

Airborne Particle Counter ZR-1631/1661

Consistent precision,
extraordinary experience.



Introduction

ZR-1631 and 1661 are a new generation of portable particle counters from Junray. The newly redesigned instrument delivers an unparalleled user experience. It supports simultaneous monitoring across six particle size channels. High-precision flow control ensures accurate, reliable data. The intuitive user interface enables fast, efficient operation, it streamlines your cleanroom testing workflow for maximum efficiency.

Features

- 21 CFR Part 11 compliance
- Supports three-level user management and audit trail
- 8-inch color touch screen, fast-response user interface
- Hot-swappable long life lithium batteries
- Supports fingerprint recognition, one-touch login
- Colorful light strip notification
- Supports preset schemes and create result reports
- Optional barcode scanner for fast room and sampling scheme recall
- Built-in thermal printer supports auto-print
- Calibrated with a traceable calibration system according to ISO 21501-4 requirements
- Compact, lightweight, portable and rugged
- 128 GB storage capacity for up to 100,000 data records

Applications

- Pharmaceutical and biologicals production
- Food, beverages, and cosmetic production
- Isolator and other controlled environments
- HEPA filter and filter materials production
- HVAC system and filter verification
- Facility cleanliness validation and monitoring

Reference standards

- ISO 14644
- GMP (2022)
- Federal Standard 209E
- Schedule M
- ISO 21501-4:2018
- JIS B 9921:2010

Packing List

ZR-1631/1661 Host
Carrying case
HEPA filter
Iso kinetic sampling kit
Conductive silicone rubber tube
Power adapter
Documents
Other accessories



