

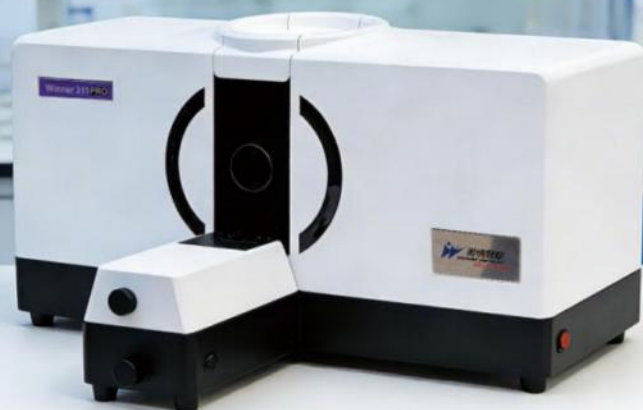


WINNER PARTICLE

-Particle Size Analysis Since 1985-

WINNER311PRO

Spray Laser Particle Size Analyzer



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Product Features and Advantages

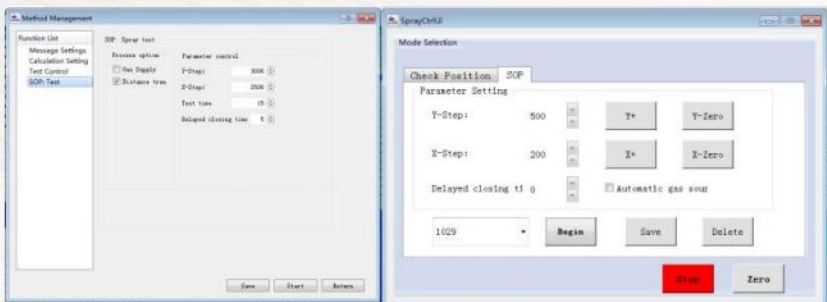
1. Optimized Optical Path for Mini Spraying Scenarios

Designed for droplet size testing of mini spray and atomization devices, Winner311PRO is systematically optimized in optical path and overall structure. Its scenario-matched optical system ensures great consistency and repeatability under complex spray conditions, delivering stable and accurate measurements for fine-sized, highly dispersed and transient sprays. It provides reliable testing for pressure spray bottles, medical nebulizers and e-atomizers, making it the professional pick for small spray droplet particle size analysis.



2. One-Click Intelligent Test for Automated & Highly Consistent Measurement

Equipped with an intelligent control platform, Winner311PRO supports one-click testing, automatic calibration and dynamic particle distribution detection to locate and control measuring positions accurately. Following preset SOPs, the system runs full testing procedures automatically, reducing manual errors. It ensures comparable and traceable particle size data for research and high-precision testing scenarios.



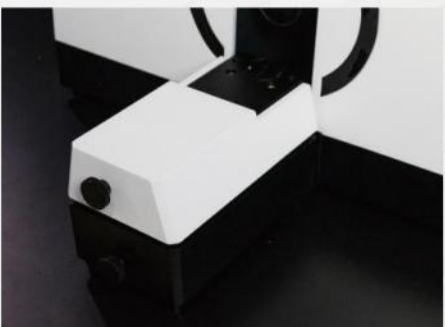
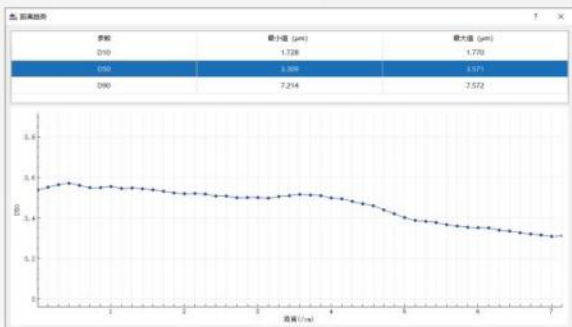
Developed independently by Jinan Winner, Winner311PRO is a new benchtop laser particle size analyzer for sprays. Tailored to characterize droplet size from miniature spray devices, it delivers stable, accurate and professional testing solutions.

As an upgraded version, Winner311PRO adopts proprietary core technologies with upgraded hardware, intelligence and compatibility. Its intelligent modular system fits diverse atomizers, cuts manual deviation, ensures stable repeatable tests and meets strict quality control standards.

