



WINNER PARTICLE

-Particle Size Analyzer Since 1985-

Winner2309A WinModule-301

Large-range Dry Laser Particle Size Analyzer



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(Large-range) Dry Laser Particle Size Analyzer



The Winner2309A WinModule-301 is a research-grade flagship dry laser particle size analyzer from Jinan Winner Particle tailored for complex powder material testing. Equipped with independent patented technologies and optimized optical structure, dispersion system and algorithms, it accurately measures particles in their original dispersed state. It delivers stable, repeatable and reliable data even under complex test conditions for wide-distribution particle samples.

It covers an ultra-wide measurement range of 0.1 μm -3000 μm , enabling continuous analysis of particles from nanometer to millimeter scale.

Ideal for universities, research institutions, enterprise R&D and industrial QC, this flagship benchtop instrument provides high-standard testing solutions for powder material research and production control.

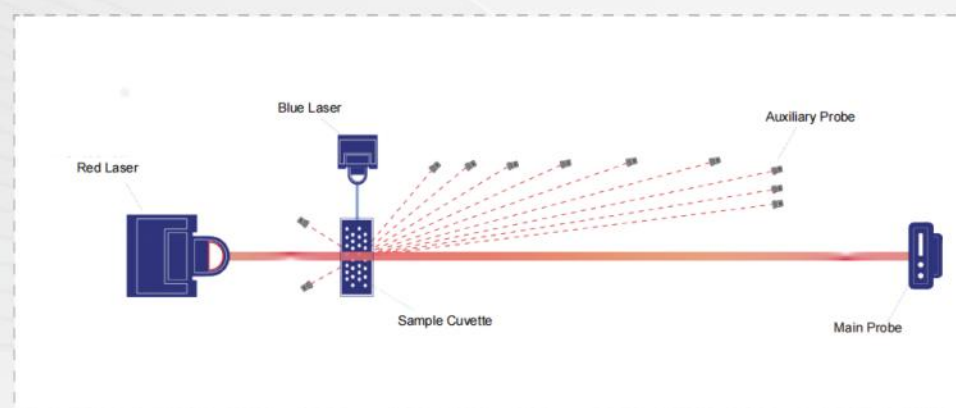
Product Features and Advantages

1. Dual-beam orthogonal optical design enhances submicron and nanoparticle measurement performance.

Featuring Winner proprietary converging Fourier transform optics, the WINNER2309A WinModule-301 improves submicron/nanoparticle resolution via optimized scattered light collection. It exceeds traditional lens aperture constraints to acquire wide-angle scattering signals, supporting highly accurate particle size testing.

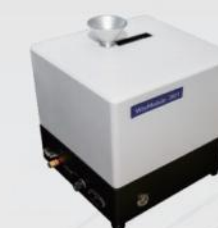
Built with dual-beam orthogonal optical structure, the instrument adopts dual-spectrum detection design and premium imported Fourier lenses, greatly boosting data accuracy and repeatability while maintaining measurement stability. Utilizing horizontally polarized light from an auxiliary blue semiconductor laser, it synchronously captures forward, side and back scattered light of nanoparticles for comprehensive characterization of particle scattering characteristics.

Multi-path and multi-angle data fusion ensures precise, reliable nanoparticle size testing, underpinning advanced research and complex sample analysis.



2. Modular design enables optimal configuration for performance and application needs.

The system adopts an improved variable-speed intelligent feeding mechanism to deliver samples evenly and controllably. Combined with patented turbulent flow dispersion technology, it creates an environment of high-efficiency shearing and collision inside the dispersion chamber for thorough powder dispersion. Key components of the dispersion system are made of highly wear-resistant ceramic materials, greatly extending service life and improving operational stability.



(Dry) WinModule-301

3. Direct-insert sample window optimizes optical path and improves testing accuracy.

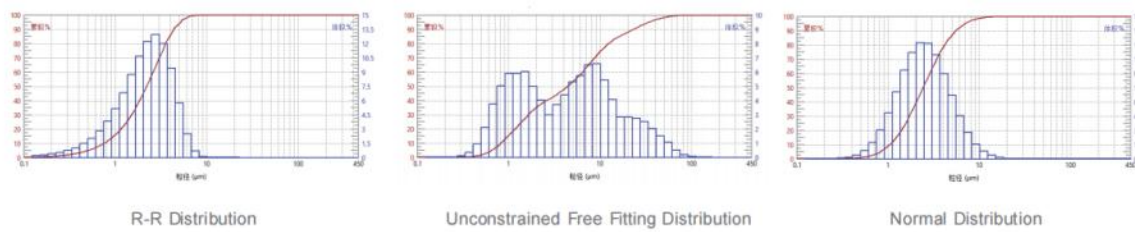
The WINNER2309A WinModule-301 uses a direct-insert sample window, shortening transport paths, reducing pipeline interference and measuring particles under their real dispersed state. This structure inhibits pipeline-related particle sedimentation, agglomeration and segregation for more stable, repeatable test data, laying a solid foundation for high-accuracy particle size analysis.



