Winner-2008 Intelligent Laser Particle Size Analyzer

Brief introduction:

Winner2008A full automatic wet laser particle size analyzer adopt MIE scattering principle, measure size is from 0.01μm to 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, on behalf of the domestic advanced level in the field.

Main Specifications:

Model Name	Winner2008A		
Standard	ISO13320-1:1999, GB/T19077.1-2008, Q/JWN001-2009		
Principle	MIE scattering principle		
Measuring Range	0.01μm-2000μm		
Channels Number	127		
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 (λ= 632.8nm,　P>2MW) Lifetime>25000hours semiconductor laser (λ= 650nm,　P>3MW)		
Dispersion Method	Ultrasonic	Frequency:40KHz　　Power:35W,　　Time: ≥1S	
	Stir	Revolutions Speed: 0-3000RPM (Adjustable)	
	Circulate	Rated Flow:8L/min　　　Rated Power:10W	
	Sample Pool	Volume:1000mL	
	Micro-Sample Pool	Volume: 10mL (Available)	
Operation Mode	Full automatic/ manual control, freely choose		
Optical bench alignment system	Full automatic,precision is up to 0.1um		
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 speed<10S		
Outer dimension	L66cm*W32cm*H40cm		
Net weight	65Kg		

Laser Particle Size Analyzer- Since 1985

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 0.01μm to 2000μm,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

  Winner2008A 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**
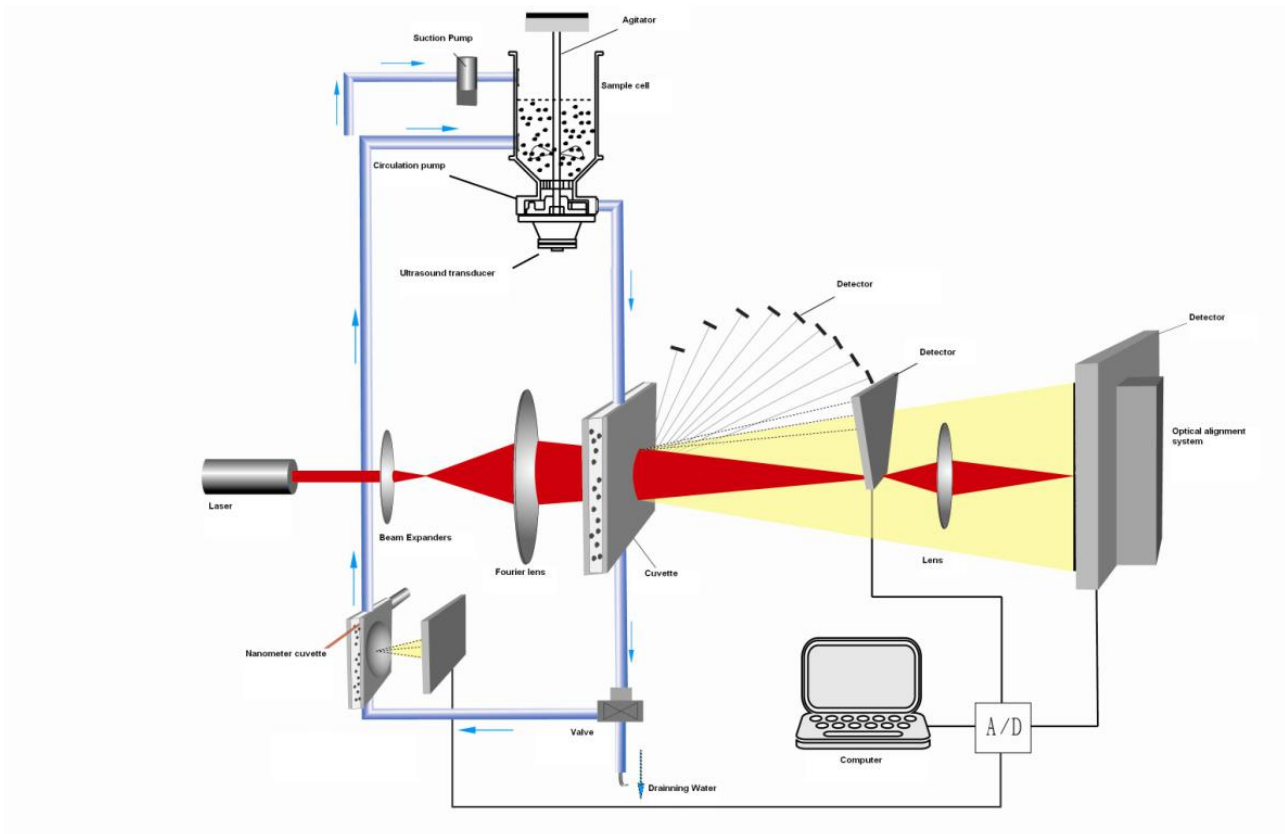
Adopt Patents Technology:

