



VISIBILITY WEATHER PHENOMENON INSTRUMENT



Introduction

The visibility weather phenomenon instrument developed by Zhice Yunlian is an automatic continuous sensor for monitoring visibility, precipitation and visual obstruction weather types. Based on the forward scattering principle, it actively emits infrared beams to measure light scattering caused by atmospheric particles and precipitation droplets in the sampling area.

A built-in temperature and humidity sensor collects ambient temperature and humidity data. After internal algorithm processing, the unit calculates and outputs visibility, visual obstruction classification and precipitation weather type.

Features

This visibility weather phenomenon instrument adopts a highly integrated all-in-one design, featuring compact size, low power consumption, simple installation and maintenance. It delivers stable, reliable performance with strong environmental adaptability, abundant data output and high cost performance.





Description

● --- Ultrasonic Meteorological Sensor

Road Surface Condition Sensor

● --- Visibility Meter

Monitored items:
Atmospheric visibility,
covering fog,
haze,
dust storms, etc.

Rain & Fog Disdrometer ●

● --- Electrical Control Box

● --- Waterproof Internal Pole Wiring

Steel Pole --- ●

● --- Wind-resistant Base





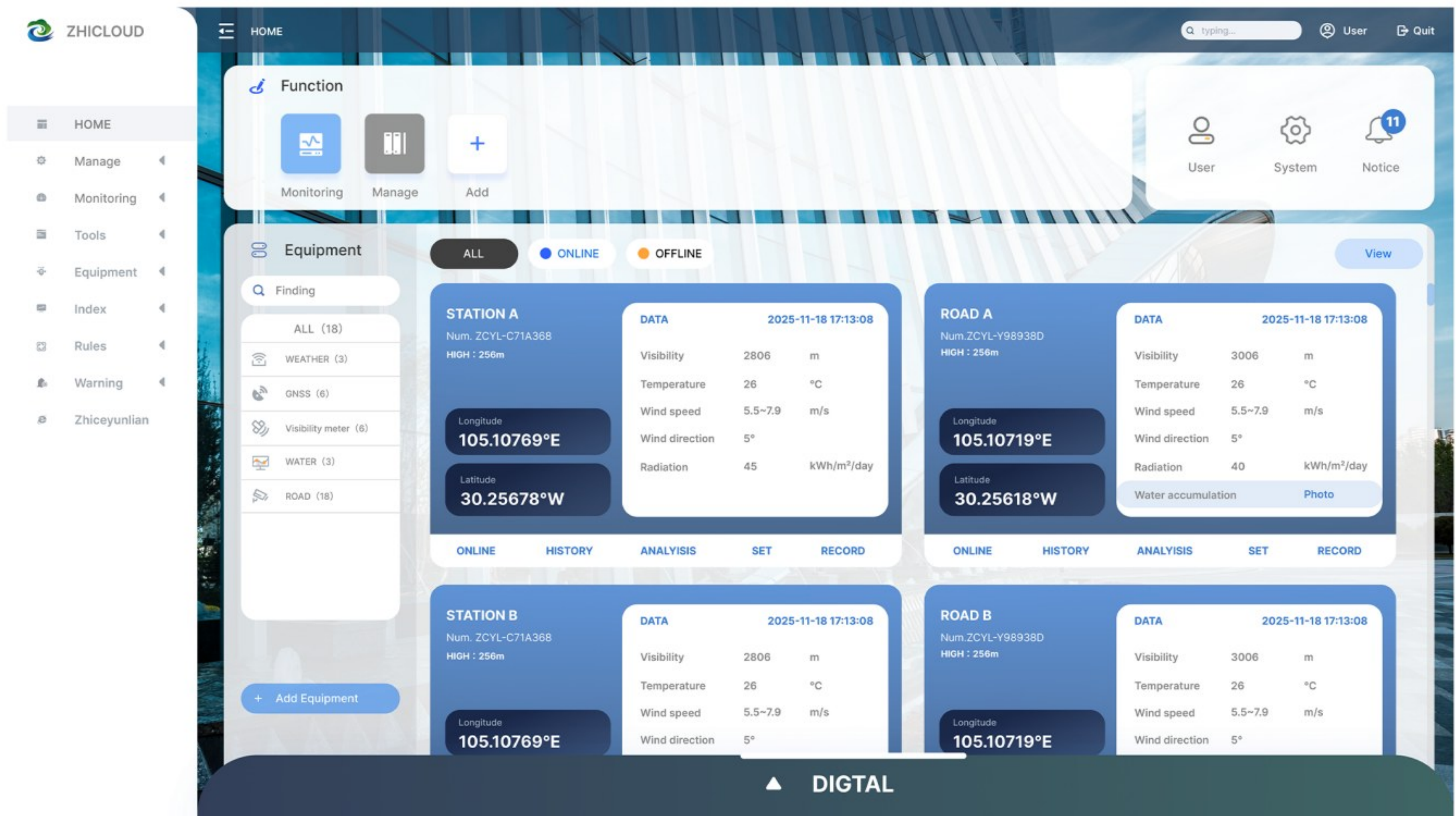
 Specifications

Category	Item	Parameter Description
Physical Specifications	Dimension (L×W×H)	(735±10) mm × (350±10) mm × (95±10) mm
	Weight	≤3kg
Measurement Performance	Measuring Range	10–30000m (expandable to 50000m)
	Measurement Accuracy	±10% (≤10000m) ; ±15% (>10000m)
	Data Output Interval	60s (default); adjustable in multiples of 10s from 10–120s
Electrical Performance	Power Supply	DC 10–24V
	Power Consumption	≤3.5W @12V
	Communication Interface	RS232 / RS485
Environmental Adaptability	Operating Temperature	-45~55°C
	Operating Humidity	0~100%RH
	Storage Temperature	-50~60°C
	Storage Humidity	0~100%RH
	Protection Grade	IP66, IP67 optional

 Terms & Definitions

Category	Specific Description	Core Value & Significance