Software Features

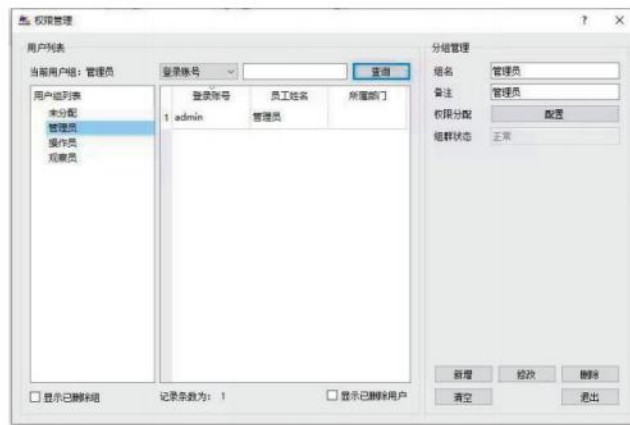
1. Unconstrained free fitting truly restores particle size distribution.

Powered by an advanced unconstrained free fitting inversion algorithm, the software automatically resolves multi-modal particle groups. Independent of preset distribution models, it computes results purely from measured scattering spectra to maximize fitting precision, reproduce true sample distribution and achieve exceptional resolution. Outperforming traditional fixed-function inversion programs, it outputs finer, more realistic particle size data and greatly enhances instrument testing performance.



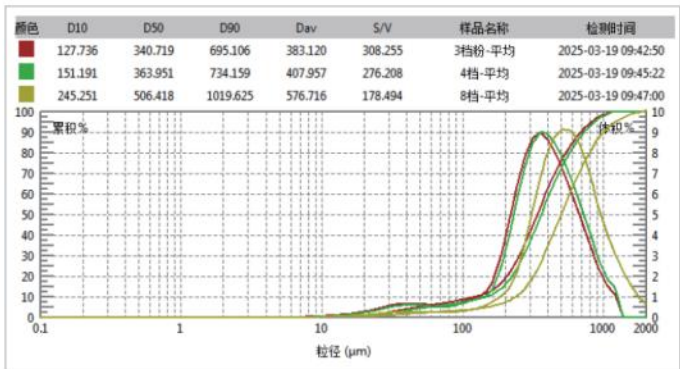
2. GMP-compliant authority management ensures reliable data.

The system supports hierarchical user permissions, GMP-compliant process control and operation logs for standardized traceable testing, meeting strict data management requirements in pharmaceutical and biotech industries. The system fully records the entire process of data generation, storage and processing, with detailed logs and audit trails, meeting GMP data management requirements, reducing human errors, and providing reliable compliance support for drug R&D, process optimization and quality control.

