

SIZERTM -3001ST

Laser Particle Size Analyzer



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

SIZER-3001ST is a fully automated wet dispersion particle size analyzer with smart operation system. Using DLOS with automated analysis procedure, SIZER-3001ST provides stable and reliable testing results with minimum user intervention. The compact footprint saves valuable work space for factories and laboratories.

►► Features/Benefits:

- Dual lenses optical system (DLOS)
- Standard Operation Procedure (SOP)

Size range:	0.1-1000μm
Accuracy:	≤1% (GBRM D50)
Repeatability:	≤1% (GBRM D50)
Detector:	86 pieces (forward, lateral, backward)

►► Applications/Materials:

- Chemicals, paints, inks and coatings
- Pharmaceutical development
- Mining and minerals, metal powders
- Fuel cell, electronics
- Oil and petrochemicals, coal industry
- Food and drink
- Cement, ceramic, soil science, agrochemical analysis, plastic and polymers

►► Intelligent Particle Sizing Performance

SIZER-3001ST has outstanding accuracy and good reliability, good repeatability, easy operating, compact body and fast test speed.

1. Accuracy: ≤ 1% (GBRM D50)

The accuracy of SIZER-3001ST as verified by measurements of standard samples

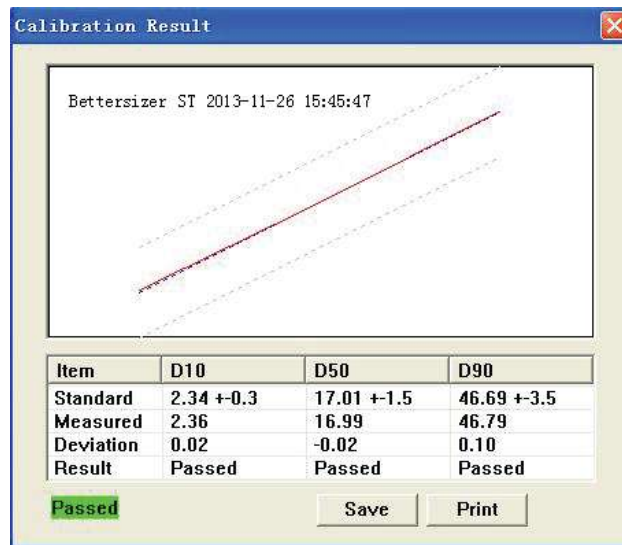
Letter of Notice for Ability Verification Plan Results

Lab Name: Multiplexlabs Turnkey laboratories Solutions

Test Item	Sample	Lab Result (μm)	Designated Value (μm)	Deviation Percentage(%)	Result Evaluation
Mean Diameter D _{mean}	2012FT-A1	13.55	14.06	-3.6	Satisfied
	2012FT-A1	12.26	12.55	-2.3	Satisfied
Mean Diameter D ₅₀	2012FT-A1	13.49	14.04	-4.1	Satisfied
	2012FT-A1	12.27	12.54	-2.2	Satisfied

Note: if absolute value of deviation percentage is less than or equal to 10%, it is satisfied result; if absolute value is more than 10%, it is unsatisfied result.

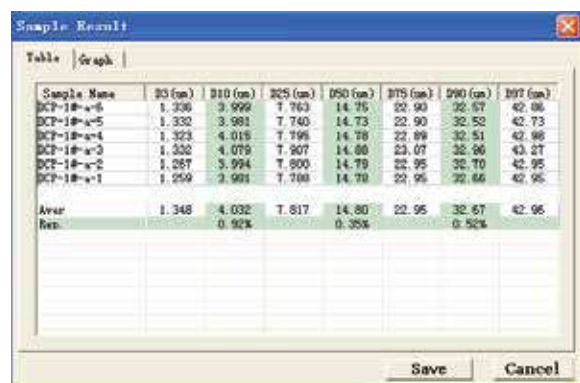
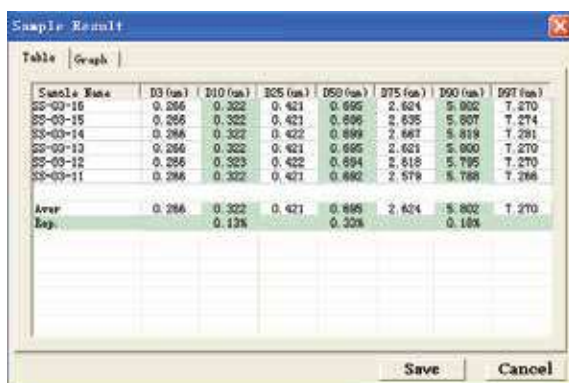
a) Use standard sample to verify accuracy