Physical Size & Weight	Determines the equipment's adaptability to installation space, such as embedding into narrow monitoring points and compatibility with different brackets and cabinets.	Ensures flexible deployment in various confined spaces, enhancing installation convenience and scenario adaptability.
Measurement Performance	Measuring range: Covers visibility demands of diverse scenarios (10m for dense fog, 50,000m for open areas); Data output interval: Matches different monitoring needs (high-frequency output for real-time early warning, low-frequency output for long-term statistics).	Balances short-range precision with ultra-long-range monitoring, flexibly adapting to both real-time alerting and long-term trend analysis.
Electrical Performance & Scenario Adaptability	Wide voltage range (DC10~24V): Adapts to various power supply environments such as vehicle power and outdoor solar power; Low power consumption: Reduces long-term operating costs, ideal for field sites without external power; Multi communication interfaces (RS232/RS485): Enables convenient connection with different central control systems and data acquisition devices, improving system compatibility.	Enhances power supply flexibility, reduces deployment costs in remote areas, and simplifies system integration with existing facilities.
Environmental Adaptability	Guarantees stable operation under extreme environments (extreme cold, extreme heat, high humidity), suitable for multi-region and multi-climate scenarios; High protection grade (IP66/IP67): Resists sand, dust, and rain erosion, extends service life of outdoor equipment, and cuts maintenance costs.	





ZhiCloud Cloud Platform

Centrally manages all types of monitoring equipment . It displays real-time data and location information of all IoT devices on site. It also supports equipment status monitoring, historical data query, curve analysis and other functions, helping users remotely grasp environmental and equipment conditions of all monitoring points.



Visibility Data Receiving & Management Software

Left panel core data: Real-time readings of 1-minute visibility, 10-minute visibility, plus automatically identified weather phenomena (example shown: Fog).

Right panel data curve: Intuitively displays the variation trend of 1-minute / 10-minute visibility (upward curve represents rising visibility).