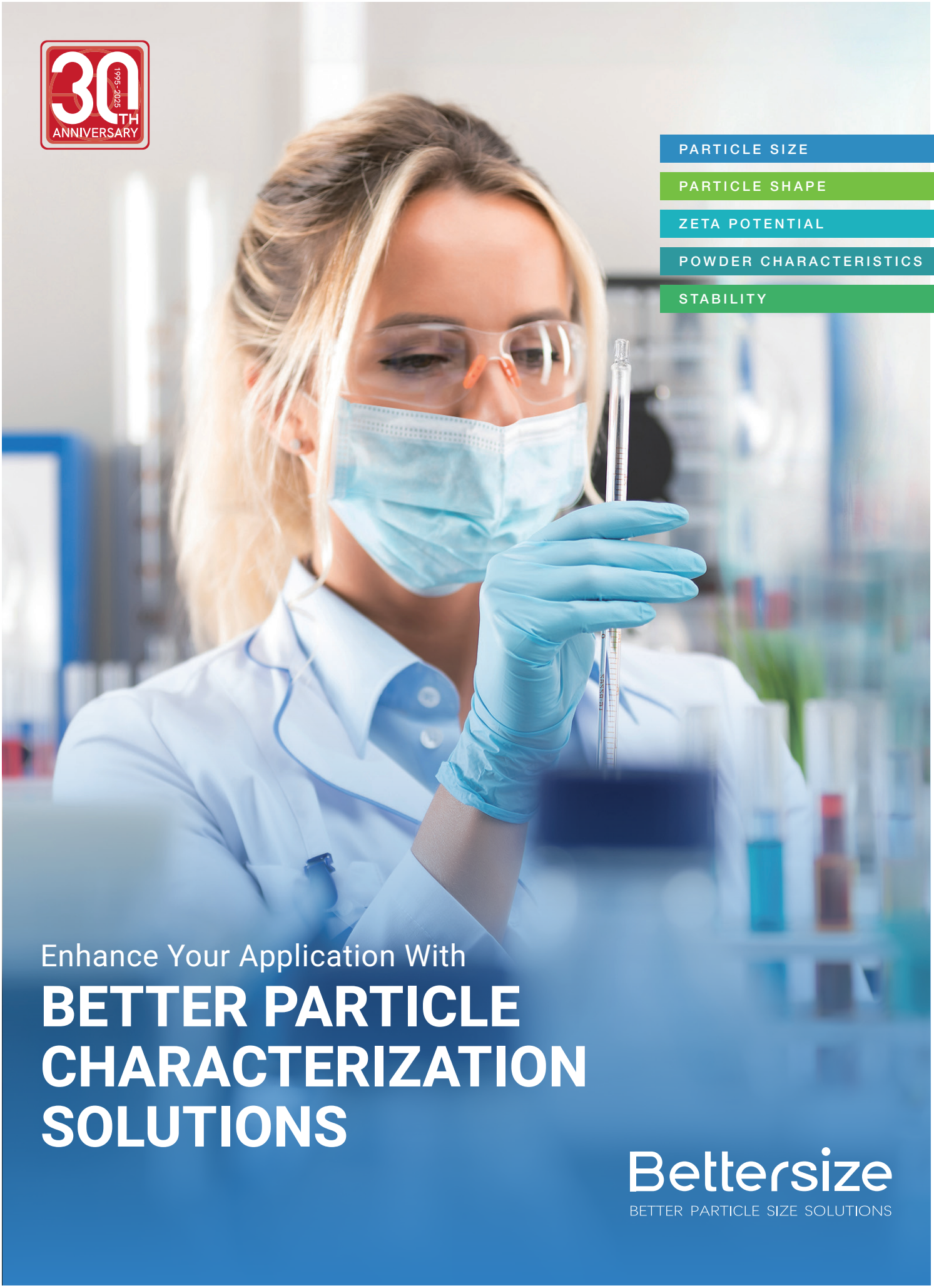

30TH ANNIVERSARY
1995 - 2025
PARTICLE SIZE
PARTICLE SHAPE
ZETA POTENTIAL
POWDER CHARACTERISTICS
STABILITY
Enhance Your Application With
BETTER PARTICLE CHARACTERIZATION SOLUTIONS
Bettersize
BETTER PARTICLE SIZE SOLUTIONS

About Us

No.1
Market Share in China

106
Patents

43
Global Labs

22K+
Organizations Using Bettersize's Technology

30
Years in Business

15%
Revenue Dedicated to R&D

92
Countries Covered

95%
In-house Production for Strict Quality Control

Founded in 1995, Bettersize has emerged as China's leading player in the particle sizing business. Over the years, Bettersize has gained significant global recognition, offering a wide range of products, from basic to advanced research equipment, providing precise analysis of materials ranging from nanometers to millimeters.

At Bettersize, our mission is to provide best-in-class instruments, comprehensive solutions, and exceptional customer service. We are dedicated to assisting scientists, researchers, and engineers worldwide in understanding material properties, facilitating research, improving production efficiency, and beyond.

Bettersize instruments and services are trusted by tens of thousands of customers worldwide, from fast-growing startups to global enterprises, and from distinguished universities to leading research centers.

Bettersize is here to offer you better particle characterization solutions, and more.

Material Characterization Solutions for You

Bettersize provides an extensive range of instruments utilized by leading industrial and research laboratories to analysis of particle size distribution, particle shape, zeta potential, powder characteristics, and physical stability.

Measuring Range*	0.1 nm	1 nm	10 nm	100 nm	1 μm	10 μm	100 μm	1 mm	3.5 mm	10 mm
Laser Diffraction			Bettersizer S3 Plus: 0.01 μm to 3500 μm							
			Bettersizer 2600: 0.02 μm to 3500 μm							
				Bettersizer ST: 0.1 μm to 1000 μm						
Dynamic Light Scattering		BeNano Series: 0.3 nm to 15 μm								
Image Analysis				BeVision Series: 0.1 μm to 13 mm						
Static Multiple Light Scattering			BeScan Lab: 0.01 μm to 1000 μm							

*The measuring range depends on the sample

Applications and Industries

Below are typical applications where our solutions have been successfully employed:

- Abrasives
- Agrochemicals
- Batteries & Fuel Cells
- Cement
- Ceramics
- Chemicals
- Coal
- Cosmetics
- Electronics
- Food & Beverages
- Life Sciences
- Mining & Minerals
- Oil & Petrochemicals
- Paints, Inks & Coatings
- Pharmaceuticals
- Plastics & Polymers
- Soils & Sediments
- Toners
- Universities & Academia
- 3D Printing

For more information about the applications and industries

Compliance

All series of Bettersize instruments are in compliance with **ISO9001** and **CE certification**. The software complies with **U.S. FDA 21 CFR Part 11**, ensuring the validity and reliability of measurement results and meeting traceability requirements.