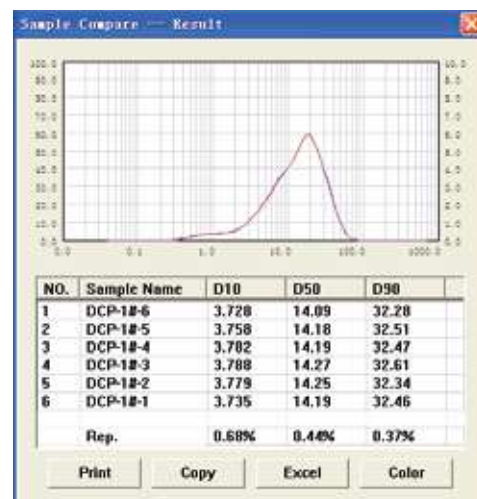
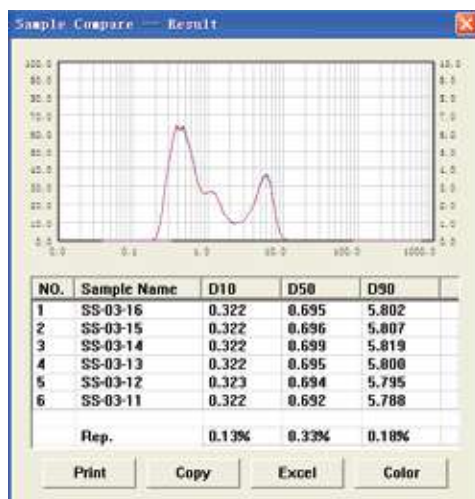
2. Repeatability: $\leq 1\%$ (GBRM D50)

SIZER-3001ST measures samples with a distribution range of 0.1-1000 μ m. The results under same analysis conditions yield good repeatability as shown in the following graph.

