

Indoor Air Quality Monitor



I. Product Overview

This device is a portable 10-in-1 multifunctional air quality monitor that integrates multiple environmental monitoring capabilities. Equipped with a high-precision laser dust sensor, an NDIR infrared carbon dioxide sensor, and an electrochemical gas sensor, it enables real-time, simultaneous detection and display of 10 air quality parameters. Featuring a high-definition color display, the device offers user-friendly operation, compact and lightweight design, and precise measurement accuracy. It is ideal for rapid air quality monitoring and screening in diverse settings—including industrial workshops, offices, office buildings, residential

interiors, and public spaces—making it a specialized solution for routine environmental monitoring and on-site inspections.

II. Testing Items

The integrated device simultaneously monitors the following ten parameters: temperature, humidity, PM1.0, PM2.5, PM10, carbon dioxide (CO₂), carbon monoxide (CO), formaldehyde (HCHO), total TVOC, and the AQI air quality index.

III. Key Technical Parameters

surveillance project	Measurement range	resolution ratio	accuracy error	Detection Principle
ambient temperature	-10℃ ~ 50℃	0.1℃	±0.5℃	Semiconductor thermal sensing
ambient humidity	0 ~ 99%RH	0.1%RH	±3%RH	Capacitive humidity sensing
PM1.0	0 ~ 999μg/m³	1μg/m³	±10%FS	Laser scattering method
PM2.5	0 ~ 999μg/m³	1μg/m³	±10%FS	Laser scattering method
PM10	0 ~ 999μg/m³	1μg/m³	±10%FS	Laser scattering method
carbon dioxideCO ₂	400 ~ 5000ppm	1ppm	± (50ppm+5%of reading)	NDIRinfrared detection
carbon monoxideCO	0 ~ 500ppm	1ppm	±3%FS	Electrochemical sensing
formaldehydeHCHO	0.001 ~ 1.999mg/m³	0.002mg/m³	±10%FS	MEMS Semiconductor Sensing

TVOC	0.001 ~ 9.999mg/m ³	0.002mg/m ³	±15%FS	semiconductor sensor
AQI Air Quality Index	Levels 1–4		National Standard Algorithm Conversion	Built-in intelligent algorithms

IV. Overall Hardware Specifications

- Display: High-definition color LCD screen, featuring full-screen synchronous display of all parameters
- Power supply: built-in 3.7V high-capacity lithium battery, Type-C universal charging port, DC 5V power supply
- Battery life: up to 8–12 hours of continuous operation on a full charge, and 16–24 hours of standby time.
- Body material: high-strength ABS engineering plastic—impact-resistant, wear-resistant, portable, and pressure-resistant
- Body dimensions: ø100×40 mm
- Total weight: approximately 300 g
- Operation: Physical button controls
- Key Features: Low battery automatic reminder, real-time data updates, intelligent AQI level assessment

V. Work Environment Parameters

- Operating temperature: 0 °C–45 °C
- Operating humidity: 10%–85% RH (no condensation, no water accumulation)
- Storage conditions: -10 °C to 55 °C, 5%–90% RH, dry environment
- Contraindications: Do not use in environments with high oil fumes, highly corrosive gases, or direct exposure to large amounts of dust, to prevent damage to the sensor.

VI. Core Product Features

- 1. Ten parameters are displayed simultaneously on a single screen, with data updated automatically in real time, ensuring high detection efficiency;
- 2. Built-in buzzer alarm function triggered when the concentration exceeds the specified limit;
- 3. Built-in national AQI rating algorithm automatically classifies air quality as excellent, good, moderately polluted, or heavily polluted;
- 4. Supports stable device preheating, automatic calibration upon startup, and ensures precise and stable data acquisition;
- 5. Supports manual zero-point calibration, enabling long-term maintenance of measurement accuracy;
- 6. Dual-purpose design for wall mounting and tabletop placement, suitable for diverse detection scenarios;
- 7. Low-power design ensures extended battery life, meeting the requirements for daily inspections and batch testing;
- 8. Easy to operate; no professional calibration required—users with no prior experience can get started immediately.

VII. Standard Configuration List

- Air quality monitor main unit ×1
- Type-C charging data cable ×1
- Product User Manual ×1
- Original factory packaging ×1

VIII. Precautions for Use

- 1. After powering on the equipment, allow it to warm up for 3 minutes; only after the data has stabilized should readings be taken and recorded to ensure accurate detection results.
- 2. Do not expose the equipment inspection ports to strong winds or direct airflow from fans, to avoid interfering with sensor data;
- 3. Gas sensors are precision components; it is recommended to perform regular calibration every 6–12 months to ensure accuracy.
- 4. When the equipment remains idle for an extended period, it must be fully charged before storage to prevent damage to the lithium-ion battery due to undercharging;
- 5. This device is a field rapid screening instrument; the test results serve only as environmental reference data and do not carry legal metrological CMA certification validity.

For authoritative test reports, samples may be submitted to a third-party professional metrology laboratory.

IX. Optional Extended Features

It offers customizable features such as Wi-Fi data upload, cloud-based data storage, and historical data export, making it suitable for engineering support and long-term environmental monitoring scenarios.