



## Winner-2008B Intelligent Laser Particle Size Analyzer



### Brief introduction:

Winner2008B full automatic wet laser particle size analyzer adopt MIE scattering principle, measure size is from  $0.01\mu\text{m}$  to  $1200\mu\text{m}$ , 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, on behalf of the domestic advanced level in the field.



## Main Specifications:

Model Name		Winner2008B
Standard		ISO13320-1:1999, GB/T19077.1-2008, Q/JWN001-2009
Principle		MIE scattering principle
Measuring Range		0.01 $\mu$ m-1200 $\mu$ m
Photo detectors		127 pcs
Accuracy error		<1% (Deviation of D50 on national standard sample)
Repeatability error		<1% (Deviation of D50 on national standard sample )
Light source		High performance He-Ne Laser ( $\lambda$ = 632.8nm, P>2MW) Semiconductor laser ( $\lambda$ = 650nm, P $\geq$ 3MW)
Dispersion Method	Ultrasonic	Frequency:40KHz Power:35W, Time: $\geq$ 1S
	Stir	Revolutions Speed: 0-3000RPM (Adjustable)
	Circulate	Rated Flow:8L/min Rated Power:10W
	Sample Pool	Volume:350mL
	Micro-Sample Pool	Volume: 10mL ( Available)
Operation Mode		Full automatic/ manual control, freely choose
Optical bench alignment system		Full automatic,precision is up to 0.1 $\mu$ m
Software function	Analysis mode	Free Distribution, R-R Distribution, Logarithm Normal Distribution, Mesh number classification etc.
	Statistic Method	Volume Distribution, Quantity Distribution
	Statistic Comparison	Several Testing Results of samples Different batches of samples testing result, Samples before and after processing, Test result of samples in different time.
	User-defined Analysis	Figure out percentage according to the particle size Figure out particle size according to the percentage Figure out percentage according to the particle size range Meet demands of representation of particle test in different industries
	Test Report	Word, Excel,Photo( Bmp), Text etc
	Multiple-language Support	Multiple language Support
	Intelligent operation	Automatically control water inflow, dispersion,test and analysis.Better Repeatability after remove human-factor
Testing speed		<2min/time fastest measuring time<10S
Outer dimension		L66cm*W32cm*H40cm
Net weight		65Kg



## **Main Features:**

### **1) Winner Patent -Optical path design**

Converging light Fourier transform light patented technology, make scattering light not be restricted to lens aperture. Double spectrum design make its precision achieves from 0.01um to 1200μm, and Dual-laser orthogonal light make use of the semiconductor auxiliary laser extend the test angle from 45 degree to 135 degree, ensure receive all the angles of signals.

### **2) Expand Size Range**

measurement range significantly expanded to 0.01um, particularly suitable for small samples of the user, the sub micron particle test results reached the international level

### **3) Full built-in dispersion system**

The ultrasonic dispersion, mechanical stirring and circulation channel reasonable integrated in the interior of the instruments, ensure the uniform dispersion and distribution of particles in the testing process, effectively avoid uneven distribution, large particle deposition phenomenon caused by long pipe line of outside dispersion system , to ensure the accuracy of the test results.

### **4) Intelligent 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 processes including water-supply, dispersion, circulation, testing, cleaning, data record, data analysis, save and print are automatically completed, not only reduce the testing workload, but also eliminate the interference of human factors, to further improve the accuracy and authenticity of testing results.

### **5) Automatic Optical path alignment system**

The precision of four hybrid stepping motor in the automatic system of optical components, micro precision of 0.1um, the instrument of light path is always at its best to eliminate manually on the light path and the troubles and difficulties but also enhance the accuracy and stability of test results.