a) Repeatability of a serial test of same sample



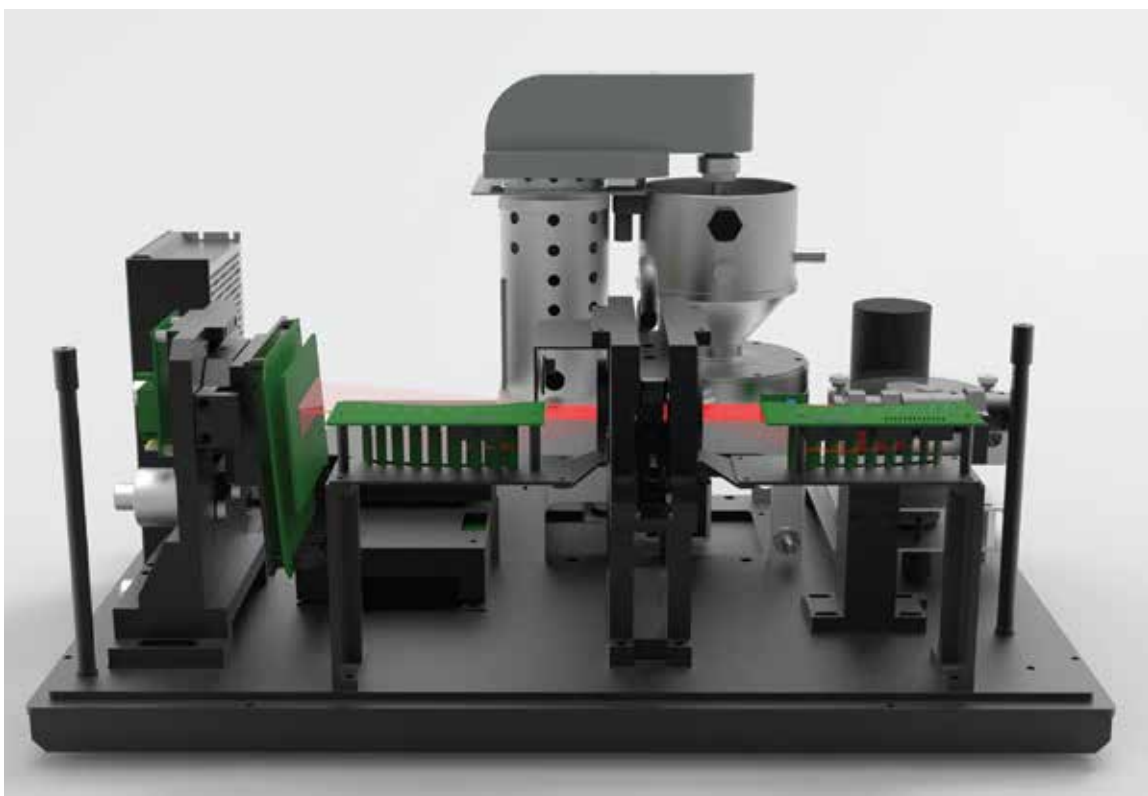
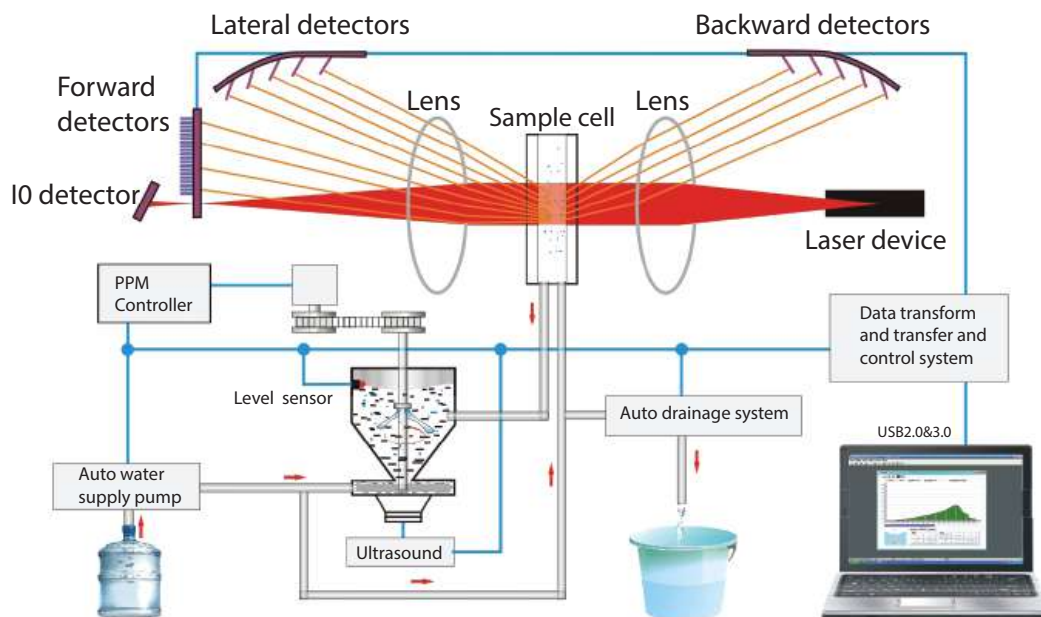
b) Repeatability of re-sampling tests



►► Technology for Reliable Measurement

1. Dual Lenses Optical System (DLOS)

DLOS is a patented technology of ATL. It integrates forward, sideway and backward scattering to double the detection of scattering lights. Compared with single lens system, DLOS improves resolution and measuring accuracy; compared with dual beam system, DLOS provides more reliable results through a consistent wavelength and continuity of a single laser source.