Built-in high-speed data acquisition and processing system automatically records and saves data upon spraying, enabling fast analysis with improved accuracy, repeatability and efficiency. Optimized for pharmaceutical use, it supports GMP-compliant audit trails for standardized, traceable data management. Through tight hardware-software integration, it offers high-standard, efficient particle size testing for spray droplets.

3. Equipped with exclusive dual-axis electric translation stage to enable multiple new testing functions

Controlled by the intelligent platform, the instrument supports spatial dynamic particle distribution measurement. It continuously collects droplet data at different distances to truly reflect particle size changes during spray propagation. The distance trend analysis visually shows particle size variation with position, offering intuitive data for spray mechanism research and product performance evaluation.



4. Multi-protection Design: Lens Protection & Aerosol Collection Device

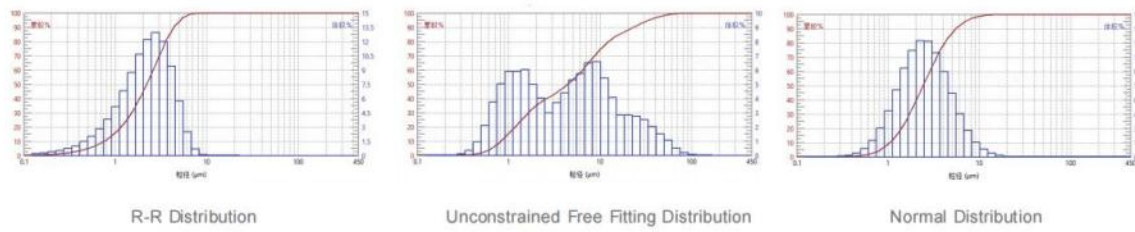
Tailored for aerosol testing, Winner311PRO is fitted with a dedicated lens protector to prevent optical contamination by droplets and ensure stable, accurate measurements. It adopts controllable negative pressure to collect aerosols and stop mist dispersion in the lab, boosting operational safety and standardization for a secure and controllable testing environment.



Software Features

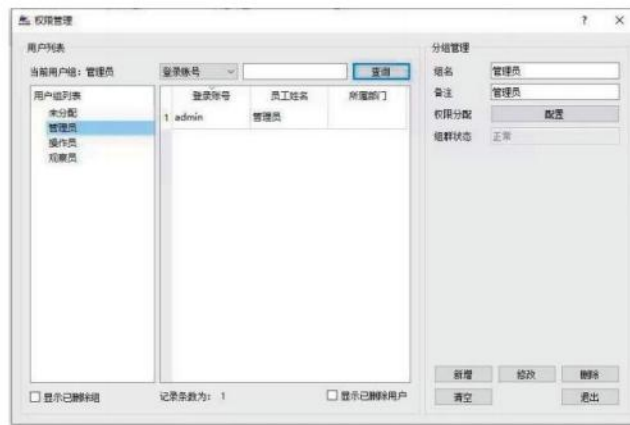
1. Unconstrained free fitting truly restores particle size distribution.

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.



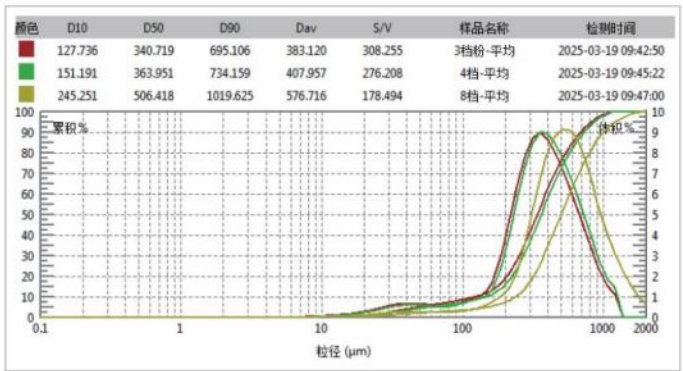
2. GMP-compliant authority management ensures reliable data.

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.