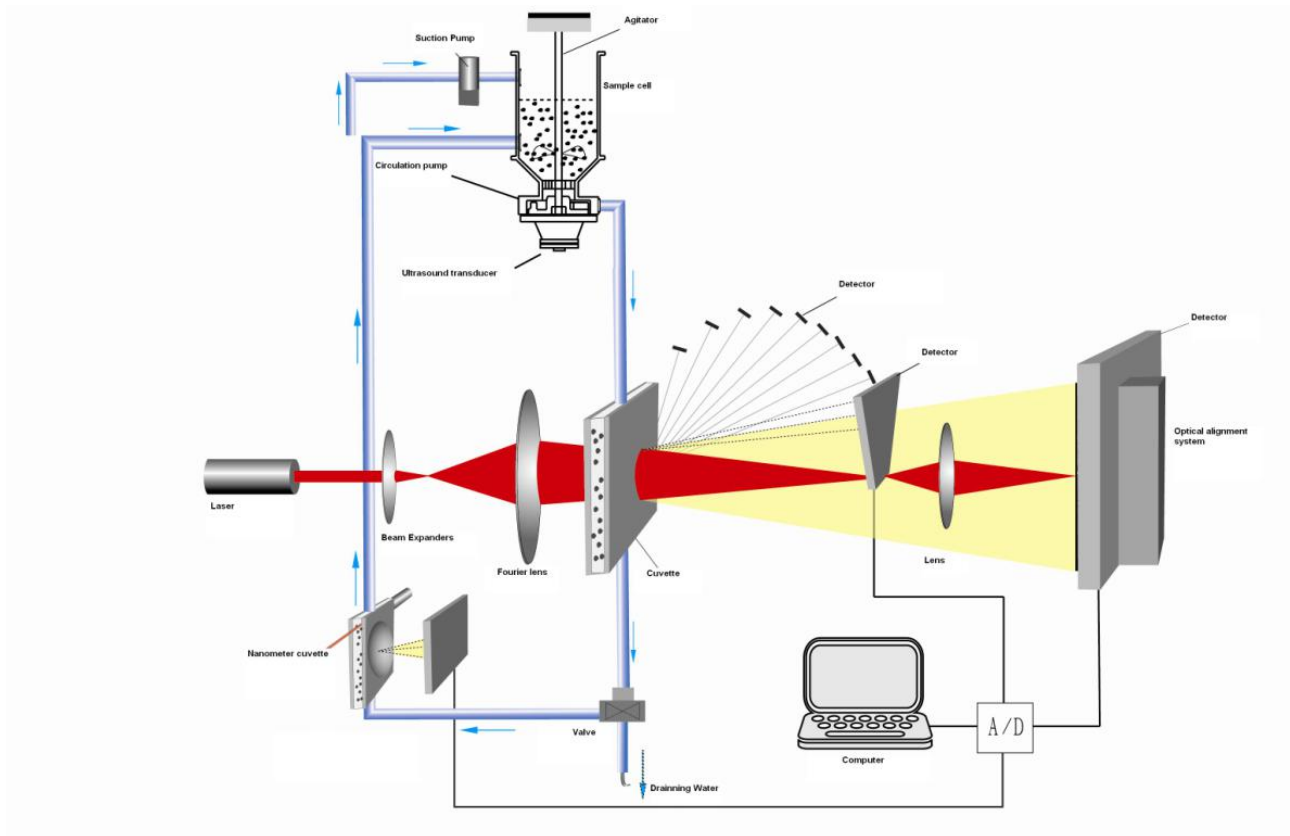
#### 6) Authoritative calibration method

In the entire test range using the national standard materials for calibration, only a year calibration once the instrument can. Calibration method is simple and quick.

#### 7) Unconstrained free fitting technique

Winner original unconstrained free fitting technology, particle size analysis is not affected by any functional constraints, can be a true reflection of the distribution of particles.