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Benefits

Complete data integrity and traceability

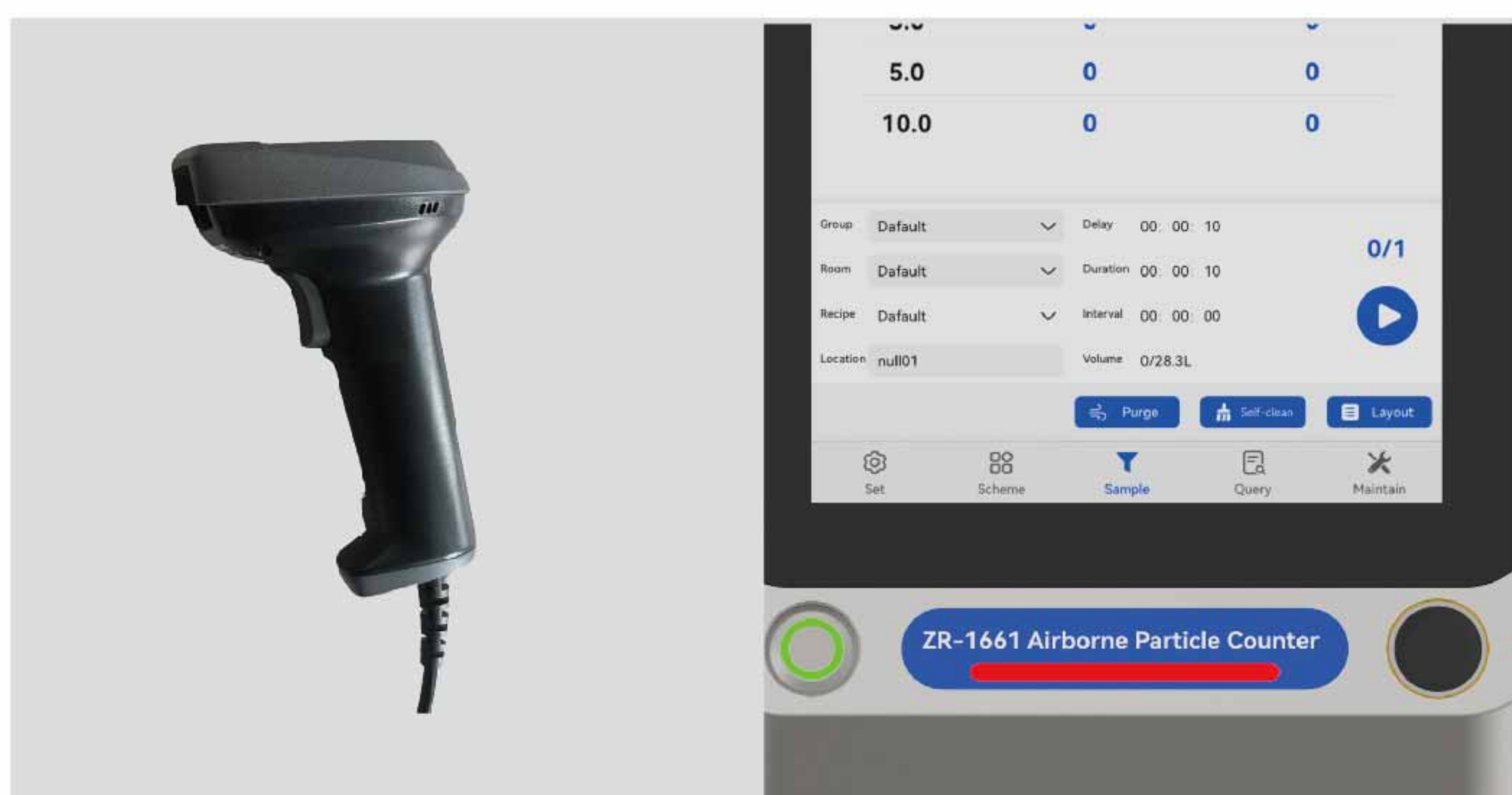


- 21 CFR Part 11 compliance, supports three-level user management with customizable permissions.
- Combined with a full audit trail, it ensures complete data security and traceability.
- Generates unmodifiable PDF reports.



- Users can set fingerprints for rapid login. All operations are fully auditable.
- Multiple interfaces support data export, peripheral connection and future system integration.

Efficient and intelligent interaction



- Optional barcode scanner for entering sampling scheme.
- Multi-color LED status bar provides at-a-glance device status.
- Fast-response touchscreen ensures a smooth user experience.
- Synchronize sampling schemes across multiple units to maintain consistent standards plant-wide.



- Voice broadcast notifications.

Friendly in-situ application

- Preset ISO/GMP standards, automatic UCL calculation, one touch to create report.
- Show concentrations graph in real-time, the monitoring process is visual. Supports voice, light strip, beep and display multiple notifications and alarm methods.
- Large storage(128 GB) can preset 20,000 scheme and 100,000 data records.
- Support up to 2 batteries, hot swappable and long life.



Rugged design and easy to maintain

- High quality wheeled carrying case provides strong protection and good portability.
- 316L stainless steel enclosure, corrosion-resistant, can be directly wiped with alcohols and other commonly used disinfectants.
- Purge function for rapid self-clean, HEPA-filtered exhaust helps reduce contamination risk.
- Self-check the status of key components to provide support for preventive maintenance.



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Specifications

Parameters	Range	
Model	ZR-1631	ZR-1661
Flowrate	28.3 L/min ±2%	100 L/min ±2%
Channel sizes	0.3, 0.5, 1.0, 3.0, 5.0, 10.0 μm	
Counting efficiency	0.3 μm: 50%±20%, >0.5 μm: 100%±10%	
Size distribution error	0.5 μm and 5 μm channel: <±30%	
Size resolution	0.3μm: <15%	
Repeatability	≤10%FS	
Concentration indication error	0.5 μm channel: ≤±30%FS	
Light source	Long life laser diode	
Concentration limit	37,000,000 /m³, 10% coincidence loss	17,000,000 /m³, 10% coincidence loss
Zero count	<1 count/5 min	
Preset scheme	20,000 groups 20,000 rooms 20,000 recipes 200,000 locations	
Data storage	128 GB, up to 100,000 data records	
Sampling delay	0~23h59min59s	
Sampling duration	1s~23h59min59s	
Sampling interval	0~23h59min59s	
Sampling cycle	1~1000 times	
Sampling mode	Manual, automatic, cumulative, differential, concentration, count number, UCL calculation, purge, self-clean	
Alarm and notification	Audible and visible: beep, voice, display, multi-color light strip	
Report	Generates reports for ISO 14644, EU GMP and Fed Std 209E workflows	
Data export	Built-in thermal printer, support external dot matrix printer, export PDF report and data to USB drive	
Data integrity	3 level user management and audit trail, 21 CFR part 11 compliance	
Display	8-inch color touch screen	
Enclosure material	SSL 316L	
Exhaust filtration	Built-in HEPA filter (>99.97%@0.3 μm)	
Sampling data	Automatically store records; Supports USB flash drive export and embedded printer printing	
Communication Methods	Wi-Fi, Bluetooth, RS485, RS232	
Communication Interfaces	USB, RS485, RS232, RJ45, Analog, Pulse Signal	
Power supply	DC 15V	
Battery	About 8 hours (two batteries), hot swappable	
Noise	≤60 dB(A)	
Language	English and Chinese	
Dimension	(L252×W172×H287) mm	
Weight	About 5.6 kg (without battery), each battery 0.45 kg	
Power consumption	≤ 120W	≤ 180W
Operating conditions	5~35°C, 5~90% RH no condensation	
Storage conditions	-20~50°C, ≤ 95%RH	