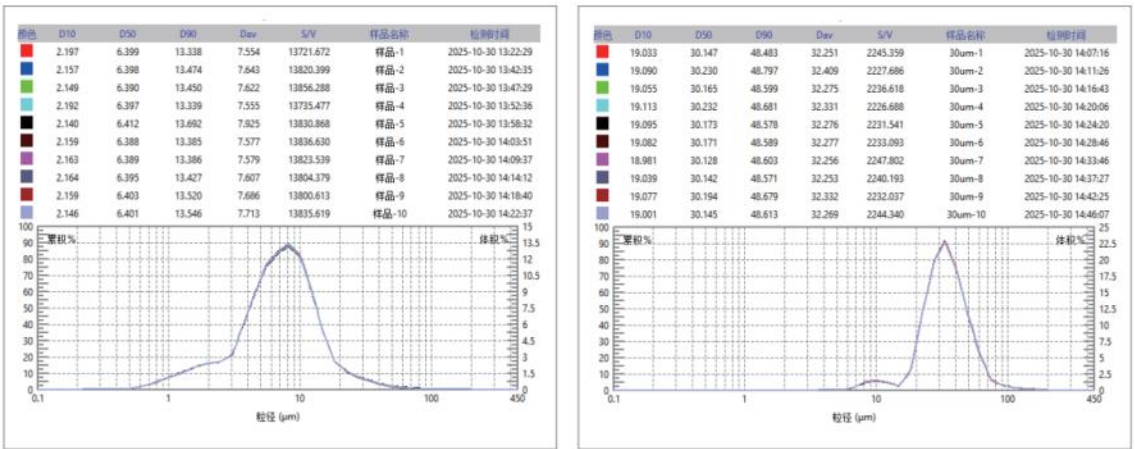


3. Analyze and compare data to intuitively present the changing trends.

The software can accurately analyze data and supports comparison of particle size distribution curves and key characteristic parameters. It can intuitively identify data differences between samples and test conditions on a single interface, quickly obtaining relative relationships and providing data support for method optimization, process evaluation, and result verification.



Comparison of test results of three different samples



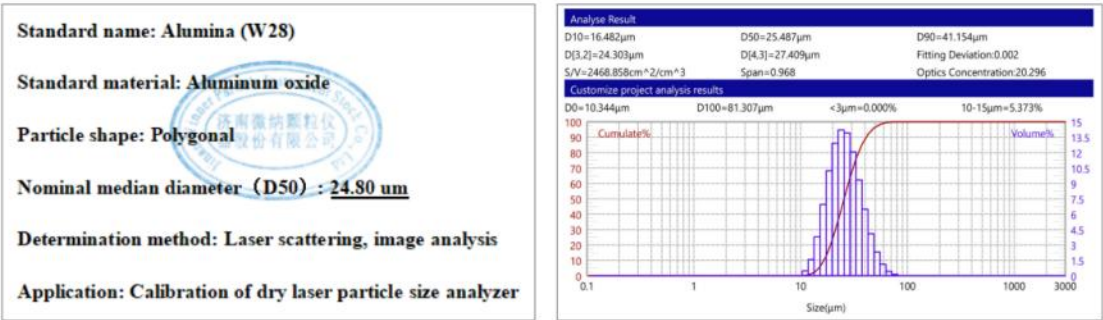
Comparison of results from ten consecutive customer sample tests

Comparison of results from ten consecutive tests using 30μm standard particles

1. Accuracy

The measurement results conform to recognized standards and are verified using GBW (E) 120000 series standard particle calibration.

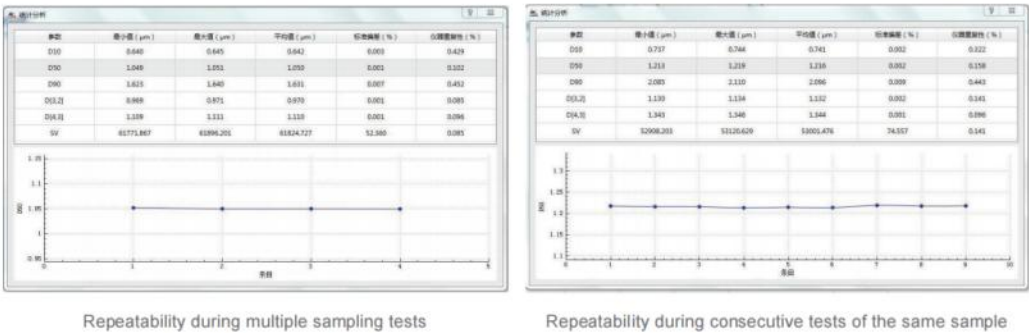
The D50 measurement error of GBW(E)120000 series by Winner Instruments is better than ±1%.



2. Repeatability

Consistency of multiple measurements on the same sample under identical conditions.

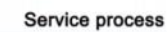
Winner instruments deliver stable and reliable data, with RSD better than ±1%.