CERTIFICATE OF CONFORMITY OF QUALITY MANAGEMENT SYSTEM


CERTIFICATE of Compliance


U.S. FOOD & DRUG ADMINISTRATION

Certified Service and Support

We provide exceptional customer care throughout your product's lifecycle, including:

- **3-Year Warranty** for reliable performance.
- **Expert Support:** Installations, training, workshops, and troubleshooting.
- **Maintenance & Upgrades:** Preventive care, hardware and software updates, and repair services.
- **24/7 Emergency Service** for critical assistance.

Discover more: bettersizeinstruments.com/services.

BeNano Series

Be the Nanoparticle Expert You Need

Characterizing nanoparticles requires precision measurement of parameters such as particle size, zeta potential, molecular weight and rheological properties. The BeNano Series, equipped with the most advanced technologies, provides rapid and accurate analysis of these crucial properties, empowering you to become the expert you need to be.

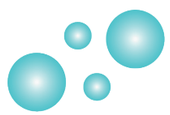
Features

- 671 nm solid-state laser with 50 mW output power
- APD (Avalanche Photodiode) detector providing exceptional sensitivity
- Automatic adjustment of laser intensity based on the samples scattering ability
- Intelligent result evaluation algorithm that minimizes interference from impurities

Benefits

- Measures **nano-sized samples down to 0.3 nm across a wide concentration range up to 40%** with DLS backscattering (173°) detection technology
- **A minimum sample volume of 3 µL** saves valuable samples with the capillary sizing cell
- Achieves robust and consistent data for **samples with low electrophoretic mobility** utilizing PALS (Phase Analysis Light Scattering) technology
- Performs rapid and precise **tests under different temperatures** with the programmable temperature control system

Parameters and Technologies

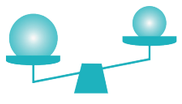


Particle Size

Dynamic Light Scattering (DLS)

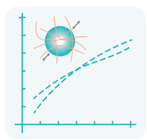
Zeta Potential

Electrophoretic Light Scattering (ELS)



Molecular Weight

Static Light Scattering (SLS)



Rheological Properties

DLS Microrheology

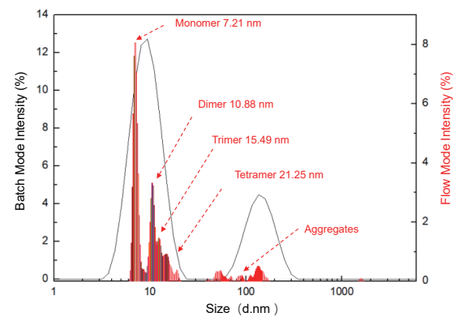
Measurable Parameters

- Hydrodynamic diameter D_H
- Polydispersity index **PDI**
- Intensity, volume, area and number distributions
- Diffusion coefficient **D**
- Zeta potential and its distribution
- Second virial coefficient A_2
- Isoelectric point **IEP**
- Molecular weight **Mw**
- Viscoelastic modulus **G', G"**

DLS Flow Mode

By integrating DLS with SEC/GPC or FFF, BeNano DLS flow mode delivers high-resolution size distribution data, surpassing traditional batch mode DLS.

- Algorithm-free volume and number distributions
- Enhanced characterization with complementary size, refractive index, and UV analysis
- 27 µL low-volume flow cell minimizes band broadening



Flow mode offers superior resolution for characterizing BSA in terms of size and distribution compared to batch mode

BAT-1 Autotitrator

The BAT-1 autotitrator is an ideal accessory for the BeNano Series, enabling automatic analysis of zeta potential as a function of pH and determination of the isoelectric point (IEP) of a colloidal system.

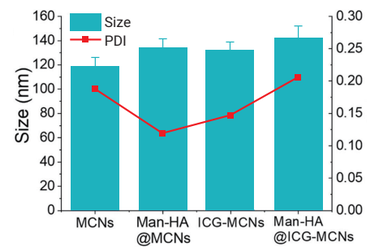
- Auto-selects titrants based on initial and target pH
- Completes measurements more rapidly
- Equipped with high-precision titration pumps

The BAT-1 equipped with optional degasser, to prevent bubble formation, enables automated measurements

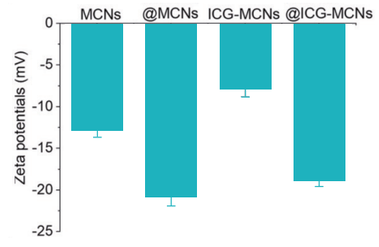
Application Example

Characterizing multifunctional nanocomposites to investigate effectiveness for tumor treatment.

Adapted from Gao, S., Liu, Y., Liu, Zhang, M., & Shi, K. (2022). *Journal of Controlled Release*, *341*, 383-398.



The sizes and PDIs of MCNs (mesoporous calcium silicate nanocomposites)



The zeta potentials of MCNs (mesoporous calcium silicate nanocomposites)

Specifications

Parameter	BeNano Series*
DLS Size Range	0.3 nm - 15 µm
Detecting Angle	173°, 90°, 12°
Electrophoretic Mobility with ELS	> ± 20 µm·cm/V·s
Automated Control	Temperature, pH
Laser Safety	Class 1
Compliance	21 CFR Part 11, ISO 13321, ISO 22412, ISO 13099

For more information about the BeNano

*Depending on the model selected.

Bettersizer S3 Plus

Strive for Excellence in All You See

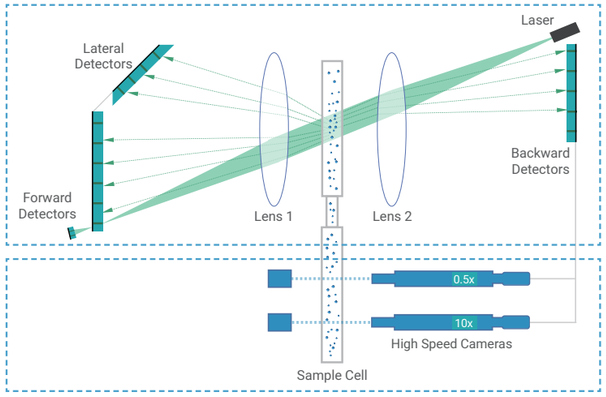
The Bettersizer S3 Plus integrates laser diffraction and dynamic image analysis into a single instrument, capable of measuring particle size and shape from 0.01 µm to 3500 µm. Its unparalleled sensitivity to both ultrafine and oversized particles, combined with exceptional resolution, makes it the ultimate size and shape analyzer for passionate researchers pursuing cutting-edge scientific research.

