Winner Particle
Instrument Stock Co., Ltd

WINNER

Winner Particle Size Analyzer Since 1985

THE LEADER OF PARTICLE TESTING TECHNOLOGY IN CHINA

Jinan Winner Particle Instrument Stock Co., Ltd. is a national high-tech enterprise integrating R&D, production and sales of particle testing related instruments and equipment (Securities Name: "Winner Particles", stock code 430410). Leading by technology research and development, Winner has won the National Key New Product Award, the Gold Award of the First China Science and Technology Expo, the Third Prize of Shandong Science and Technology Progress Award, the National High-tech Enterprise and other honorary titles, and has passed CE, SGS,CNAS, ISO9001 international quality system , National Science and Technology SME Innovation Fund Project and other certification acceptance.

The founder of the company, Professor Zhongjing Ren, is a national expert. Since the beginning of the National Seventh Five-Year Science and Technology Project in 1982, Winner invented the 1st particle size analyzer in China, which made up for the lack of domestic particle size analyzers, and developed and produced various particle size analyzers. It has a history of more than 30 years. By now, There are more than 30 national patents, including laser optical path research and development, particle size distribution testing and dispersion invention technology patents, utility model patent technology and self-owned software calculation patent technology, software copyright, etc.
There are more than 10 kinds of products, laser particle size analyzer, nanometer particle size analyzer, spray particle size analyzer, microscopic image particle size analyzer and online particle size analyzer can test the particle size distribution and image morphology of emulsion, suspension, powder, spray of nanometer and micrometer, and are widely used in a variety of product quality control, product research and development of manufacturers in the industry, as well as material research and development applications of the China National Medical Device Inspection Institute and domestic and foreign universities, Its high quality , strong technical support and services to get good feedback from the users, the China Industry's most innovative strength of the enterprise, The honor of China particle testing technology leader, and the top 50 enterprises in Asia etc.

Survive by quality, develop by innovation, adhere to the product concept of excellence and technology-led, Winner strives to provide customers with more accurate, more stable and durable instruments!

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Wechat

Winner319C

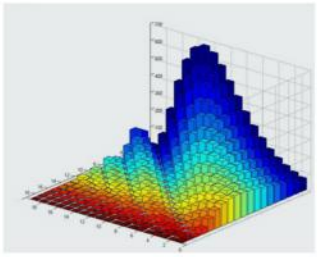
Spray Particle Size Analyzer

Winner319 Industrial laser particle size analyzer is a specially designed and developed bench-top spray laser particle size analyzer for droplet size test. This instrument adopts Laser diffraction &Fraunhofer diffraction principle and parallel light path design with high-performance and high-power laser, lifetime>25000hours, which can meet the requirements of droplet test. And the test range can be adjusted according to the customers' requirement.

Advantages:

Exclusive patent technology

It adopts representative Parallel optical testing technology and Spectrum amplification technique and realizes the wide range expansion in limited space. Besides, it adds several Auxiliary integration photoelectric detector, which can effectively collect scattering light from every angle in the testing range, realizing the testing accuracy and reliability in the whole range.



Unique Airflow Protection Device

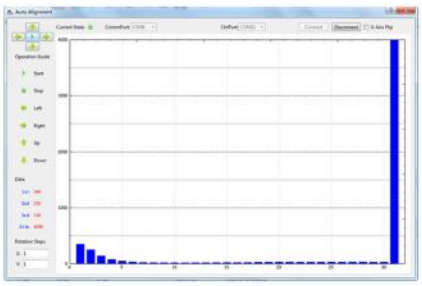
It has airflow protection device, which can effectively protect the lens and avoid droplet pollution to lens in testing process.

Split-Type Structure Design

Split-Type structure and adjustable test area can meet the needs of the spray test in any conditions and It has many specialties, such as non-contact measurements, non-interfering etc.

Stable automatic optical path alignment system

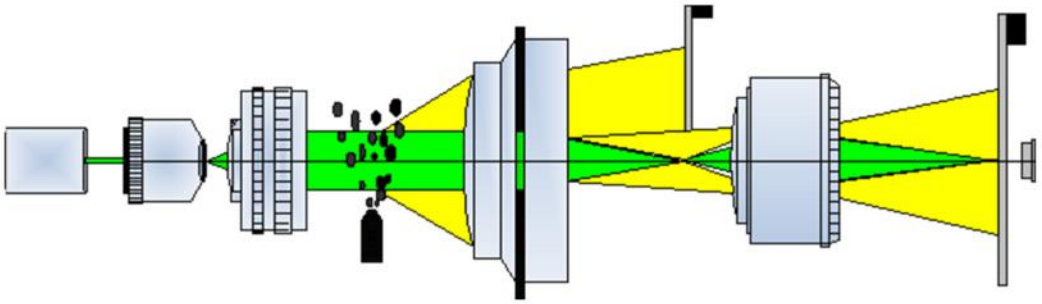
Remove adjusted difficulty caused by the light path movement, the light path alignment system can be corrected by a key



Multiple size distribution model

Free choice standard model, RR distribution and Lognormal distribution. Can convert the volume distribution and individual number distribution freely.