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
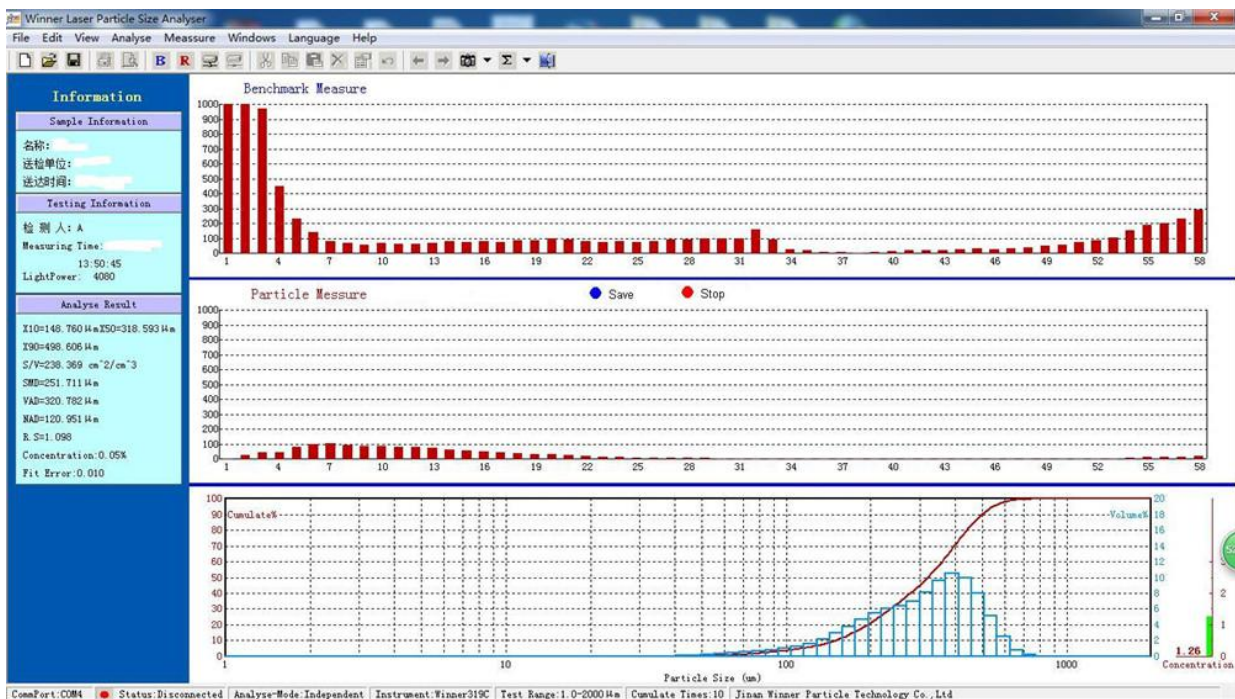
Energy Spectrum Test View

Test Report and Its Description:

Sample Information

|		
Nozzle Name:30um	Style:	Category:
Delivery Co.:	Delivery Date:2016-5-11	Remark:

Testing Information

Instrument:Winner319C	Test Range:1.0~2000	Environment:
Medium:5	Spray Object:	Flux of liquid:1.52
Hydraulic Pressure:0	Spray Angle:1.33	Testing Interval:3
Sampling Number:2	Repeats:	Dist. Between Emission and Receive:
Dist. between nozzle and laser:.01	Dist. Between Nozzle and Instrument:	Dist. Between Sample and Spray:
Measuring Man:A	Measuring Time:2016~05-11	Remark:

Analyse Result (Analyse-Mode:Independent)

V10=20.748 μm	V50=30.612 μm	V90=43.171 μm	VAD=31.465 μm
N10=16.119 μm	N50=23.488 μm	N90=34.837 μm	NAD=24.592 μm
R.S=0.732	N/V=0.767	SMD=29.024 μm	
Fit Error:0.012	Optics Concentration:1.5	Concentration:0.01%	

(V: cumulative volume distribution, N: cumulative number distribution)
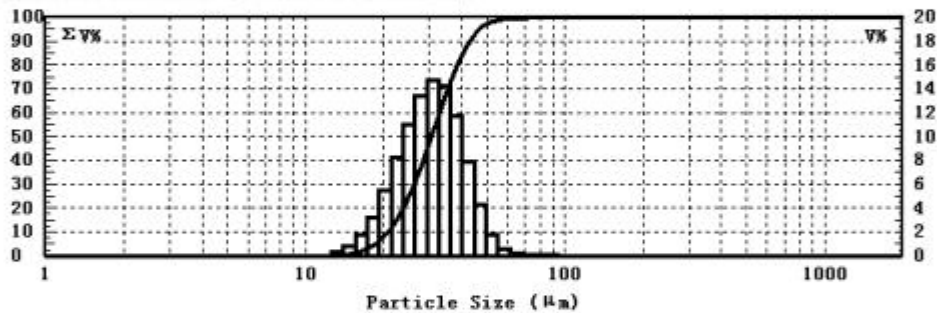
d(μm)	V%	ΣV%	d(μm)	V%	ΣV%	d(μm)	V%	ΣV%
12.599	0.000	0.000	26.380	10.976	30.766	55.234	1.805	98.853
14.002	0.325	0.325	29.317	13.390	44.156	61.384	0.588	99.441
15.561	0.839	1.164	32.582	14.735	58.891	68.219	0.201	99.642
17.294	1.707	2.872	36.209	14.248	73.139	75.815	0.135	99.777
19.219	3.235	6.107	40.241	11.685	84.824	84.256	0.121	99.898
21.359	5.450	11.557	44.721	7.915	92.739	93.637	0.102	100.000
23.737	8.233	19.790	49.701	4.309	97.048	104.063	0.000	100.000

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

Laser Particle Size Analyzer- Since 1985

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.