Features

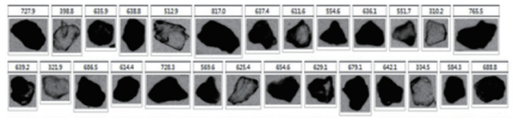
- Integration of laser diffraction and dynamic image analysis in one instrument
- Patented DLOI (Dual Lenses & Oblique Incidence) system
- Advanced dual-camera imaging technology
- Capable of Refractive Index measurement

Benefits

- Simultaneously provides **size and shape results**
- Precisely measures **ultrafine particles down to 0.01 µm** using the DLOI system
- Displays **real-time particle images** with the dual-camera imaging system
- Detects **oversized particles up to 3500 µm**
- Determines the **refractive index** of unknown samples, enhancing measurement reliability



Optical System of the Bettersizer S3 Plus



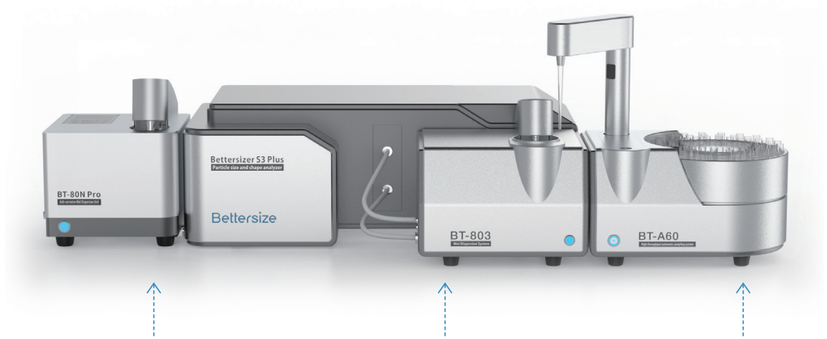
Particle images taken by the Bettersizer S3 Plus

Patented DLOI System

- Accurately measures ultrafine particles with a large angular range (0.02 - 165°) using 96 detectors
- Features a robust optical system with superior resolution, through the dual lenses design
- Utilizes a single-laser system (532 nm) that provides a continuous scattering spectrum with a consistent wavelength

Dual-Camera Imaging System

- Displays images of individual particles and provides authentic number-based distributions
- Ideal for samples with extremely wide size distributions, identifying particles up to 3500 µm
- Perfect for measuring heterogeneous samples with unknown optical properties



Dispersion Module	BT-80N Pro	BT-803
Liquid Volume	80 - 200 mL	600 mL
Automation	Fully automated	Fully automated
Compatibility	Organic medium	Aqueous medium

Autosampler	BT-A60
Sample	Dry powder or suspension
Sample Capacity	60 samples
Sampling Volume	0.5 mL- 5 mL

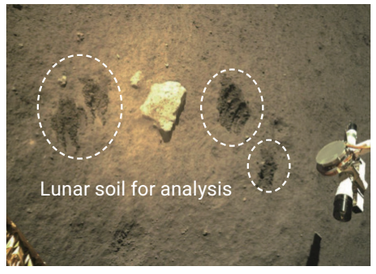
Autosampler BT-A60

Features & Benefits

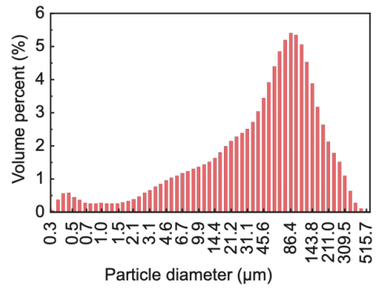
- **Handles up to 60 samples in one click**
  Reduces labor cost
- **Measurement automation**
  Ensures higher productivity
- **Accurate sample identification**
  Identifies samples by scanning barcodes
- **Handles both wet or dry samples**
  Capable of dispersing dry samples as well as slurries
- **Efficient ultrasonic cleaning**
  Prevents sample cross-contamination

Application Example

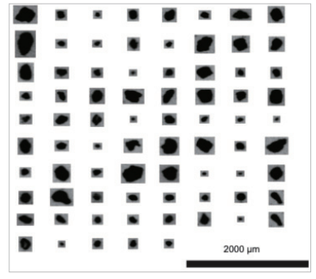
Analyzing the Particle Shape and Size Distribution of Lunar Soil Samples



Lunar soil analyzed by the Bettersizer S3 Plus



Volume frequency size distribution



Images of individual particles

Adapted from Zhang, H., Zhang, X., Zhang, G., Dong, K., Gao, X., Yang, M. (2022). *Science China Physics, Mechanics & Astronomy, 65(2)*, 1-8.

Specifications

Parameter	Bettersizer S3 Plus
Size Range (Laser System)	0.01 – 3500 µm
Size Range (Image System)	2 – 3500 µm
Optical System	DLOI system and dual-camera system
Laser Safety	Class 1
Compliance	21 CFR Part 11, ISO 13320, ISO 13322-2, USP<429>, CE

For more information about the Bettersizer S3 Plus

Bettersizer 2600

Better Particle Sizing for Every Need

The Bettersizer 2600 utilizes proven laser diffraction technology to measure particle sizes, across a range from 0.02 - 2600 µm. With its dynamic imaging module, it combines laser and imaging tests, extending the measurement range up to 3500 µm and allowing for comprehensive particle size and shape analysis. The versatile dispersion system modules cater to a wide array of testing needs, accommodating both dry and wet dispersion methods to meet diverse testing requirements.