#### Instrument principle diagram



#### Adopt Patents Technology:

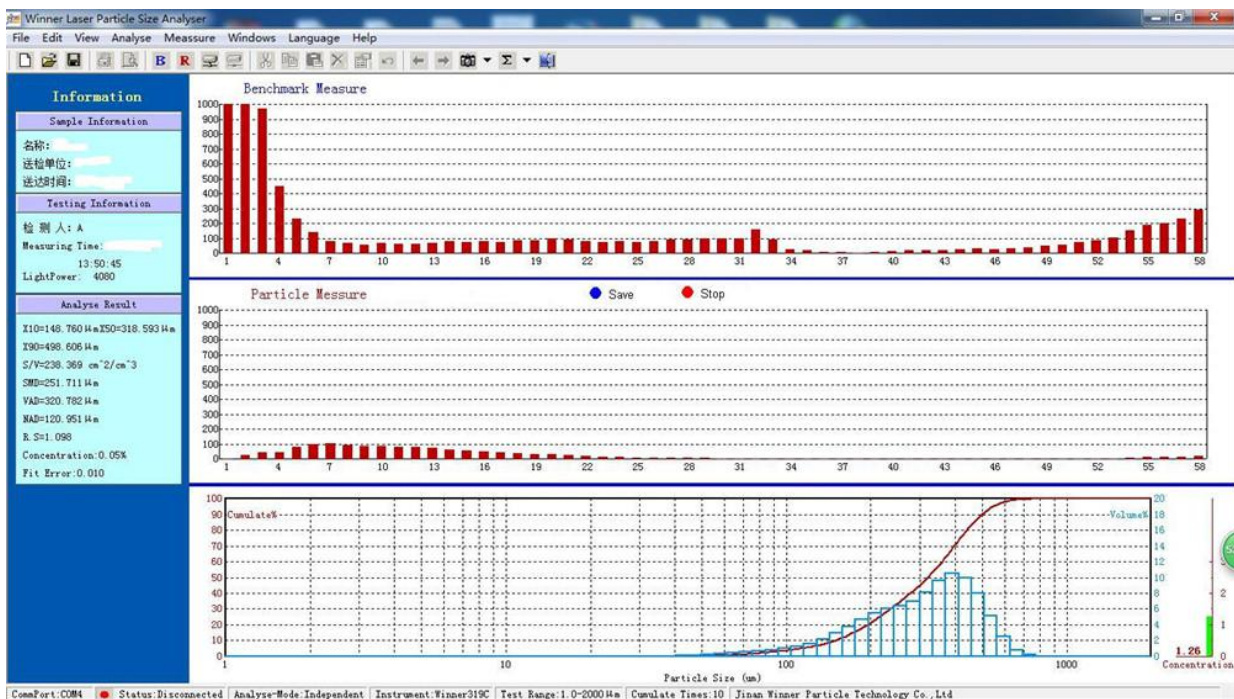
1. Optical bench design is protected by patent No.- ZL 2014 2 0378380.8,
2. Optical bench alignment system is protected by patent No.- ZL 2013 2 0835882.4.
3. Mie scattering principle application patent No.- ZL 2013 2 0812021.4.



