

Ultrasonic Integrated Weather Station

Model: SUNBA WS-U800

Integrated environmental monitoring specifications and measurement performance.



Technical Specifications

DC Power Supply (Default)		10-30 VDC
Maximum Power Consumption	RS485 Output	1.2 W
Element Operating Temperature	Wind Speed and Wind Direction	-40-80°C
	Temperature and Humidity	-40-80°C
	Atmospheric Pressure	-40-80°C
	Illuminance	-40-80°C
	Total Solar Radiation	-40-80°C
Accuracy	Wind Speed ²	±0.5 + 2% FS (0-30 m/s, 60% RH, 25°C)
	Wind Direction	±3° (60% RH, 25°C)
	Humidity	±3% RH (60% RH, 25°C)
	Temperature	±0.5°C (25°C)
	Atmospheric Pressure	±0.15 kPa @ 25°C, 101 kPa
	Illuminance	±7% (25°C)
	Total Solar Radiation	≤ ±3% @ 150 W/m ²
Measuring Range	Wind Speed	0-40 m/s, starting wind speed: 0.5 m/s
	Wind Direction	0-359°
	Humidity	0% RH-99% RH
	Temperature	-40°C-+80°C
	Atmospheric Pressure	0-120 kPa
	Illuminance	0-200,000 lux
	Total Solar Radiation	0-1800 W/m ²

Long-Term Stability	Temperature	$\leq 0.1^{\circ}\text{C/y}$
	Humidity	$\leq 1\%/y$
	Atmospheric Pressure	-0.1 kPa/y
	Illuminance	$\leq 5\%/y$
	Total Solar Radiation	$\leq \pm 3\%$
Response Time¹	Wind Speed	1 s
	Wind Direction	1 s
	Temperature	$\leq 25 \text{ s (1 m/s Wind Speed}^2\text{)}$
	Humidity	$\leq 8 \text{ s (1 m/s Wind Speed}^2\text{)}$
	Atmospheric Pressure	$\leq 2 \text{ s}$
	Illuminance	$\leq 2 \text{ s}$
	Total Solar Radiation	$\leq 10 \text{ s}$
Optical Rainfall Parameters	Typical Accuracy	$\pm 5\%$ (Renke Laboratory Data)
	Resolution	Standard 0.1 mm
	Maximum Instantaneous Rainfall	24 mm/min
	Rain-Sensing Diameter	6 cm
Optical and Pulse Rainfall Parameters³	Typical Accuracy	$\pm 4\%$ (Renke Laboratory Data)
	Resolution	Standard 0.1 mm
	Measuring Range	$\leq 4 \text{ mm/min}$
Ingress Protection Rating		IP54
Output Signal		RS485 (Standard Modbus Communication Protocol)

Notes

1. Response time is the τ_{63} time.
2. Wind speed refers to the airflow at the sensitive material inside the sensor. When the test-environment wind speed is 10^{-2} m/ms and the airflow direction is perpendicular to the sensor inlet, the airflow at the internal sensitive material is approximately 1 m/s.
3. Based on indoor simulated rainfall testing. The optical rainfall measurement component is optional. The stated performance data were obtained using the manufacturer's test system and software under test conditions. The manufacturer reserves the right to change product design, functions, and specifications without prior notice for continuous product improvement.