Features

- Seamless transition between wet and dry dispersion units
- Patented laser diffraction technologies ensure precise sizing
- Modular dual-camera imaging system for detailed shape analysis
- Integration of laser diffraction and dynamic imaging techniques
- Capable of measuring Refractive Index (RI)

Benefits

- Covers a wide particle size range from 0.02 to 3500 µm
- Provides comprehensive insights through size and shape analysis
- Displays real-time particle sizes and images
- Offers user-friendly operation
- Determines the Refractive Index of unknown samples

Autosampler

Parameter	BT-A60
Sample	Dry powder or suspension
Capacity	60 samples
Sampling Volume (mL)	0.5 - 5

Wet Dispersion Modules

Parameter	BT-802	BT-804	BT-80N	BT-80N Pro
Liquid Volume (mL)	600	8	50 - 80	80 - 200
Stirring Speed (rpm)	300 - 2500	-	300 - 3000	300 - 2500
Ultrasonic Power (W)	50 max	-	50 max	50 max
SOP	Yes	No	No	Yes
Anti-corrosive	No	Yes	Yes	Yes

Dry Dispersion Modules

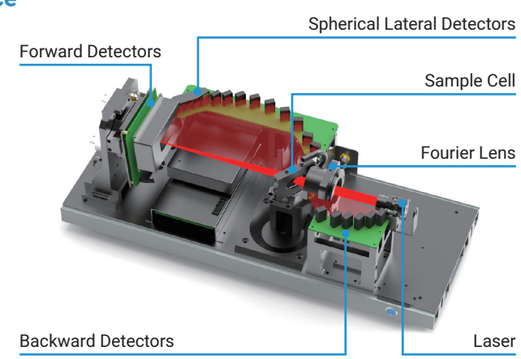
Parameter	BT-902	BT-903
Powder Mass (g)	0.2 - 10	0.02 - 1
Gas Pressure (MPa)	0.1 - 0.8	
Medium	Air, nitrogen or noble gases	
SOP	Yes	Yes

Dynamic Imaging Module

Parameter	PIC-1
Principle	Dynamic image analysis
Particle Size Range (µm)	2 - 3500
Size and Shape Parameters	24
Magnification	0.5x and 10x

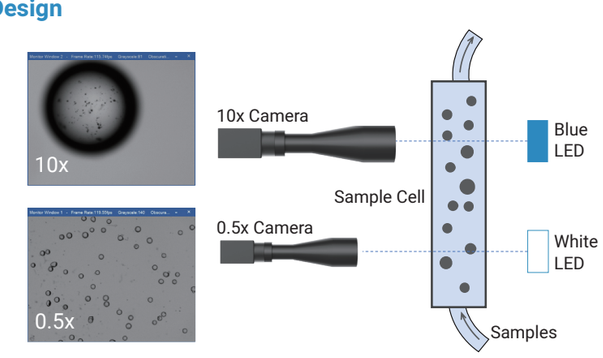
Patented Technologies Driving Instrument Excellence

- Integrates both Fourier and inverse Fourier designs for precise light scattering analysis.
- Features a 92-detector spherical array that detects light signals over a wide angular range from 0.016° to 165°, providing enhanced resolution and accuracy.
- Utilizes an innovative tilted sample cell design that effectively minimizes total internal reflections, ensuring accurate results.



PIC-1 Modular Dual-Camera Imaging System Design

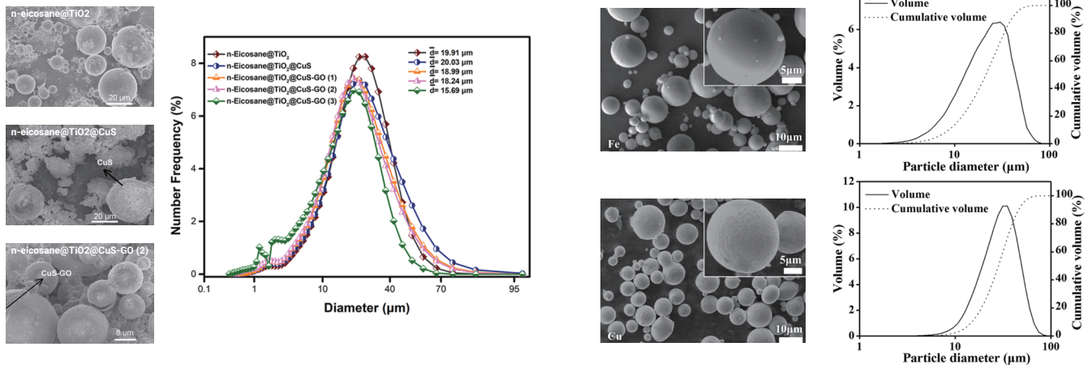
- Modular design offers seamless integration with the Bettersizer 2600.
- Features a dual-camera dynamic imaging system with 0.5x and 10x magnifications for comprehensive particle analysis.
- Equipped with a high-speed camera for precise capture of detailed particle shape characteristics.



Bettersizer 2600

Application Example

- **Characterizing various samples using either wet or dry method**



Particle size distributions of solar energy converters by **wet method.**

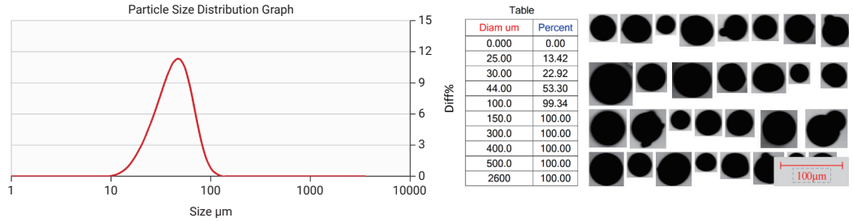
Adapted from Fan, X., Qiu, X., Lu, L., & Zhou, B. (2021). *Solar Energy Materials and Solar Cells*, *223*, 110937.

Particle size distributions of metal powders by **dry method.**

Adapted from Xu, C., Yu, S., Wu, W., Liu, Q., & Ren, L. (2022). *Additive Manufacturing*, 102589.

- **Analyzing the size and shape of particles by LD and DIA**

The Bettersizer 2600 with PIC-1 provides comprehensive analysis by simultaneously measuring both particle size distribution through laser diffraction (LD) and particle shape via dynamic imaging analysis (DIA), offering a complete characterization of the sample.



Specifications

Parameter	Bettersizer 2600
Size Range	0.02 – 2600 μm (Wet) 0.1 – 2600 μm (Dry) 2 – 3500 μm (Dynamic Imaging)
Dynamic Imaging Module	0.5x and 10x; 120 fps
Wet Dispersion Medium	Water, organic solvent, corrosive solution*
Dry Dispersion Medium	Air/nitrogen/noble gases
Laser Safety	Class 1
Compliance	21 CFR Part 11, ISO 13320, ISO 13322-2, USP <429>, CE

For more information about the Bettersizer 2600

*Depending on the dispersion unit used.

BT-A60 Autosampler

The BT-A60 is a robust, automatic and high-throughput sampling system. It maximizes laboratory automation for sample measurements, reducing labor costs while boosting productivity and efficiency. Its compact design saves valuable bench space while enabling the measurement of up to 60 different samples in a single run. It is capable of dispersing dry samples as well as slurries. Compatible with the Bettersizer S3 Plus and Bettersizer 2600, the BT-A60 provides 24/7 fully automated sample analysis to support a variety of analytical applications.