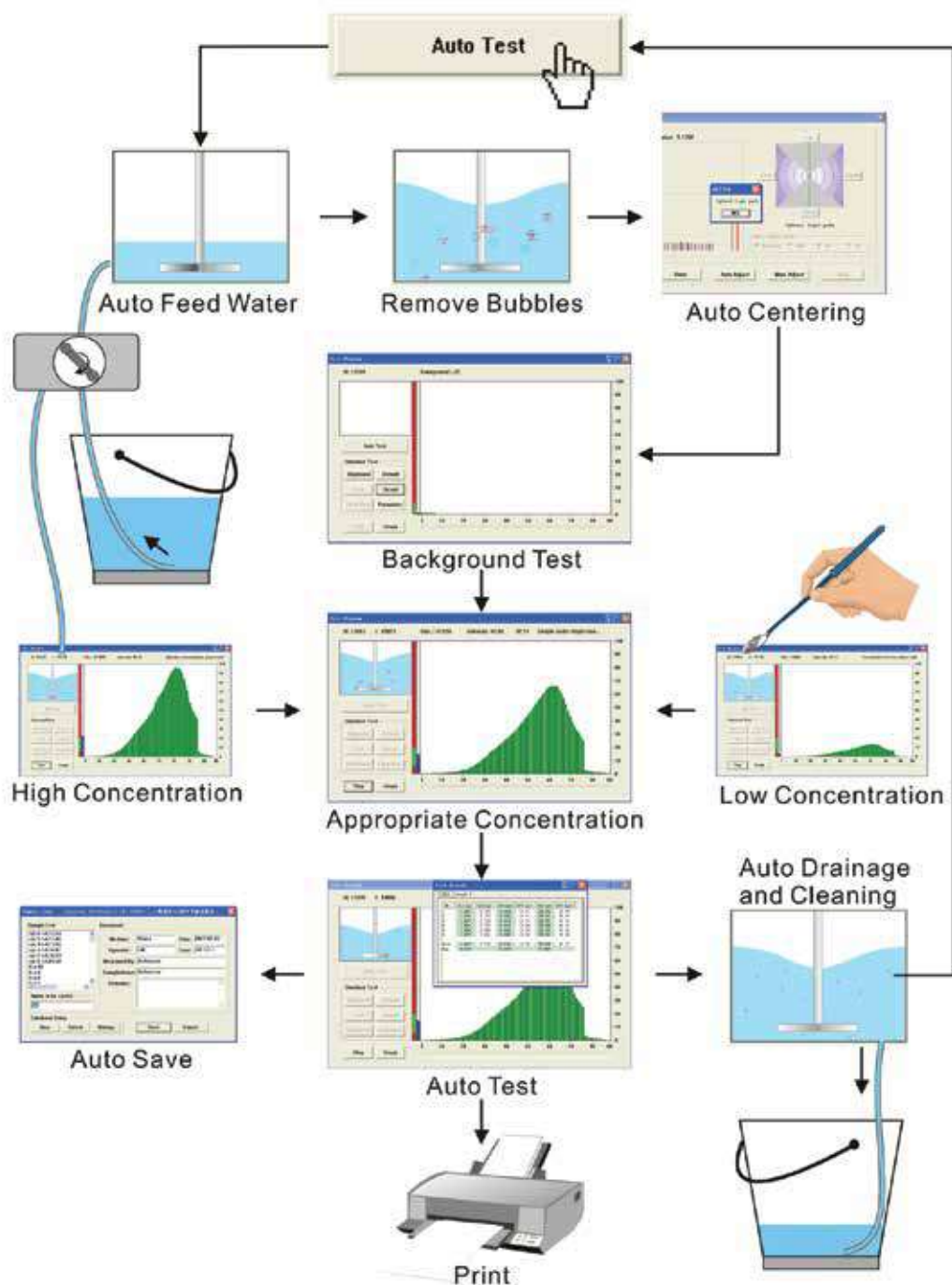


2. Standard Operation Procedure (SOP)

Analysis by one mouse click:

SOP of SIZER-3001ST provides an intuitive solution for standardized and automatic testing. Click once on the auto test button, the testing procedure will run by itself, including water intake, bubble removal, background and obscuration measurement, testing, rinsing, and result save and print. Just add sample and the automatic analysis procedure is just one mouse click away.