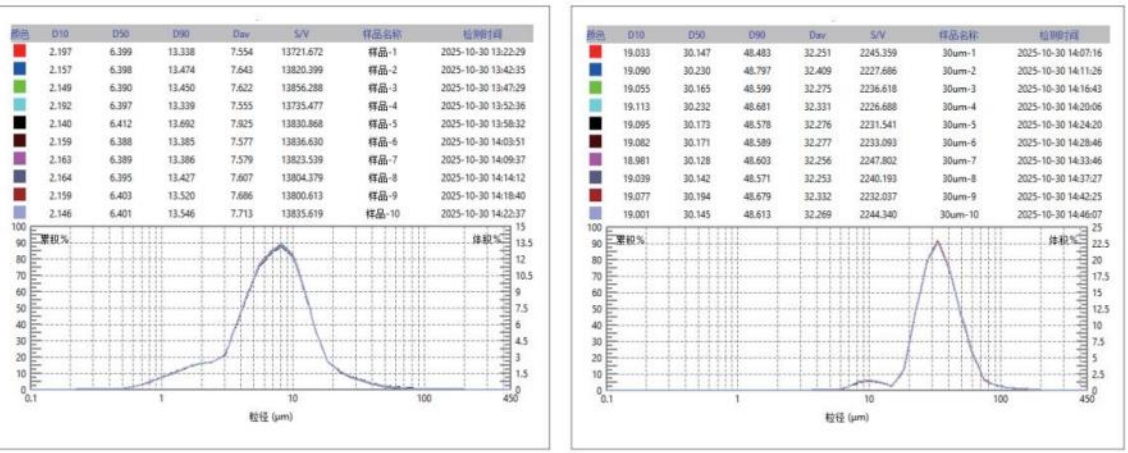


3. Analyze and compare data to intuitively present the changing trends.

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.

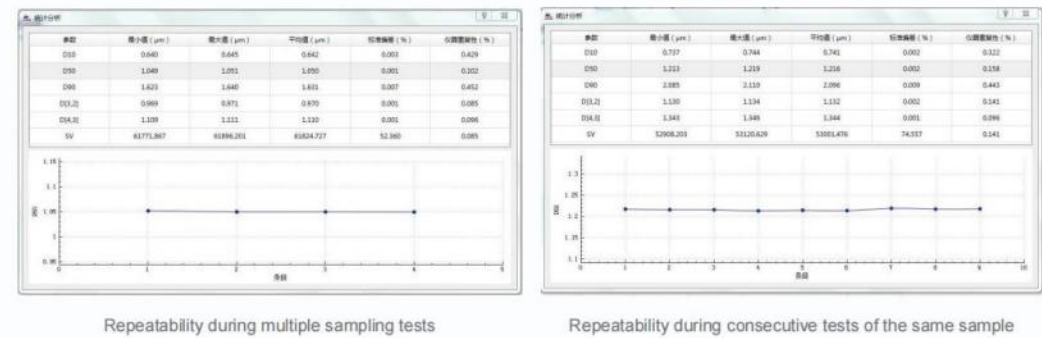
The D50 measurement error of GBW(E)120000 series by Winner Instruments is better than ±1%.