Test principle



Application

Winner319 can be applied to Fire control,forest,pesticide spray test, Medicine nebulizer droplet test, aircraft engine, spray prilling, Nozzle research,any aerosol etc., Therefore especially suits the laboratories of enterprises, colleges and universities and research institutes to use.

Technical parameter:

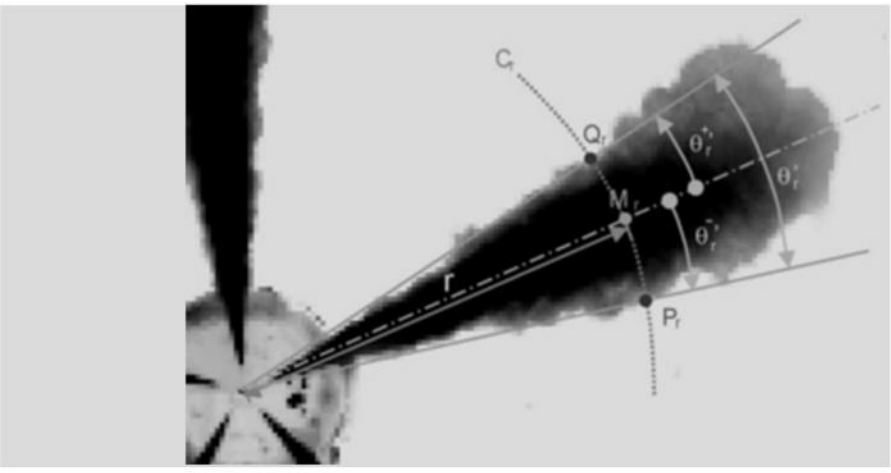
Model Name	Winner319C
Principle	Fraunhofer diffraction principle
Instrument Structure	Split-Type
Testing Range	1μm-2000μm (The lower limit can be extended to 0.1μm.)
Number of Channels	88 pcs
Accuracy error	≤1% (Reference to CRM D50)
Repeatability error	≤1% (Reference to CRM D50)
Reproducibility between instruments	<1% (Reference to CRM D50)
Data Acquisition Rate	≧2KHZ
Laser	LD Pump Laser; λ=532nm, p>40mw, life time>25000 hour
Laser safety	Class 3B
Air purging system	Equipped with airflow protection device, which can effectively protect the lens and avoid droplet pollution to lens in testing process.
Sampling Mode	Open Style
Optical alignment system	Automatic
Working temperature	10-40°C
Environment humidity	≤75%
Operation platform	Common model, Windows 7/8/10 (64 bits) need install Office 2003
Output parameters	Particle volume distribution curve, D10-D100 any parameters
Testing Area Length	0.1-10m/adjustable
Lens Protection	Double gas episodic
Outer Dimension	Transmit port: L369*W295*H360mm Receive port:L858*W295*H360mm
Optional	GMP, Angle test
Power Supply	220V, 50HZ
Weight	13+24KG

Spray image acquisition and analysis system

Product introduction: This product uses the image shadow method to observe the overall visual characteristics of the spray, so as to calculate the specific characteristic parameters such as droplet size, spray cone angle, penetration distance, spray area, etc

Scope of application: applicable to spray characteristic test of various types of nozzles

Instrument principle: take the spray image by image method, and then analyze the relevant parameters.



Patent Technology:

- Pressurized aerosol protection device for spray particle size analyzer is protected by patent No. ZL 2011 2 0267651.9
- Spray particle size analyzer with auxiliary probe construction is protected by patent No. ZL 2011 2 0267648.7
- Split spray laser particle size analyzer is protected by patent No. ZL 2011 2 0267654.2
- Optical bench design is protected by patent No.– ZL 2014 2 0378380.8,
- 3 dimensional–optical bench alignment system is protected by patent No.– ZL 2013 2 0835882.4.
- Mie scattering principle application patent No.– ZL 2013 2 0812021.4.

Test Report and Description:

Vx : Particle diameter, < X particle volume summation percent of total particle′ s volume

Nx : Particle diameter, < X particle number summation percent of total numbers of particles

VAD: The volume weighted average particle size.

SMD: Surface area weighted average particle size.

NAD: The number of weighted average particle size.