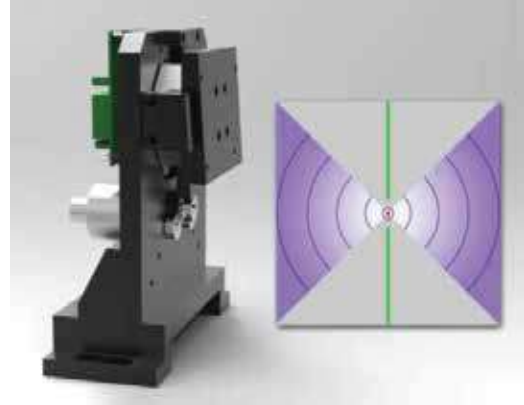
SOP not only provides a simplified procedure but also avoids human operation error; therefore, it ensures the repeatability and accuracy of testing results.



3. Automatic Centering

Guarantee the perfect condition of optical system:

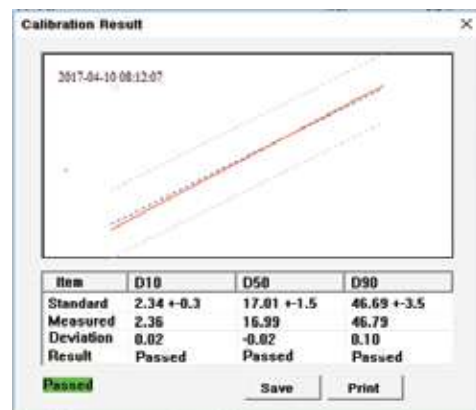
By moving the laser detector center point to the focus point of lens before each test, automatic centering function guarantees the perfect condition of optical system, therefore, provides accurate and repeatable testing results.



4. Accuracy Calibration

Maintain accurate datum lifetime

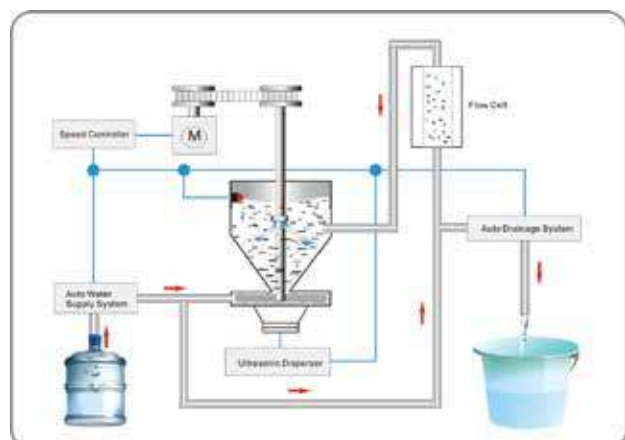
This function makes operate parameters maintained at consistent conditions, producing consistent and reproducible measurement across the board for all old and new instruments alike.



5. Automatic Circulation and Dispersion System:

Revealing the true form of every particle through the laser

The circulation and dispersion system ensures a complete sample dispersion hence make sure that each particle would be accounted for through the laser system.