Benefits

Manual Sample Addition VS **Automated Sample Addition**

- **Skilled operator** required	- Allows for **unattended operation**
- Potential risk of **human error**	- Independent of **human error**
- Risk of **cross-contamination**	- No risk of **cross-contamination**
- **Messy** workbench	- **Well-organized** workbench
- **Longer** sample-to-sample run times	- **Shorter** sample-to-sample run times

Compatibility

The **BT-A60** works seamlessly with the
Bettersizer S3 Plus and **Bettersizer 2600** for 24/7 sample analysis

Specifications

Parameter	BT-A60
Compatibility	Bettersizer S3 Plus, Bettersizer 2600
Particle Status	Suspensions, dry powder
Sample Capacity	60 samples
Sampling Volume	0.5 - 5 mL

For more information about the BT-A60 Autosampler

Bettersizer ST

Your One-Stop QC Tool

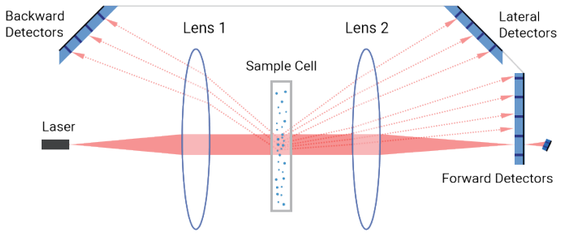
The Bettersizer ST is a fully automated and integrated particle size analyzer with a smart operation system for wet dispersing. Designed for the industrial QC process, the Bettersizer ST delivers stable and reliable testing results with minimum user intervention. Its compact footprint saves valuable workspace in both factories and laboratories.

Features

- **Excellent accuracy** ensured by patented DLOS (Dual Lens Optical System)
- **Outstanding repeatability** for reliable testing results
- **Intuitive software** provides an optimal measurement experience
- **Compact and robust design** saves workspace and reduces maintenance frequency

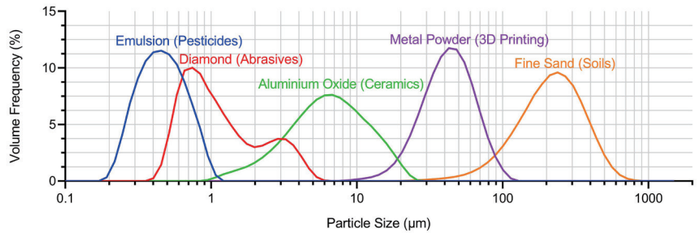
Benefits

- **Ease-of-Use**
- **Cost-Efficiency**
- **Robustness**
- **Low-Maintenance**



Optical System of the Bettersizer ST

Application Example



With its exceptional accuracy and repeatability, the Bettersizer ST is an ideal QC tool for a wide range of applications and industries.

Specifications

Parameter	Bettersizer ST
Size Range	0.1 – 1000 µm
Accuracy	≤ 1%
Repeatability	≤ 1%
Laser Safety	Class 1
Compliance	21 CFR Part 11, ISO 13320, USP<429>, CE

For more information about the Bettersizer ST

Overview of Bettersizer Series

Select the right Bettersizer for you

Parameter	Bettersizer S3 Plus	Bettersizer 2600	Bettersizer ST
Particle Size Range	0.01 – 3500 µm	0.02 – 3500 µm	0.1 – 1000 µm
Wet Method	✓	✓	✓
Dry Method		✓	
Shape Measurement	✓	✓	
Autosampler	✓	✓	
SOP Operation	✓	✓	✓
IQ/OQ Validation	✓	✓	✓
21 CFR Part 11	✓	✓	✓

Typical Applications of the Bettersizer Series

Abrasives

Battery & Energy

Building Materials

Ceramics

Food & Beverages

Mining & Minerals

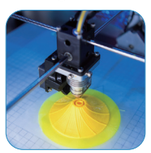
Paints, Inks & Coatings

Pharmaceuticals

Agrochemicals

Household Chemicals

3D Printing Materials



Environmental Analysis

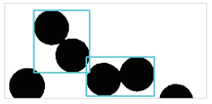
BeVision S1

Classic Image Analyzer for Particle Size and Shape

The BeVision S1 integrates light microscopy and image analysis to deliver size and shape distributions of both powders and suspensions. With an objective magnification of up to 100x, the BeVision S1 efficiently analyzes and records particles as fine as 0.3 µm.

Features & Benefits

- **Versatile Sample Compatibility**
  Suitable for both dry and wet samples. Dry powder or liquid samples can be effectively dispersed and analyzed
- **Flexible light sources**
  The default transmittance light source suits most samples, with optional reflective light source available for more complex needs
- **Automatic Particle Identification**
  Users can exclude adhered particles from the statistics or split them into separated particles and include them with BeVision software



Identifying adhered particles

Splitting adhered particles

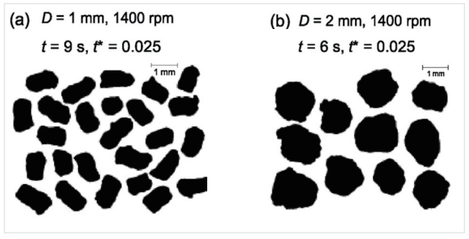
The optional BT-910 Dry Powder Disperser provides rapid and reproducible sample dispersion, enhancing user efficiency

BT-910 Disperser

Application Example

Analyzing the size and shape of extruded pellets made up of MCC (microcrystalline cellulose) and water.

Projected images of extruded granules under different spheronization durations. Adapted from Zhang, M., & Li, Y. (2016). *Powder Technology*, *299*, 199-209.



Typical Applications

- Metal Powders
- Pharmaceuticals
- Mining & Minerals
- Abrasives

Specifications

Parameter	BeVision S1	
Microscopy Options	Biological microscopy	Metallurgical microscopy
Size Range*	0.3 – 4500 µm	0.1 – 2700 µm
Testing	SOP test	
Objective Lenses	2x, 4×, 10x, 40×, 100×(oil) (with 40× digital magnification)	2x, 5×, 10×BD, 20×BD, 50×, 100x(oil)
Camera	CMOS, 12M Pixels	
Compliance	ISO 13322-1, ISO 9276-6	

For more information about the BeVision S1

*Depending on the objective used.

BeVision M1

Automated Particle Size and Shape Scanner

The BeVision M1 is an advanced image analyzer, ideal for surface inspection and cleanliness analysis. It features a metallurgical microscope, automatic scanning stage, high-resolution CMOS camera, and robust analysis software, enabling it to scan the surfaces of filters or films and generate a full-view image based on size and shape.

