

Particle Strength Verification

the most professional laser particle size analyzer production base in China

01

Pilot innovation and sustainable development



Since 1982, when it undertook the national "Seventh Five-Year" scientific and technological research project, it has 30 years of research and development history. During this period, Winner undertook the completion of 5 provincial and ministerial scientific and technological research projects; applied for more than 30 patents; published more than 80 professional papers; since the successful development and production of China's first laser particle size analyzer, it has created more than ten firsts in China. Winner Particle continuous innovation in technology leads the development of China's particle testing technology.

02

Excellent team, professional research and development



In terms of product development and technical research, winner has a high-quality R&D team, which is composed of optical experts, product-oriented researchers and software and hardware engineers with rich product development experience. , Electronics, particle size testing, image and other aspects have more in-depth research. The company's chief expert, Professor Ren Zhongjing, is the pioneer of laser particle size analysis technology in my country and enjoys a high reputation in the field of particle testing. With a high-quality R&D team and a high-standard quality management system, Jinan winner ensures the quality and technical content of its products.

03

Honorary qualifications, industry recognition



Yuke Particle has successively won the national "high-tech enterprise" and provincial "double soft enterprise", and ISO13320:2026 laser particle size analyzer international standard. It was ranked among the top 50 powder companies in Asia by international authoritative organizations. In 2014, China's powder industry Honors such as Top Ten Brand Enterprises, Special Contribution Award for China's Particle Testing industry, etc. In 2014, Winner Particle as the "No1."online laser particle size analyzer" has been successfully applied in the cement industry and has become the crowning touch of the automation of my country's particle preparation process.

04

Unique technology, industry-leading



Through continuous technological breakthroughs and innovations, Winner Particle has created a number of unique technological achievements:

- Unconstrained Free Fitting Technique
- Original wet and dry switching operation mode
- Exclusive patented optical path design
- Optical path automatic alignment technology
- Double beam laser particle size analyzer
- Spectrum Amplification Technology
- Unique fully built-in dispersion system
- Unique blinding testing technology
- Advanced intelligent operation mode
- Diversification of test reports
- Various particle size analysis modes
- Ultrasonic self-cleaning sample window technology
- Automatic analysis algorithm module for propani roundness and sphericity
- Turbulent Dispersion Technology

YK2308B

Intelligent Wet and Dry Laser Particle Size Analyzer

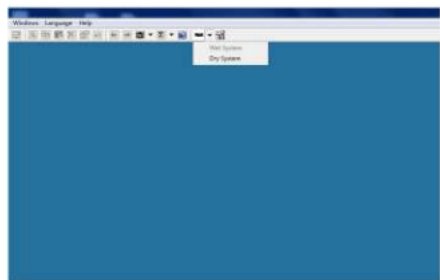


2308 intelligent full automatic wet&dry laser particle size analyzer adopt laser diffraction theory(Mie and Fraunhofer diffraction), measure size is from 0.01 μm to 2000 μm (dry 0.1 μm -2000 μm), Which offer reliable and repeatable particle size analysis for a diverse range of applications.It use dual-beam& multiple spectral detection systems and side light scatter test technology to significantly improve precision and performance of test, It's the prior choice for industrial production quality control departments and research Institutions.

Advantages:

- **One-click switching mode between dry and wet:**

This instrument integrated wet and dry dispersion test in one, successfully resolved the problem of dry and wet technology integration, realize one key to switch.



- **Full built-in Sample Wet and dry dispersion system**

Auto wet dispersion system,sel mechanical stirring, ultrasonic dispersion, and circulation path in one,SOP realize one key operation.

For dry dispersion system, Turbulence dispersion patented technology and Normal shock shearing effect, make particles sufficient dispersion,ensure good test.



- **Smart operation mode:**

With intelligent automatic mode of operation, to achieve a key test, as long as according to the prompt addition of sample, click the "test", all process will be complete automatically,

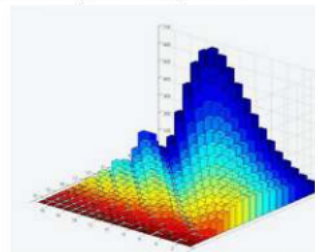
- **Dual optical path design**

The dual-spectrum design and dual-laser orthogonal light increase the measurement range, and the accuracy reaches 0.01 μm -2000 μm (wet method) and 0.1-2000 μm (dry method). The high-sensitivity, high-resolution photoelectric probe system ensures the collection of all particle scattered light signals and ensures the accuracy of test data.