R.S: Sample dispersion index, characterization of particle size distribution width. Smaller value, higher concentrated distribution.

N/V: N50/V50, Characterization of particle size distribution width. Values closer to 1, the distribution is more centralized.

Size / quantity distribution: Different statistical analysis

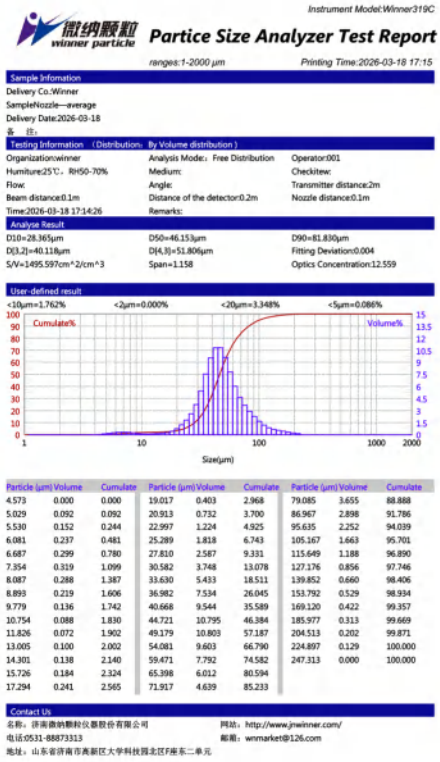
Report interpretation

Header section:
Instrument parameters , sample information

Characteristics of particle size:
The value of particle size characteristics

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

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



Instrument Model:Winner319C

微纳颗粒 winner particle **Partice Size Analyzer Test Report**

ranges:1-2000 μm Printing Time:2026-03-18 17:15

Sample Infomation
Delivery Co.:Winner
SampleNozzle—average
Delivery Date:2026-03-18
备 注:

Testing Information （Distribution：By Volume distribution）

Organization:winner	Analysis Mode：Free Distribution	Operator:001
Humiture:25℃，RH50-70%	Medium:	Checkitew:
Flow:	Angle:	Transmitter distance:2m
Beam distance:0.1m	Distance of the detector:0.2m	Nozzle distance:0.1m
Time:2026-03-18 17:14:26	Remarks:	

Analyse Result

D10=28.365μm	D50=46.153μm	D90=81.830μm
D[3,2]=40.118μm	D[4,3]=51.806μm	Fitting Deviation:0.004
S/V=1495.597cm^2/cm^3	Span=1.158	Optics Concentration:12.559

User-defined result
<10μm=1.762% <2μm=0.000% <20μm=3.348% <5μm=0.086%

Cumulate% Volume% Size(μm)

Particle (μm)	Volume	Cumulate	Particle (μm)	Volume	Cumulate	Particle (μm)	Volume	Cumulate
4.573	0.000	0.000	19.017	0.403	2.968	79.085	3.655	88.888
5.029	0.092	0.092	20.913	0.732	3.700	86.967	2.898	91.786
5.530	0.152	0.244	22.997	1.224	4.925	95.635	2.252	94.039
6.081	0.237	0.481	25.289	1.818	6.743	105.167	1.663	95.701
6.687	0.299	0.780	27.810	2.587	9.331	115.649	1.188	96.890
7.354	0.319	1.099	30.582	3.748	13.078	127.176	0.856	97.746
8.087	0.288	1.387	33.630	5.433	18.511	139.852	0.660	98.406
8.893	0.219	1.606	36.982	7.534	26.045	153.792	0.529	98.934
9.779	0.136	1.742	40.668	9.544	35.589	169.120	0.422	99.357
10.754	0.088	1.830	44.721	10.795	46.384	185.977	0.313	99.669
11.826	0.072	1.902	49.179	10.803	57.187	204.513	0.202	99.871
13.005	0.100	2.002	54.081	9.603	66.790	224.897	0.129	100.000
14.301	0.138	2.140	59.471	7.792	74.582	247.313	0.000	100.000
15.726	0.184	2.324	65.398	6.012	80.594			
17.294	0.241	2.565	71.917	4.639	85.233			

Contact Us
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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, 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. 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 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,

Winner Particle Instrument Quality Assurance

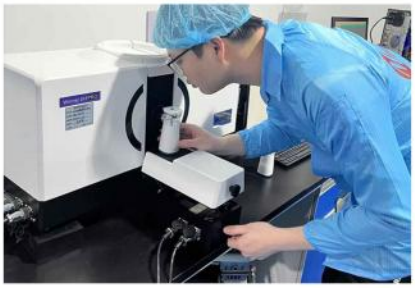
Provide customers with the most professional particle testing solutions

Long service time

Laser particle size analyzer, as an analysis instrument, it doesn't have consumable parts excpe 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.