Features & Benefits

- **Automated scanning and test**
  Enhances measurement efficiency and eliminates operator subjectivity
- **Intelligent focusing during scanning**
  Ensures each image is high definition and results are accurate
- **Powerful cleanliness inspection**
  Facilitates particle count, classification and analysis by size and shape
- **Partial re-scanning with a higher magnification**
  Locates foreign particulates and enables further analysis after an overview scan
- **Measurement of centimeter-sized particles**
  Using image-stitching mode, even fibers or coarse particles crossing multiple images can be recorded and analyzed without losing any details

Typical Applications

- Substrates
- Coatings
- Abrasives
- Metal Powders
- Mining & Minerals
- Automotive Electronics

Application Example

The surface cleanliness analysis of a silicon substrate.

Color	xA(µm)	Count	Percentage
	< 10.00	37	63.79%
	10.00 - 20.00	17	29.31%
	20.00 - 50.00	3	5.17%
	> 50.00	1	1.72%

Particle Attributes	Minimum	Maximum
Aspect Ratio	0.000	0.700
xA	20.000	50.000
Count	2	
Percentage	3.45%	

Specifications

Parameter	BeVision M1
Size Range	0.3 – 10000 µm
Testing	Automated scanning and panoramic analysis
Objective Lenses*	4×, 5×BD, 10×BD, 10x, 20× (with 40× digital magnification)
Camera	CMOS, 12M Pixels
Compliance	ISO 13322-1, ISO 9276-6, ISO 16232

For more information about the BeVision M1

*More optional objectives available.

BeVision D2

Dynamic Image Analyzer for Dry Analysis

The BeVision D2 is a high-performance dynamic image particle size and shape analysis system, designed for the comprehensive characterization of coarse particles and millimeter-scale powder materials through dry dispersion. Its high-speed CMOS and advanced BeVision software enable the rapid identification of over 10,000 particles per minute, ensuring reproducible and accurate measurement results.

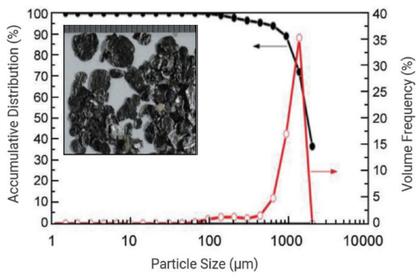
Features & Benefits

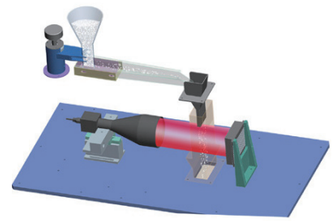
- **Real-time result display**
  Utilizes multi-threaded processing to display results during measurement
- **High-speed CMOS camera**
  Micro-second exposure time minimizes the trailing phenomenon of moving particles
- **Automatic identification of adhered particles**
  Prevents interference with accurate results
- **Efficient sampler**
  Employs electromagnetic vibration feeding and gravity-driven dispersion, ideal for coarse particles dispersion, suitable for coarse particles
- **Simulation feature of sieving results**
  Offers a simulation of sieving results for comprehensive analysis

Application Example

Measuring the size of graphite ores by a research team of Tsinghua University.

Adapted from Li, J. H., Hou, S. Y., Su, J. R., Li, K., Wei, L. B., Ma, L. Q., Huang, Z. H. (2019). *New Carbon Materials, 34(2)*, 205-210.





Particles are dispersed by a vibrating feeder, allowing them to fall freely through the test zone, where they are detected and photographed in real-time by the CMOS camera.

Typical Applications

- Abrasives
- 3D Printing Materials
- Soils & Sediments
- Glass & Ceramics
- Chemicals & Catalysts
- Granular Fertilizers
- Food
- Mining & Minerals
- Plastics & Resins

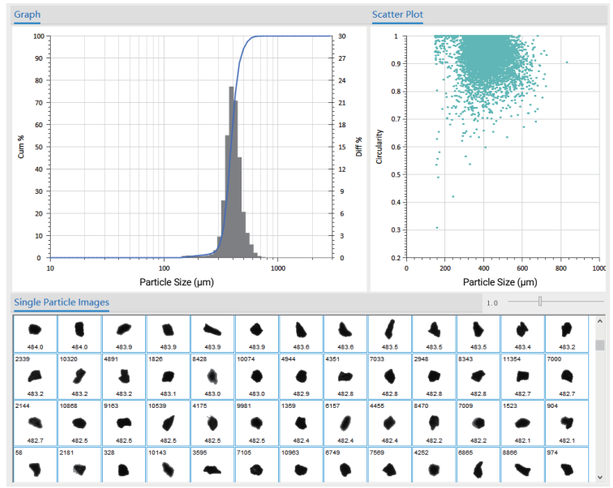
Specifications

Parameter	BeVision D2
Size Range*	3.5 – 13000 μm
Dispersion	Free fall
Lens Options	2×, 1×, 0.5×, 0.3x, 0.132× (with 40× digital magnification)
Camera	CMOS
Compliance	ISO 13322-2, ISO 9276-6

For more information about the BeVision D2

*Depending on the equipped lens.

Overview of BeVision Series



Size Parameters	Shape Parameters
Area-equivalent Diameter	L/W Ratio
Perimeter-equivalent Diameter	Ellipse Ratio
Long-axis Diameter	Aspect Ratio
Short-axis Diameter	Elongation
Max. Feret Diameter	Straightness
Min. Feret Diameter	Irregularity
Length X_{LF}	Compactness
Major Axis of Legendre Ellipse	Extent
Minor Axis of Legendre Ellipse	Box Ratio
Max. Martin Diameter	Circularity (11 optional algorithms)
Min. Martin Diameter	Solidity
	Convexity
	Concavity

Features & Benefits of BeVision Software

- **Diverse evaluation parameters**
  Includes 11 size parameters, 13 shape parameters, and single-particle images
- **Fully automated operation**
  Automates the analysis including image processing, particle identification, particle analysis, particle information statistics
- **Identification of agglomerates**
  Prevents interference from adhered particles or agglomerates in the results
- **Visualization of every single particle**
  Helps users to determine whether an irregularly shaped particle is a genuine primary particle or an agglomerate
- **Rich Result Presentations**
  Offers frequency graphs, cumulative graphs, histograms, scatter plots, distribution tables; all of which can be highly customized
- **Calibration functionality**
  Ensures accurate calibration of magnification and focus using stage graticules, guaranteeing the authenticity of results
- **Re-analysis functionality**
  Allows users to re-analyze the saved single-particle gallery, creating a new record independent of the original
- **Compliance**
  Adheres to ISO 9276-6 standards for all measurement parameters

