

# **SIZER - 3035**

## **LASER DIFFRACTION PARTICLE SIZE ANALYZER**



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

**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

## ►► Applications and Industries

### Industries

Soils & Sediments



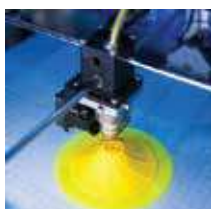
Ceramics



Abrasives



3D Printing Materials



Food & Beverages



### Samples

Stones, clay, gravel, marine sediments, lunar surface, etc.

Silica, quartz, flint, silicates, alumina, etc.

Calcite, emery, pumice, sandstone, garnet, borazon, etc.

Polylactic acid (PLA), Acrylonitrile butadiene styrene (ABS), bronze, nickel, alloy, etc.

Sugar, chocolate, flour, additives, etc.

### Significance

Particle size and shape are two fundamental properties of any sediment or soil that can provide important clues to its nature and origin. The Bettersizer S3 Plus offers accurate and reliable particle size and shape information in the range 0.01-3500  $\mu\text{m}$  for various sample types including soils, marine sediments and even lunar samples returned from space missions.

The particle size distributions of raw ceramic materials significantly impact the final product's surface smoothness, shapes, degree of agglomeration and dimensional stability. The dual camera optical system in Bettersizer S3 Plus effectively captures the images of agglomerated oversized particles during R&D processes.

Optimizing particle size and size distribution in abrasive materials maximize final products' performances while minimizing material waste. Monitoring particle size and identifying agglomerations in raw material could be achieved via the dynamic image analysis technology in Bettersizer S3 Plus.

The flow property, surface roughness, and quality of 3D printed products greatly depend on its raw material's particle size and size distribution. The Bettersizer S3 Plus helps optimize particle size distribution, thereby controlling the final product's quality.

Many important characteristics of food products, namely taste, dissolution, and extraction behavior, are affected by particle sizes and shapes of raw materials. Equipped with dynamic image analysis technology, the Bettersizer S3 Plus is an ideal particle analyzer in the food and beverage industry.

## Industries

### Battery & Energy



## Samples

Graphite, cobalt, manganese, etc.

## Significance

It is crucial to utilize the Bettersizer S3 Plus to measure and control the particle sizes and morphological properties of raw materials in the battery industry because they account for central battery performances, including energy storage, stability, and life cycle.

### Paints, Inks, & Coatings



Epoxies, polyurethanes, silicon, zinc-rich primers, etc.

Storage time, color consistency, flowability, and stability of pigment-based inks resulted from proper controls in the pigment particle shape, size, and size distribution. The Bettersizer S3 Plus characterizes these pigment properties, maximizing final product performances.

### Pharmaceuticals



Cefixime, gliclazide, glimepiride, paclitaxel, etc.

The Bettersizer S3 Plus is extremely helpful in industries where quality control standards are exacting, namely the pharmaceutical industry. The particle size and size distributions of both active and inactive ingredients significantly impact drugs' dissolution, body absorption, efficacy, and safety.

### Building Materials



Cement, asphalt, sands, wood, synthetic polymers, etc.

The hardening rate, strength, and fluidity of concrete are greatly affected by the particle size distribution of cement. The Bettersizer S3 Plus provides accurate, repeatable, and reliable measurements of cement size and size distribution, increasing the efficiency in the concrete manufacturing process.

### Powder Metallurgy



Steel, tin, nickel, copper, aluminum, etc.

The production rates of final powdered particles at the end of the powder metallurgy process are influenced by grains' size and size distribution. Using the Bettersizer S3 Plus to monitor final products' size greatly improves the production efficiency.

## ►► Features & Benefits

- Measures ultrafine particles accurately with the large angular range (0.02 - 165°) with 96 detectors
- Robust optical system with superior resolution using the dual lenses design
- Single short-wave laser system (532 nm) delivers a continuous scattering spectrum with a consistent wavelength
- Zero stabilization and preheating time needed with solid-state light source
- DLOI System - precisely measures ultrafine particles down to 0.01 µm
- Dual-camera Imaging System - efficiently detects oversized particles up to 3,500 µm
- 2-in-1 System - simultaneously obtains particle size and shape results
- Fast time-to-result - rapidly generates results in 10 seconds
- 0.5x and 10x cameras - photograph extremely wide size range of particles
- High speed strobe lights - capture up to 10,000 particle images in 60 seconds, offering authentic shape results
- Suitable for measuring heterogeneous samples with unknown optical properties

## ►► Specification

Parameter Measured	
Particle size distribution	Suspension, emulsion, dry powders
Particle shape	
General	
Principle	Laser diffraction and dynamic image technologies
Analysis	Mie scattering theory and Fraunhofer diffraction theory
Typical measurement time	Less than 10 seconds
Measurement Performance	
Measuring range	0.01 - 3500 μm (Laser System) 2 - 3500 μm (Image System)
Accuracy	<0.5% (NIST certified standards)
Repeatability	<0.5% (NIST certified standards)
Number of size classes	≤100 (adjustable)
Feeding mode	Automatic circulation or semi-automatic circulation
Special functions	Refractive index measurement, SOP settings
Image recognition	Up to 120 fps, up to 10,000 particles per min
Main Device	
Optical system	Patented DLOI (Dual Lenses & Oblique Incidence) SystemLaser Polarized light-pumped solid-state laser (10 mW / 532 nm)
Laser class	Class 1 laser product
Detector	96 detectors (forward, lateral and backward arrangements)
Measuring angle	0.02 - 165°
CCD cameras	0.5x and 10x*
Image analysis	1.2 megapixels
Dispersion Module	
Circulation speed	300 - 2500 r/min
Circulation flow rate	3000 - 8000 mL/min
Untrasonication	Dry run protection, Max 50 W (adjustable)
Circulation tank capacity	600 mL
Software	
Conformity	21 CFR Part 11, ISO 13320, ISO 13322, USP <429>, CE
Report	Customizable reporting
System Parameters	
Dimensions (L x W x H)	820 × 610 × 290 mm
Weight	48 kg
Voltage	DC 24 V, 50 / 60 Hz, 20 W
Computer Configuration (Recommended)	
Computer interface	At least one high-speed USB 2.0 or USB 3.0 port required
Operating system	Windows 7 / Windows 10
Hardware specification	Intel Core i7, 8GB RAM, 500GB HD, two PCI-E X16 interfaces

## HPLC Servicing, Validation, Trainings and Preventive Maintenance :

**HPLC Servicing** :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

**Trainings** :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

**AMC's/CMC** :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

**Validations** :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

**Instruments** :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



## About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

## Our Products & Technologies



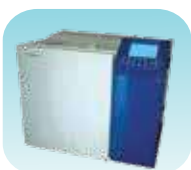
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Optima Gas  
Chromatograph  
3007



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Atomic Absorption  
Spectrophotometer



Liquid Particle  
Counter



Optical Emission  
Spectrophotometer



DSC/TGA



Semi Auto Bio  
Chemistry Analyzer



HEMA 2062  
Hematology  
Analyzer



Micro Plate  
Reader/Washer



URINOVA 2800  
Urine Analyzer



Total Organic  
Carbon 3800



Fully Automated  
CLIA



NOVA-2100  
Chemistry Analyzer



PCR/Gradient PCR/  
RTPCR



TOC  
Analyzer



Laser Particle  
Size Analyzer



Ion Chromatograph



Water purification  
system



## Regulatory compliances



## Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



# Analytical Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [Info@analyticalfoundation.org](mailto:Info@analyticalfoundation.org)

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

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.



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

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