Associated Devices



ZR-G07 Particle Diluter



ZR-G08 High Pressure Diffuser

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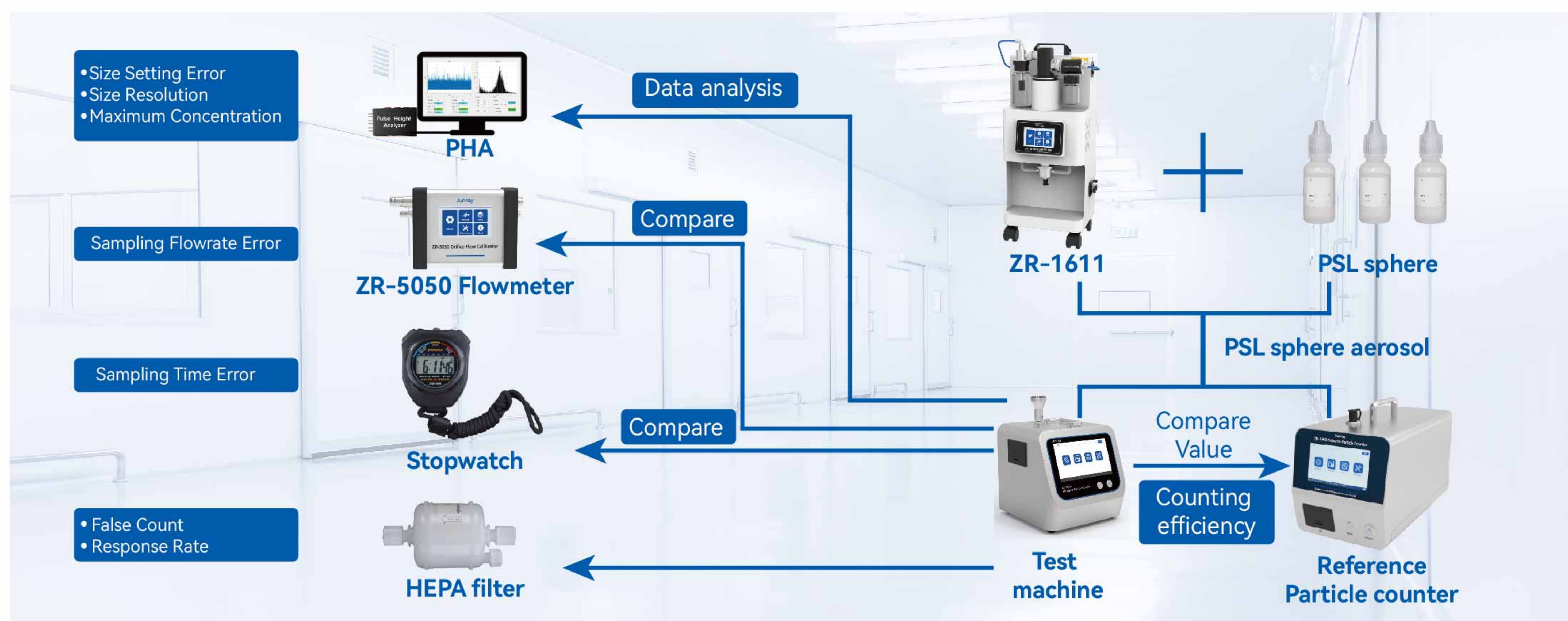
Calibration

Detects and processes every pulse signal generated by individual particles
Junray offers a fully traceable calibration solution

In accordance with <ISO 21501-4 Determination of particle size distribution — Single particle light interaction method Part 4: Light scattering airborne particle counter for clean spaces>, as a laser-based particle detector, the instrument must be calibrated using certified standard particles, with results traceable to reference particle counters.



As a calibrator supplier, Junray provides a complete calibration solution.



Until now, Junray has helped more than 30 ISO 17025 accredited calibration laboratories establish their calibration capabilities and continues to expand this expertise globally. Calibration can be arranged through CNAS, KOLAS and KazStandard accredited laboratories where applicable.



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