4. Dual laser beam orthogonal application is protected by patent No.-ZL 2007 2 0025702.0

### Instrument Test operation interface:

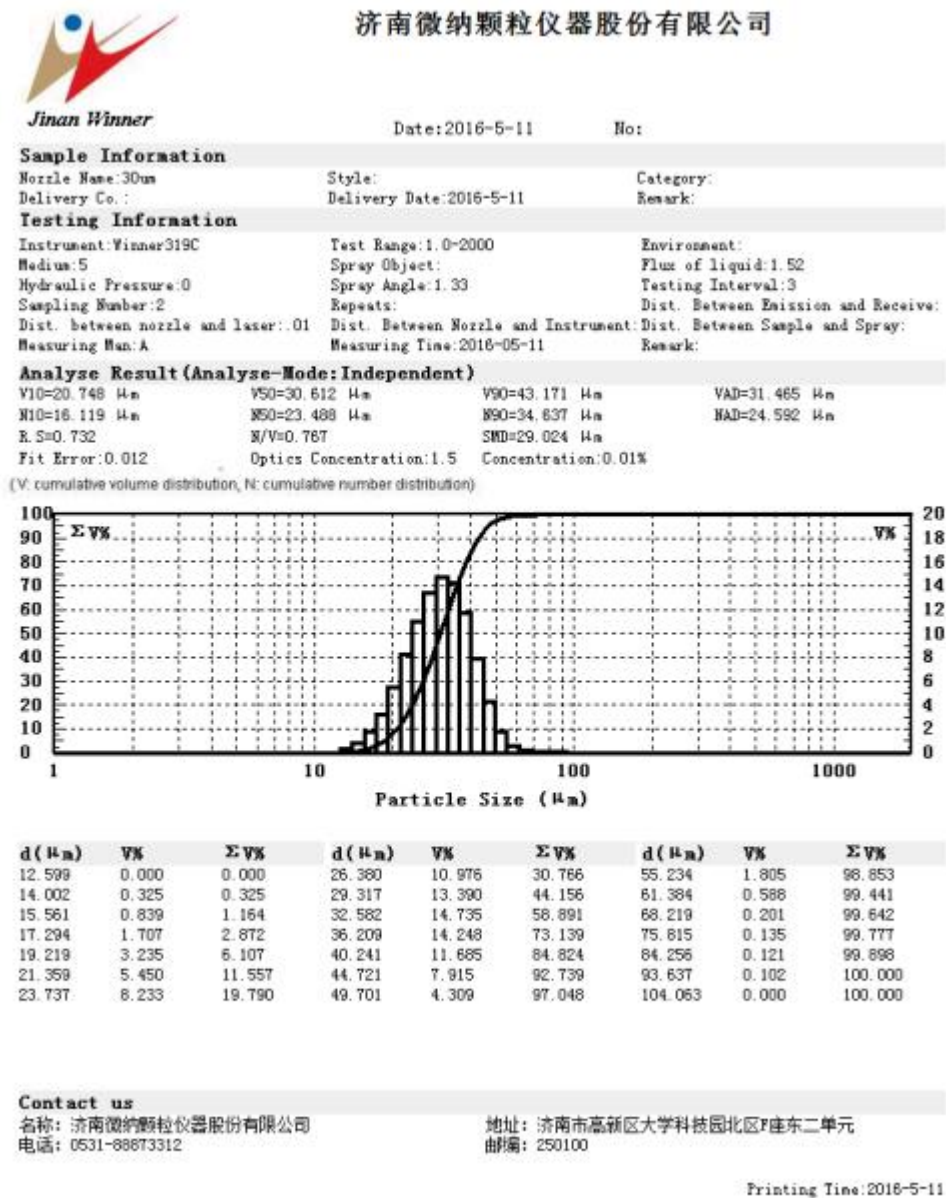
After the background test, click on "Energy spectrum test" in "test view". And the system will display "test view". Observe the Spectral curve and concentration, After the test result becomes stable, click the "save the results". The System will automatically save the test result at the preset time intervals



Energy Spectrum Test View



Test Report and Its Description:



- 1) D10 : Particle diameter, < 10% particle volume summation percent of total particle's volume
- 2) D50 : Particle diameter, < 10% particle volume summation percent of total particle's volume
- 3) D90 : Particle diameter, < 10% particle volume summation percent of total particle's volume
- 4) DAV:The average particle size of the particle swarm

5) S/V: Volume specific surface area; surface area per unit volume of particles

**Particle size analysis diagram:**

- Horizontal axis is the size of the particle, which is the logarithm distribution.
- Left column is the volume of the cumulative percentage, corresponding to the upward trend curve
- Right column is the volume percentage of a certain interval, corresponding to the histogram or the ups and downs of the curve.
- The test result of data list is corresponding to the analysis chart.

**Application:**

Winner2008 is widely used in mineral materials, cement, ceramics, chemicals, paint, emulsion, dyes, pigments, fillers, chemical products, catalysts, drilling mud, abrasive, lubricant, coal, sand, dust, bacteria, cells, food, additives, pesticides, explosives, graphite, photosensitive materials, fuel, and ink metal and non metal powder, calcium carbonate, kaolin, coal water slurry and other powder material.