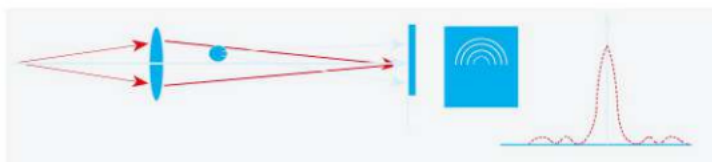
- **Advanced optical path design:**

Using micro-nano patented concentrated light Fourier transform technology and dual-spectrum optical path design, scattered light is not constrained by the lens aperture.



- **Unconstrained free fitting technique:**

Using the original unconstrained free fitting technology of Micro-Nano, the particle size analysis is not limited by any function, and can truly reflect the distribution state of particles.



Test principle

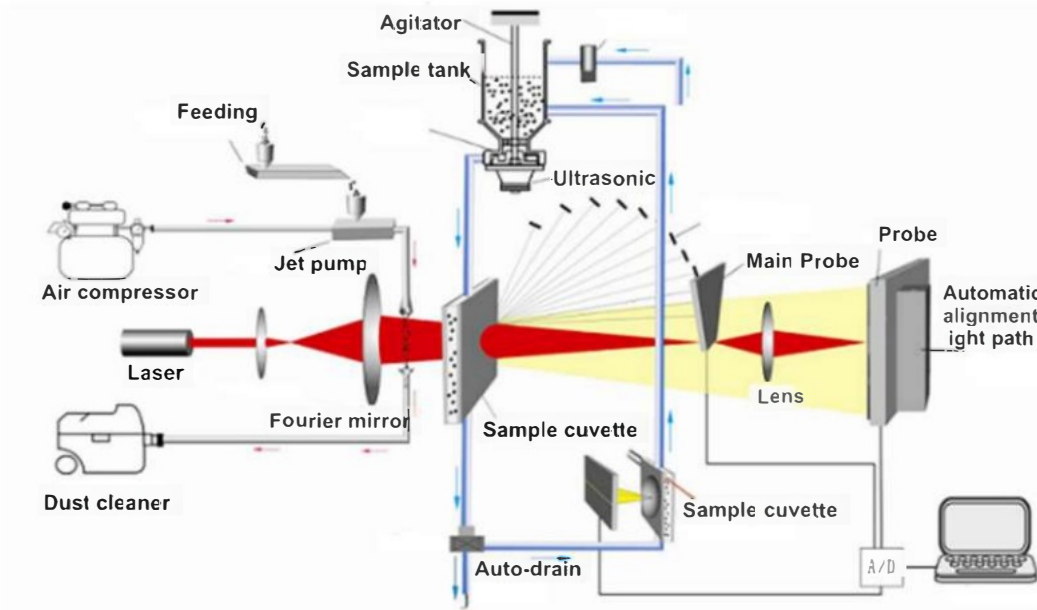


Figure-Winner2308 scheme

Application

Widely used in cement, ceramics, medicines, lotions, paints, dyes, pigments, fillers, chemicals, catalysts, drilling mud, abrasives, lubricants, coal, sediment, dust, cells, bacteria, food additives, pesticides, explosives, graphite, photographic materials, fuel, ink, metal and non-metal powder, calcium carbonate, kaolin, coal slurry and other powdered materials.



Technical parameter:

Model Name	2308B	
Standard	ISO13320-1:2009,GB/T19007-2016,Q/0100JWN001-2013 Compliance with 21 CFR Part 11	
Principle	Laser diffraction principle	
Analysis	Mie and Fraunhofer scattering	
Detector Arrangement	Log-spaced array, test angle from: 0.015 degree to 145 degree	
Measuring Range	Wet:0.01µm-1200 µm Dry: 0.1µm-1200µm	
Silicon Photodetectors	Wet:127 pcs Dry:100 pcs	
Accuracy error	Wet<1% Dry<1% (CRM D50)	
Repeatability error	Wet<1% Dry<1% (CRM D50)	
Light source	High performance semiconductor red laser (λ=639nm) P>3.0MW Auxiliary green solid semiconductor laser (λ= 405 nm) P>2.0MW (available)	
Optical path	Converging light Fourier transform optical path	
Effective focal length	500mm	
Laser Safety	Class 1	
Wet dispersion	Ultrasonic	Frequency:40KHz Power:60W, Time: ≥1S
	Stir	Revolutions Speed: 0-3000RPM (Adjustable)
	Circulate	Rated Flow:30L/min Rated Power:70W
	Water level sensor (UK)	Prevent water overflow and effectively protect the instrument.
	Sample tank	Volume:1000mL
	Micro-Sample cuvette	Volume: 10mL (Available)
Dry dispersion	Dry-turbulence dispersion patent technology, normal shock wave shear technique	
Feeding Speed	Adjustable (Variable speed knob)	
Operation Mode	Full automatic / manual control, freely choose	
Dispersion medium	Compressed Air, pressure: 0 to 6 bar	
Optical bench alignment system	Full automatic, precision is up to 0.2um	
Full Test Speed per time	Wet: <2 Min Dry : <1min Interval time per test result :500ms	
Outer dimension	L104cm×W44cm×H54cm	
Net Weight	70Kg	