Model Name		Winner2309A WinModule-301
Measurement Range		0.1-3000µm
Number of Channels		116pcs
Sample Injector		Winmodule-301
Accuracy Error		< 1.0% (CRM D50)
Repeatability Error		< 1.0% (CRM D50)
Light Source		Main laser: High-performance laser λ=639nm, P > 2mW Auxiliary laser: Blue laser λ=405nm, P > 2mW Service life: > 50000h
Optical Bench Alignment System		Automatic alignment
Operation Mode		SOP Fully automated operation mode
Dry Method Dispersion		Turbulent dispersion, automatic sample introduction, one-click testing
Test Speed		Fastest 10 seconds
Refractive Index		A wide range of refractive indices are available. Any refractive index can be entered.
Sampling Frequency		Fastest data acquisition rate of 10kHz
Software Functions	Analysis Pattern	Free distribution, R-R distribution, log-normal distribution, and statistical models by category.
	Statistical Comparison	Statistical comparison of multiple test results. Users can compare and analyze test data from different batches of samples, before and after sample processing, or at different processing times, effectively guiding product quality and cost control.
	Data Processing	The system performs intelligent statistical analysis and processing of test data, and outputs the most representative test results.
	Custom Analysis	The system can customize the output of any characteristic particle size between D1 and D100, the cumulative percentage of particles larger or smaller than a certain particle size, and the cumulative percentage of a certain particle size range, so as to meet the different requirements of different industries for particle size testing and characterization methods.
	Output	Typical particle size values, interval particle size distribution (i.e., differential distribution) data and graphs (histograms or curves), cumulative particle size distribution (i.e., integral distribution) data and curves, etc.
	Test Report	Test reports can be exported in various formats such as Word, Excel, image (.bmp), text (.txt), and PDF, meeting different requirements for viewing test reports, data reprocessing, and article citation in any situation.
	One-click Operation	Dry method: Activate the automatic operation mode to complete all operations such as dust collection, air supply, feeding, testing, and data processing with a single click.
	Language	Chinese and English interface. Other language interfaces can be added according to user requirements.
GMP		GMP (Optional)
Outer Dimension		Main unit: 870mm*340mm*380mm Dry module: 260mm*245mm*295mm
Net Weight		Main unit: 32kg; Dry module: 7kg



- **Complete and detailed data:** frequency, cumulative distribution curves, distribution tables, etc.
- **Customizable:** Customizable analysis parameters. For example, particle size percentage, particle size range percentage, etc.
- **Editability:** Edit reports and change fonts, layouts, formatting, etc.
- **Multiple data formats:** Supports multiple report formats such as PDF, Excel, and Text.



According to the special requirements of users, we provide product customization services, such as range modification, corrosion-resistant pipeline modification, etc., as well as online solution customization, etc. For details, please call our technical department.

40⁺ Years

Excellence in Particle Testing

Jinan Winner has been developing particle testing technology and instruments for 40 years, becoming a well-known brand in the particle measurement industry with reliable product quality!



-Our Key Partners-

Our partners across the country are a testament to our strength.



Institutions of higher learning and research institutes

Peking University, Tsinghua University, Renmin University of China, Zhejiang University, Shandong University, Jiangsu University, Tianjin University, Nanjing University of Aeronautics and Astronautics, Australian University, Indian Institute of Technology, Mongolia University, Beihang University, Southeast University, China Agricultural University, Shanghai Jiaotong University, Xi'an Jiaotong University, Nanjing University, The University of Hong Kong, University Of Wollongong, Dalian University of Technology, Ocean University of China, PSG College of Technology, Institute of Engineering Physics, Beijing Institute of Technology, Shanghai Medical Device Testing Institute, Guangdong Provincial Medical Device Testing Institute, Beijing Medical Device Testing Institute, Huazhong University of Science and Technology, University of Science and Technology Beijing, Chinese Academy of Sciences, Institute of Metal Research, etc.



Industrial Enterprises

Shougang Group Co., Ltd., Jiangsu Shagang Group Co., Ltd., Pangang Group Co., Ltd., Shanghai Huayi Polymer Co., Ltd., Jiaozuo Qianye Cement Co., Ltd., Shanshui Cement Group Co., Ltd., China National Petroleum Corporation, Shengli Oilfield, China Ping An Coal Group, BYD Co., Ltd., Tianneng Battery Group Co., Ltd., Chaowei Power Supply Co., Ltd., Guangzhou Libai Enterprise Group Co., Ltd., Nippon Paint Co., Ltd., Zhenjiang Titanium Dioxide Co., Ltd., Moze biological Co. Ltd., Korea Conformity Laboratories, PPG Powder Coating Co., Ltd., Otsuka Pharmaceutical, SIM (USA) INTERNATIONAL INC, Mundipharma. India, TAIYO INK. Japan, Heraeus. Germany, Osram lighting. Germany, etc.

Since 1985
Particle Size Analysis

JINAN WINNER PARTICLE INSTRUMENT STOCK CO., LTD

Web: www.winner-psa.com

TEL: +86-0531-88876213 Email: jnwinner01@126.com

Address: F Building, Unit 2, North Area, University Science Park, High-tech Zone, Jinan City, Shandong Province, China