Select the right BeVision for you

Model	Static Image Analysis	Dynamic Image Analysis	Wet Dispersion	Dry Dispersion	Cleanliness Analysis
BeVision S1	✓		✓	✓	
BeVision M1	✓			✓	✓
BeVision D2		✓		✓	

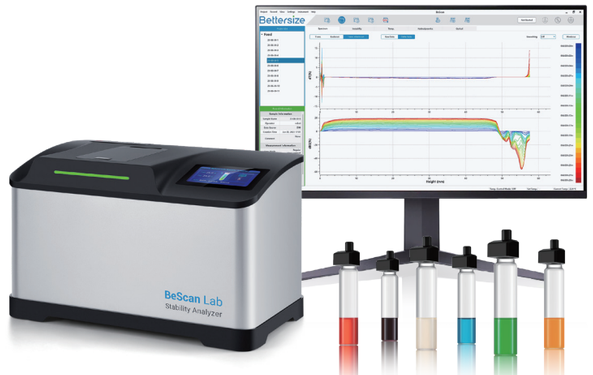
BeScan Lab

Stability Excellence Within Reach

BeScan Lab is a versatile, sensitive, and reliable stability analyzer utilizing Static Multiple Light Scattering (SMLS) technology. Widely used in formulation development and product quality control, it accommodates a broad range of sample concentrations up to 95% v/v and various types such as emulsions, suspensions, and foams. With temperature scanning capabilities reaching up to 80 °C, BeScan Lab offers both qualitative analysis and quantification of destabilization, aiding in monitoring long-term product stability and achieving optimal shelf life.

BeScan Lab Provides

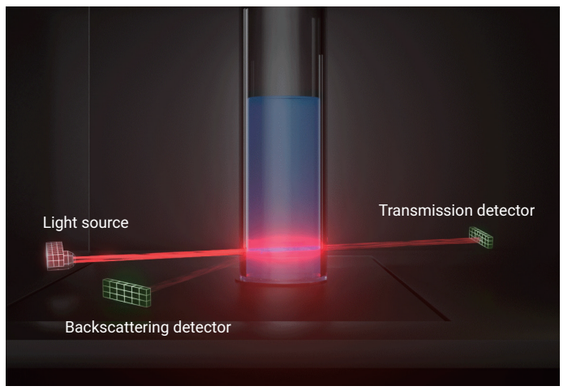
- Instability index (I_{US})
- Mean particle size
- Hydrodynamic analysis
- Radar chart for regional I_{US}
- Temperature trend testing
- Particle migration rate

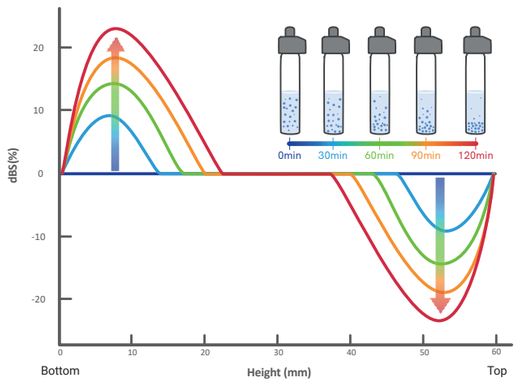


Static Multiple Light Scattering

Static Multiple Light Scattering (SMLS) is an optical technique used to directly characterize native concentrated liquid dispersions. This technique emits light into the sample, where it is scattered multiple times by particles or droplets before being detected.

BeScan Lab uses SMLS with an **850 nm LED** as light source, with detectors positioned at **0° for capturing transmitted light** and at **135° for backscattered light**. This setup scans the sample vertically, analyzing the transmitted light for transparent systems, while the backscattered light is ideal for opaque systems.





Features

Non-destructive stability analysis for various dispersions

- Non-contact, non-dilution, non-shearing
- Sample volume fraction up to 95%
- Particle size measurement range from 0.01 to 1000 μm

Fast and direct stability measurement

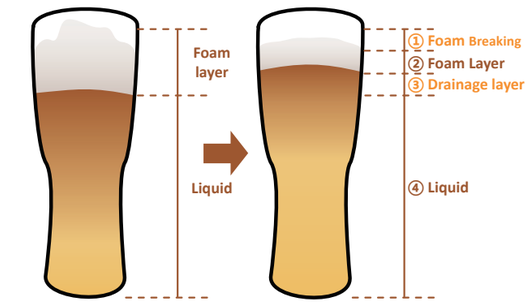
- Ultra-sensitive detectors, with a 20-micron scan step, allow capture of subtle variations
- Temperature control up to 80 °C

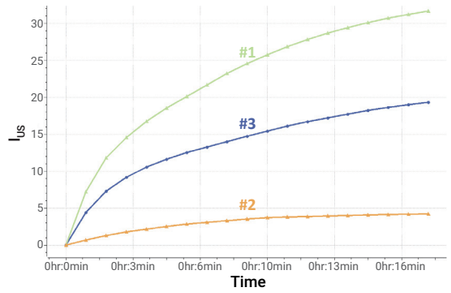
Qualitative and quantitative stability results

- Identification of various unstable phenomena
- Provides detailed insights into destabilization processes

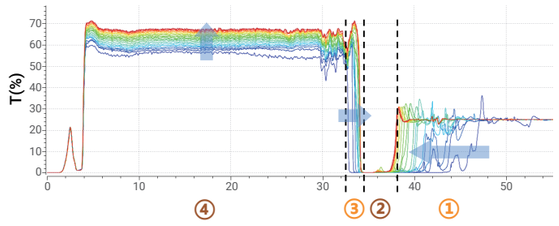
Application Example

Beer foam stability is crucial for maintaining quality and freshness. BeScan Lab assesses this stability by capturing changes in transmitted signals, and tracking the progression of the instability index (I_{US}).





Change curves of I_{US} (top)



Transmitted signal related to the unstable phenomenon

Sample	#1	#2	#3
Alcohol content (vol%)	9	5	3
Wort concentration (ºP)	18	12	8

- Sample #1 with the highest alcohol content and wort concentration is the most unstable.
- Sample #2 with average alcohol content and wort concentration is the most stable.

