory of the sun and suitable for use in regions at different latitudes.

Working Principle: Photoelectric detection and GPS positioning. Adopting a dual positioning mode, it enables accurate sun tracking even on cloudy days or under complex lighting conditions.

Resolution: 0.1°, featuring high angle adjustment accuracy to ensure the stability of radiation monitoring data.

Accuracy: ±0.2°, with tracking accuracy meeting the requirements of both scientific research and engineering-level monitoring applications.

Diffuse Radiation Table



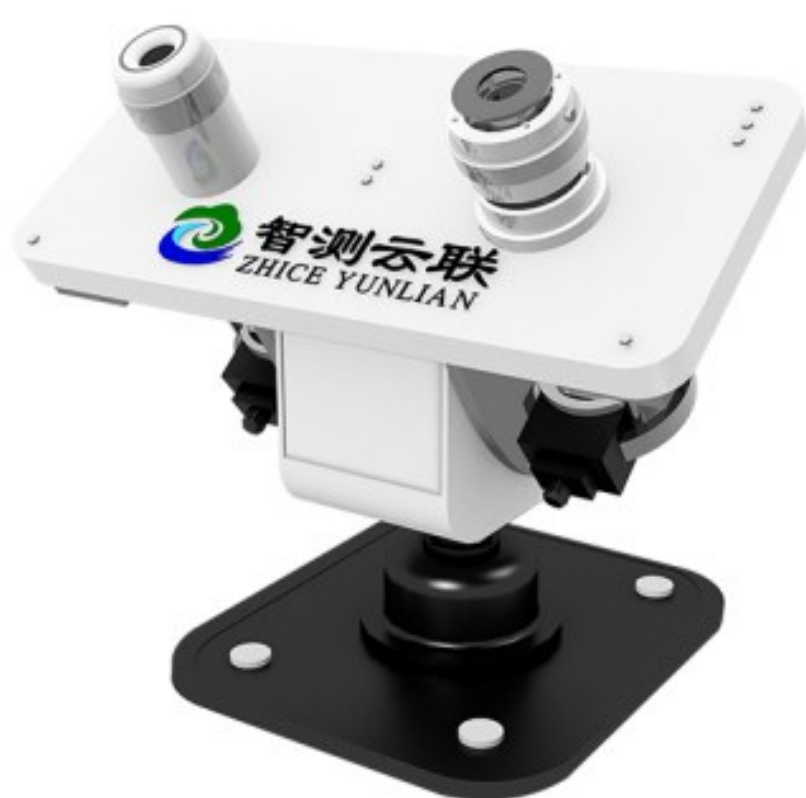
Measurement Range: 0 ~ 2000 W/m², covering the diffuse radiation intensity range in most natural environmental scenarios.

Resolution: 1 W/m², capable of accurately capturing subtle fluctuations in diffuse radiation intensity to meet the requirements of refined observation.

Accuracy: ±2% to ±5% (full scale). Accuracy varies by model, adapting to different needs of scientific research and routine monitoring.

Designed to measure diffuse solar radiation (the portion of sunlight scattered by the atmosphere, clouds, and aerosols, reaching the ground from all directions, excluding direct sunlight).

Direct Radiation Pyranometer



Measurement Range: 0 ~ 2000 W/m²

Resolution: 1 W/m², capable of identifying subtle changes in low-level radiation intensity to meet the demand for refined observation.

Accuracy: ±1% ~ ±2% (full scale), with measurement error lower than that of similar equipment, satisfying the requirements of scientific research and refined monitoring.

The direct radiation pyranometer is a precision instrument specifically designed to measure the intensity of direct solar radiation perpendicular to the sun's direction. It is usually equipped with an automatic tracking device and can be connected to a sunshine recorder to measure sunshine duration.

Distributed Ambient Light Monitoring



Measurement Range: 0 ~ 200000 Lux, covering most environmental scenarios from low light to strong light.

Key Features: Equipped with photosensitive elements such as silicon photo-cells or photodiodes, featuring temperature compensation and cosine correction to ensure accurate light intensity measurement under various incident angles and temperature conditions.

Resolution: 1 Lux, capable of accurately capturing subtle fluctuations in ambient light.

Accuracy: ±2% ~ ±5%, suitable for high-precision application scenarios such as scientific research and photovoltaic performance evaluation.



Introduction to the upper computer software

Function Category	Specific Description
Core Functions	Realize integrated management of data reception, storage, viewing and analysis in the PC standalone environment
Data Reception and Processing	1. Support data reception via serial port, as well as data processing and visual display 2. Compatible with communication methods such as JSON string and MODBUS485
Parameter Configuration	1. Allow independent setting of data storage time 2. Support custom collection time in MODBUS485 collection mode
Monitoring Parameter Management	Support users to independently add, delete and modify monitoring parameters, including information such as parameter protocols, names and icons
Data Processing Expansion	1. Equipped with data post-processing function 2. Support external running of JAVASCRIPT scripts



Introduction to Cloud Platform

Function Category	Specific Description
Architecture & Access Method	Adopts a CS architecture software platform, supporting direct access and observation via mobile phones and PC browsers without additional software installation
Account & Device Management	Supports multi-account and multi-device login, meeting the collaborative management needs of multiple users and terminals
Data Display Function	1. Provides dashboards for real-time data display and historical data display 2. Supports data curve analysis 3. Supports map display and device information viewing
Data Storage & Stability	Implements cloud data storage based on cloud servers, featuring stability, reliability, easy scalability and load balancing
Alarm & Threshold Management	Supports SMS alarm function, allowing custom alarm threshold settings to respond to abnormal data in a timely manner
Data Processing & Output	1. Supports data export in table format 2. Has data post-processing function 3. Supports external running of JAVASCRIPT scripts to enhance customization capabilities
Data Forwarding Function	Supports data forwarding via multiple protocols, including HJ-212 protocol, TCP forwarding, HTTP protocol, etc.