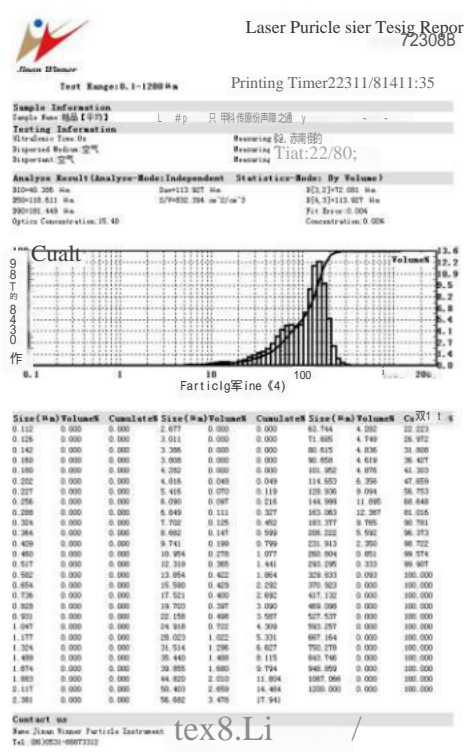
Report interpretation

Header section:
Instrument parameters,sample information

Characteristics of particle size:
The value of particle size characterstcs

Particle size chart:
Cumulative distribution and frequency distribution of particle size.It's corresponding to data of particle size dstrubuton tabe

Particle size table:
Cumulative distribution and frequency distribution of particle size



Our some customers

1) Institutions of higher learning and research institutes

- Peking University, Tsinghua University, Renmin University of China, Zhejiang University, Shandong University, Jiangsu University,
- Tianjin University, Austraiian University, Indian institute of Technology, Mongolia University, Beihang University, Southeast University,
- China Agricultura University, Shanghai Jiaotong Universty, Xian Jiaotong University, Nanjing University,
- The University of Hong Kong, University Of Wollongong, Dalian University of Technology, Oocean University of China
- PSG College of Technology, Institute of Engineering Physics, Beijing Institute of Technology,
- Shangha Medica Device Testng Instute, Guangdong Provincial Medical Device Testing Institute, Beijing Medcal Device Testing Instute
- Huazhog University of Science and Technology, University of Science and Technology Beijing,
- Chinese Academy of Sciences,Institute of Meta Research, etc. Nanjing University of Aeronautics and Astronautics,

2) 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 Naciona Petroleum Corporation, Shengli Oifed,
- 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 Pant 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, Mundpharma. India,
- TAIYO INK. Japan, Heraeus. Germany, Osram lighting.Germany



Particle Instrument Quality Assurance

Provide customers with the most professional particle testing solutions

■ Long service time

Laser particle size analyzer, as an analysis instrument, it doesn't have consumable parts except for the stirring parts, it has no transmission parts and no wearing parts; high performance laser, with a long service time of more than 25000 hours, high sensitive photodetectors is a core part, it will not be easy damaged if operate normally; the photodetector array is a key part, as long as it is used properly, it will not be automatically damaged. Therefore, users do not have to worry about the service time of winner instruments at all. According to the customer feedback from Jinan winner return visit, the instrument with the longest service life of the product is more than 15 years.



■ Low failure rate

The after-sales department Jinan Winner has made statistics on the maintenance failures of the sold instruments, and the failure rate of the instruments is within 3%.