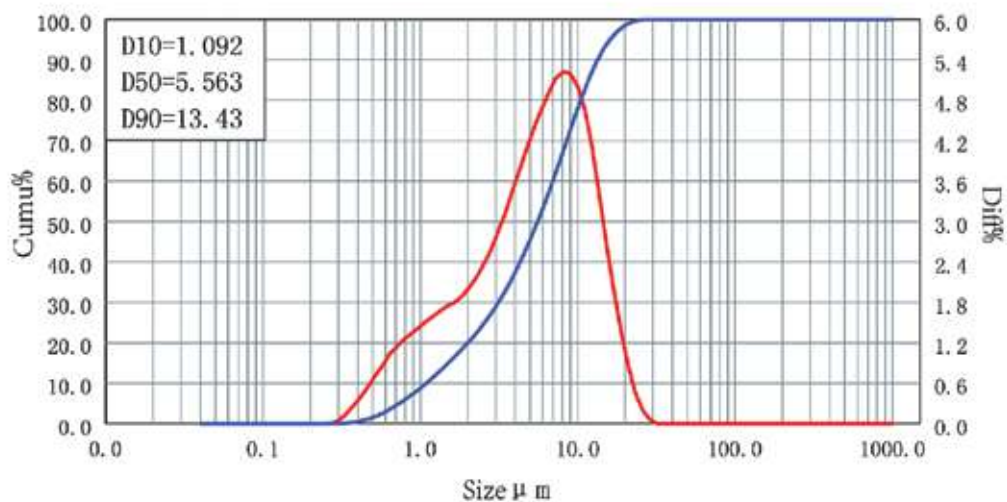
►► Example of Report

SIZER-3001ST laser particle size analyzer Particle size analysis report

Range: 0.1um - 1000um

Sample:	Sample 1#					Sample Owner: ATL					
Medium:	Water					Measured by: ATL					
Particle RI:	1.596+0.100i		Optical:	Mie		Operator:	LM				
Medium RI:	1.333		Mode:	7.23 - 1		Date:	2017-01-18		Time:	13:44:47	
Remark:	(1:3.00)-0-(0:3)								Distribution: Volume		
D50:	5.563	um	D[4,3]:	6.542	um	D[3,2]:	2.791	um	OBS:	12.37	%
SPAN:	2.218		D[2,1]:	1.095	um	SSA:	0.795	m^2/kg	Residual:	0.418	%
D03=0.606	um		D06=0.804	um		D10=1.092	um		D16=1.602	um	
D50=5.563	um		D75=9.430	um		D84=11.48	um		D90=13.43	um	

Diam um	Diff%	Cumu%	Diam um	Diff%	Cumu%	Diam um	Diff%	Cumu%	Diam um	Diff%	Cumu%
0.000-0.100	0.00	0.00	0.923-1.026	1.42	9.13	9.484-10.54	5.00	80.29	97.38-108.2	0.00	100.00
0.100-0.111	0.00	0.00	1.026-1.141	1.51	10.64	10.54-11.72	4.65	84.94	108.2-120.3	0.00	100.00
0.111-0.123	0.00	0.00	1.141-1.268	1.59	12.23	11.72-13.02	4.10	89.04	120.3-133.7	0.00	100.00
0.123-0.137	0.00	0.00	1.268-1.410	1.67	13.90	13.02-14.48	3.38	92.42	133.7-148.7	0.00	100.00
0.137-0.152	0.00	0.00	1.410-1.568	1.75	15.65	14.48-16.10	2.66	95.08	148.7-165.3	0.00	100.00
0.152-0.169	0.00	0.00	1.568-1.743	1.80	17.45	16.10-17.90	1.98	97.06	165.3-183.8	0.00	100.00
0.169-0.188	0.00	0.00	1.743-1.938	1.89	19.34	17.90-19.89	1.37	98.43	183.8-204.3	0.00	100.00
0.188-0.209	0.00	0.00	1.938-2.154	2.02	21.36	19.89-22.12	0.87	99.30	204.3-227.1	0.00	100.00
0.209-0.233	0.00	0.00	2.154-2.395	2.17	23.53	22.12-24.59	0.45	99.75	227.1-252.5	0.00	100.00
0.233-0.259	0.00	0.00	2.395-2.662	2.36	25.89	24.59-27.33	0.19	99.94	252.5-280.7	0.00	100.00
0.259-0.288	0.01	0.01	2.662-2.959	2.57	28.46	27.33-30.39	0.06	100.00	280.7-312.0	0.00	100.00
0.288-0.320	0.05	0.06	2.959-3.290	2.84	31.30	30.39-33.78	0.00	100.00	312.0-346.9	0.00	100.00
0.320-0.356	0.14	0.20	3.290-3.657	3.13	34.43	33.78-37.55	0.00	100.00	346.9-385.6	0.00	100.00
0.356-0.396	0.26	0.46	3.657-4.066	3.47	37.90	37.55-41.75	0.00	100.00	385.6-428.7	0.00	100.00
0.396-0.440	0.39	0.85	4.066-4.520	3.78	41.68	41.75-46.41	0.00	100.00	428.7-476.6	0.00	100.00
0.440-0.489	0.54	1.39	4.520-5.025	4.10	45.78	46.41-51.59	0.00	100.00	476.6-529.8	0.00	100.00
0.489-0.544	0.71	2.10	5.025-5.586	4.40	50.18	51.59-57.36	0.00	100.00	529.8-588.9	0.00	100.00
0.544-0.604	0.86	2.96	5.586-6.210	4.66	54.84	57.36-63.76	0.00	100.00	588.9-654.7	0.00	100.00
0.604-0.672	1.03	3.99	6.210-6.903	4.91	59.75	63.76-70.88	0.00	100.00	654.7-727.8	0.00	100.00
0.672-0.747	1.14	5.13	6.903-7.674	5.12	64.87	70.88-78.80	0.00	100.00	727.8-809.1	0.00	100.00
0.747-0.830	1.25	6.38	7.674-8.531	5.22	70.09	78.80-87.60	0.00	100.00	809.1-899.5	0.00	100.00
0.830-0.923	1.33	7.71	8.531-9.484	5.20	75.29	87.60-97.38	0.00	100.00	899.5-1000	0.00	100.00