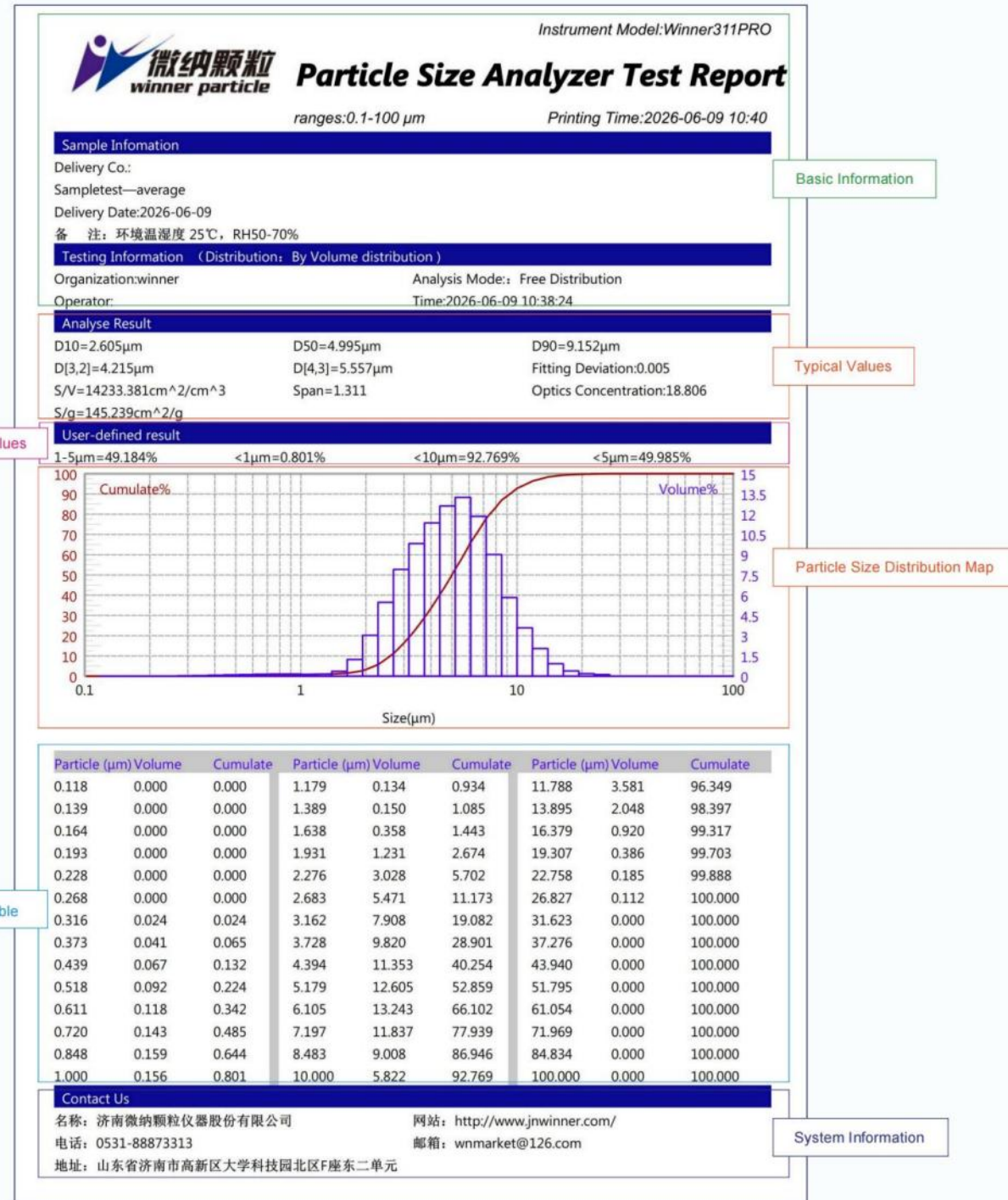
2. Repeatability

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	Winner311PRO
Instrument Structure	All-in-one structure
Measurement Range	0.1-100µm
Number of Channels	80pcs
Accuracy Error	≤ 1.0% (CRM D50)
Repeatability Error	≤ 1.0% (CRM D50)
Light Source	Semiconductor laser λ=650nm, P > 2mW
Sample Injection	Open sampling mode
Measuring Zone Length	60mm
Outer Dimension	720*620*370mm
Net Weight	30kg
Intelligent Test Bench	Coordinated testing; SOP settings can be configured for test positions. Features position memory and one-touch reset.
Analysis Pattern	Free distribution, R-R distribution, log-normal distribution, and statistical models by category.
Statistical Method	Supports volume-weighted and number-weighted distributions to meet varied statistical standards for particle size analysis across industries.
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.
Custom Analysis	User-defined analysis parameters: calculate percentage based on particle size, particle size based on percentage, or percentage based on particle size intervals. This meets the particle size characterization requirements of various industries.
Test Report	Test reports can be exported in various formats such as Word, Excel, image (.bmp), text and PDF, meeting different requirements for viewing test reports, data reprocessing, and article citation in any situation.
Language	Chinese and English interface. Other language interfaces can be added according to user requirements.
GMP	GMP (Optional)



Features

- **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.



1. After-sale guarantee service

After the product warranty period, if parts need replacement, only charge cost.

2. Personnel training service

Two calibration services are provided free of charge.

3. Software lifetime free upgrade

The software of the same model can be upgraded free of charge for life.

4. Regular follow-up and return visit usage status

There are special after-sales service specialists who return to visit regularly.

5. Product customization service

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