■ High industry recognition

After 30 years of technical precipitation, Jinan winner has continuously improved its technology in the R&D and production process of instruments according to the characteristics of different industries. With its excellent product quality and high-quality service, it has been highly recognized by practitioners in the powder industry.



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Good accuracy

The accuracy is based on the national particle size standard sample GBW(E)120000 series as the standard. According to the practice of analytical instruments: the measured value of the instrument is not more than 3 times the standard deviation of the nominal value of the standard sample, which is qualified. Not only did all the winner instruments meet the standards when they leave the factory, but the accuracy is <3%.



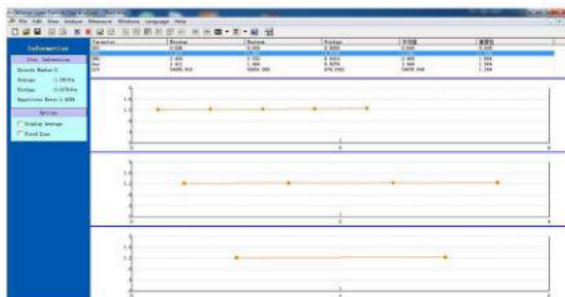
The national standard material D50 value is 25.9μm



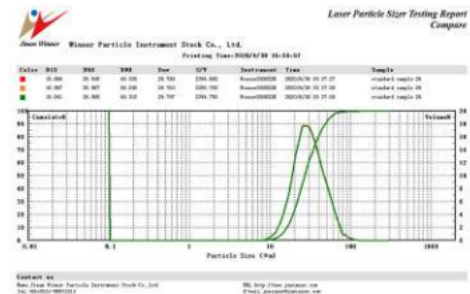
The same national standard substance D50 value was tested at 25.917μm

Good repeatability

Winner instruments have good repeatability due to reasonable design, careful manufacturing process, and high-performance component selection. The test method for repeatability is to use the national standard sample for 10 consecutive tests, and the relative value of the statistical standard deviation of the test result(D50)<3% is qualified.



Repeatability when the same sample is tested continuously



Repeatability during multiple sampling test

Good consistency

Compared to the well-known brand of laser particle size analyzer, the consistency of Winner Particle is very good.

Mastersizer 2000 Report Data:

名称:	分析图式:	范围:
1.760	Hydro 2000MU (A)	0.020 to 2000.000 μm
1340	粒度范围:	11.50 %
0.0405 %Vol	精度:	0.306
0.249 μm ² /g	分散性:	27.354 μm

Winner 2000Z2C Report Data:

Sample Name:	Delivery Co.:	Delivery Date:
Y20	minnr	2022-0-2
Analysis Result:	D[4,3]:	26.724
Statistics-Mode: By Volume	Pit Error:	0.006

Particle Hardware features

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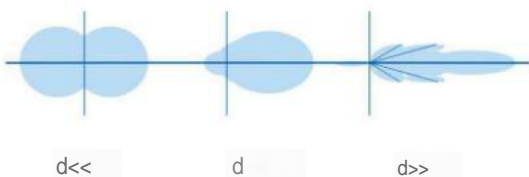
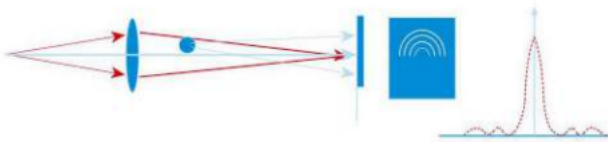
1. Dual laser orthogonal beam patented technology

Application model:
winner2005; winner2008; winner2009; winner2308; winner2309.

3. Omnidirectional Scattered Light Detection Technology

Adding multiple auxiliary integrated photodetectors can effectively collect scattered light at various angles corresponding to the test range, and achieve test accuracy and reliability in the full range.

Application model:
winner2005; winner2008; winner2009; winner2308; winner2309.



2. All built-in dispersion systems

It avoids the problem of test data distortion caused by long optical path, uneven dispersion, and large particles settling in the pipeline caused by the external dispersion system.

Application model:
winner2000; winner2000ZDE; winner2005; winner2008; winner2009; winner2308; winner2309; winner3003; winner3008; winner100.

4. Spectrum Amplification Technology

The sensitivity of the probe to the signal is enhanced, and the test range is greatly improved.

Application model:
winner2008; winner3008; winner2308; winner2009; winner3009; winner2309.