Diam um	Percent
0.100	0.00
0.200	0.00
0.500	1.53
1.000	8.77
2.000	19.92
5.000	45.57
10.00	77.73
20.00	98.47
45.00	100.00
75.00	100.00

►► Specifications

Testing parameter	Material
Particle size distribution	Suspension, emulsion, dry powder
General	SIZER-3001ST
Theory	Laser diffraction
Analysis theory	Mie and Fraunhofer
Testing speed	3kHz
Typical measurement time	≤10second
Size	
Size range	0.1-1000μm
Number of size classes	More than 100 customized grades
Accuracy	≤1% (GBRM D50)
Repeatability	≤1% (GBRM D50)
Resolution ratio	Single peak, double peak, multi-peak
Optics	
Red light source	Max. 3mW, Semiconductor optical fiber laser, 635nm
Lens arrangement	Single lens
Lens design	F-Theta Lenses
Effective focal length	300mm
Detector	
Arrangement	Log-spaced array
Quantity	86 pieces (forward, lateral, backward)
Light path adjustment	Intelligent automatic alignment
Sample dispersion system	
Dispersion type	Wet
Dispersion system	Ultrasound 50W, 38KHz dry-burn protection system
Water circulation	Centrifugal pump, 3000 -8000ml/min, auto water intake and rinsing
Water capacity	600ml
Software	
21 CFR Part 11	Enable
SOP Designer	Enable
Report	More than 14 formats report
Auto test	Enable
Data export	EXCEL, PDF, WORD, JPG and etc.

System compliance	
Laser class	Class I laser product
System	
Supply voltage	220VAC
Dimension	640mm x 420mm x320mm (L x W x H)
Weight	23kg
Computer specification	
Computer interface	At least a USB2.0 port required
Operation system	Windows XP, Windows 7,8 or 10
Hardware specification	Intel Core I5, 4GB RAM, 250GB HD

Regulatory compliances



Corporate Social Responsibility

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Analytical
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2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

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Analytical®

Technologies Limited

HPLC Solutions MultipleLabs Analytical Bio-Med Analytical Distributors Analytical Foundation (Trust)

Corporate & Regd. Office:
Analytical House, # E67 & E68,
Ravi Park, Vasna Road, Baroda,
Gujarat 390 015. INDIA

T: +91 265 2253620
+91 265 2252839
+91 265 2252370
F: +91 265 2254395

E: info@hplctechnologies.com
info@multiplelabs.com
info@analyticalgroup.net
info@analyticalbiomed.com

W. www.analyticalgroup.net
www.hplctechnologies.com
www.multiplelabs.com
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