5. Converging light Fourier transform patented technology

The large-angle scattered light is not limited by the aperture of the Fourier lens. The optical path is shortened to the shortest, effectively improving the resolution of the instrument; The optical path design principle belongs to the international leading technology.

Application model:
winner2000; winner2000ZD; winner2005; winner2008; winner2009; winner3003; winner3008; winner2009

6. MIE scattering theory

The full range adopts the most advanced MIE scattering theory.

Application model:
winner2000; winner2000ZDE; winner2005; winner2008; winner2009; winner3003; winner3008; winner3009

7. Fully automatic alignment system

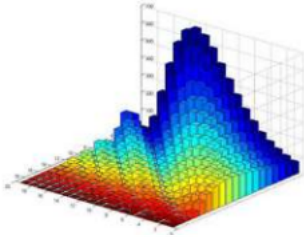
The precision four-phase hybrid stepping motor is used to automatically adjust the optical path and calibrate the optical path at any time, eliminating the deviation caused by manual alignment, and improving the accuracy and stability of the test results from an optical point of view.

Application model:
winner2000ZD; winner2005; winner2008; winner3008; winner2009; winner3009.

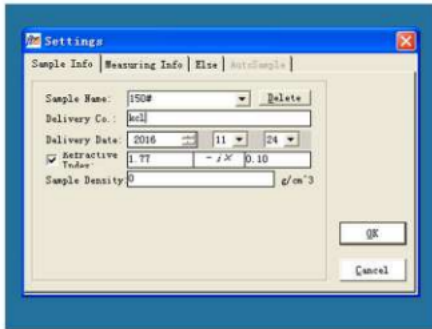
Particle Software Features

Provide customers with the most professional particle testing solutions

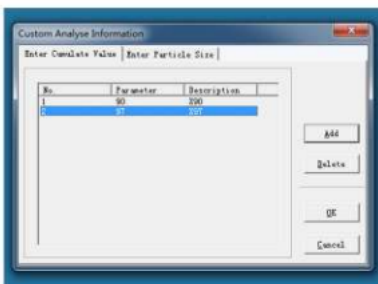
1.Unconstrained free fitting technology can truly reflect the particle distribution.



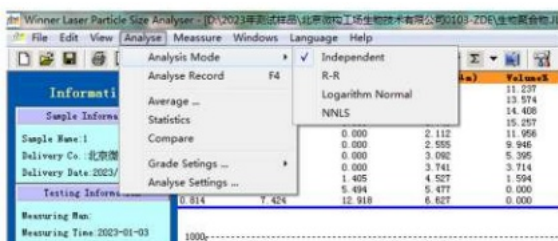
3.Different refractive index models can be established to make the measurement results more accurate and reliable.



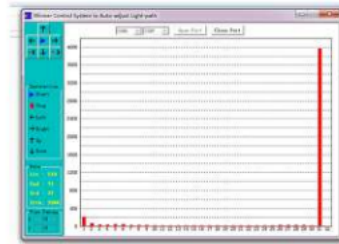
5.User-defined analysis parameters, calculating the percentage according to the particle size, calculating the particle size according to the percentage, or calculating the percentage according to the particle size range, so as to meet the characterization methods of particle size testing in different industries.



7.Multiple distribution modes: free distribution (closer to the real data of the sample), Rosin-Ramler distribution, logarithmic normal distribution and original data conversion mode (according to the real and accurate measurement of abrasive and flake particles)



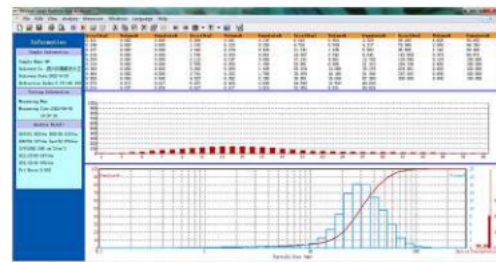
2.Accurate and convenient automatic alignment function.



4.Automatically memorize the last sample test information and display the current test process in real time. Freely customize the display mode and switch between energy spectrum and data display.



6.Statistical comparative analysis can be carried out for multiple test results, and the difference between different batches of samples, samples before and after processing, and test results at different times can be clearly compared, which has strong practical significance for the quality control of industrial raw materials.



8.Chinese and English language interfaces are supported, and other language interfaces can also be embedded according to user requirements. Multiple formats can be set for file printing and exporting, and BMP image files, Txt documents, Word documents, and Excel documents are supported.