Specifications

Parameter	BeScan Lab
Scan Step	20 μm
Sample Volume	2 - 25 mL
Maximal Volume Fraction*	95%
Maximal Number of Simultaneous Samples	10
Temperature Range	RT - 80 ℃ (± 0.5 ℃)
ISO Compliance	ISO TR18811, ISO TR13097 ISO TS21357, ISO TS22107

For more information about the BeScan Lab

* Sample and sample preparation dependent

PowderPro A1

Your 14-in-1 Automated Powder Characteristics Tester

The PowderPro A1 is a versatile, high-performance instrument designed to measure and analyze 14 different powder characteristics, including essential parameters like flowability, compressibility, and density. This instrument incorporates advanced technologies such as Wi-Fi enabled intelligent control, image processing, 3D electromagnetic vibration, and rotating tapped density measurement. This state-of-the-art system delivers fast, straightforward, and highly precise evaluations of powder properties, making it an indispensable tool for studying and analyzing powder materials across various industries.

Measured Parameters

- Angle of Repose
- Sieve Size
- Angle of Fall
- Angle of Spatula
- Bulk Density
- Tapped Density
- Dispersibility
- Voidage
- Cohesion

Calculated Parameters

- Angle of Difference
- Compressibility
- Uniformity
- Flowability
- Floodability

Features & Benefits

- **Compact design**

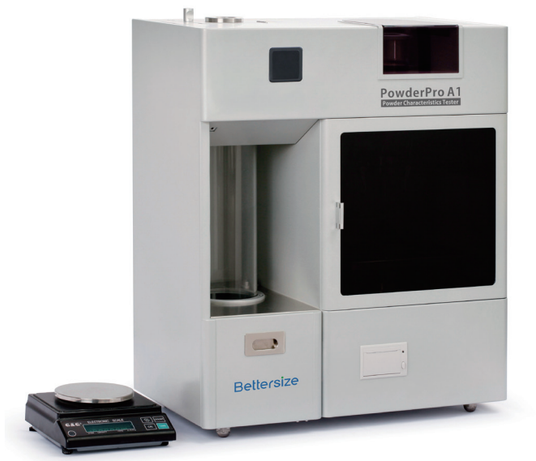
  Efficiently measures 14 powder characteristics in a single instrument
- **Automated imaging technology**

  Utilizes a high-resolution CCD camera to capture images of the powder pile
- **Reliable testing**

  Supports testing with 21 CFR Part 11 compliant features on a computer system
- **Intelligent data transmission**

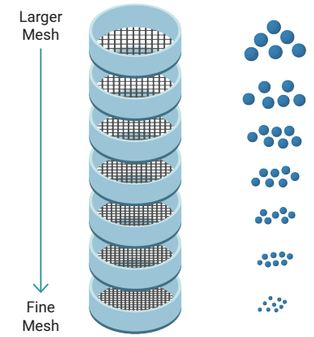
  An electronic balance is connected to the instrument to transmit weight data for analysis
- **Convenient data output**

  A mini-printer is available to print the measurement data promptly

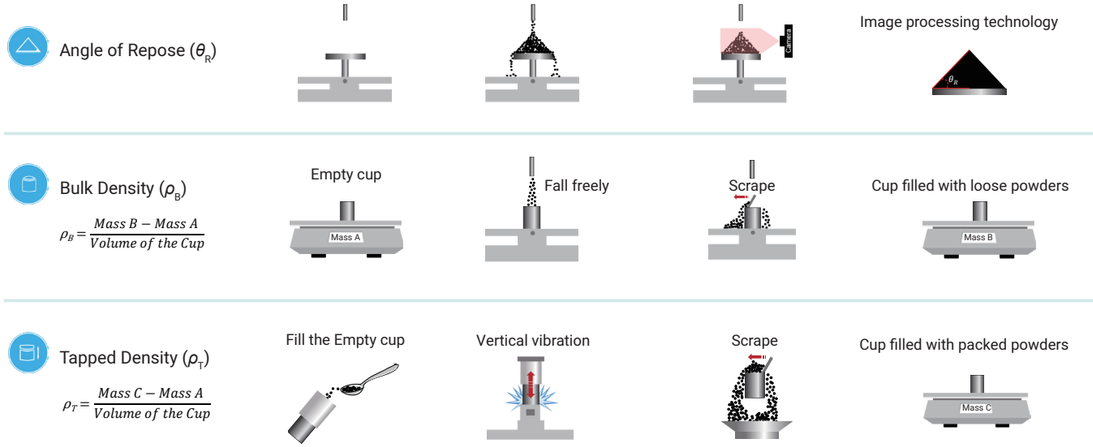


Sieve Size

The PowderPro A1 is equipped with an integrated sieving function that facilitates sieve analysis, a key method for determining particle size distribution.
By directly connecting to a balance that captures the tare weight of sieves, the PowderPro A1 minimizes human error, ensuring more accurate and reliable results. This user-friendly and cost-effective solution improves particle size analysis while ensuring superior product quality.



Measurement Methods



Application Example

The PowderPro A1 serves as a powerful tool for new product development and scientific research of protein powder, particularly in evaluating flowability through the Carr Index method.

Sample	Angle of Repose (°)	Angle of Spatula (°)	Compressibility (%)	Uniformity	Flowability Index	Flowability Evaluation
Collagen 1	37.97	53.43	22.22	2.88	73	Good
Collagen 2	46.71	63.16	31.00	3.61	57	Not Good

Specifications

Parameter	PowderPro A1
Operation Mode	Automatic
Measuring Angle	1 - 90° measured by CCD camera
Drop Height	3 or 14 mm
Tapping Speed	50 to 300 taps/min (user adjustable)
Repeatability	≤ 3%
Compliance	ISO 3953, USP <616>, Ph. Eur. 20934

For more information about the PowderPro A1

BetterPyc 380

Automated Gas Pycnometer

Built with state-of-the-art technology and relying on the trusted gas displacement method, this multi-functional instrument offers four critical measurements: volume, density, solid content and open cell content. With ultra-high accuracy and exceptional repeatability, you can trust our gas pycnometer to deliver precise results every time.

Features & Benefits

- **4-in-1 tester -** Volume and density for solid, semi-solid, powder and liquid; solid content for slurries; open cell content for plastic foam
- **High performance -** Offers exceptional repeatability and accuracy
- **Fully automated -** Includes measurement, calibration, detection, and SOP functionality
- **Convenient temperature control -** Thermoelectric temperature control regulated by EasyPyc software
- **Sample cell size -** Available in 10 cm^3, 35 cm^3, 100 cm^3
- **User-defined reporting and analysis -** Allows customization of reporting and analysis conditions

Typical Applications

- Pharmaceuticals
- Food
- Powder Coatings
- Pigments
- Metallurgy
- Ceramics
- Cement
- Soil
- Cellular Plastics

Application Example

Measuring the density of solids, powders and liquids, and determining the solid content of a slurry and open cell content of a rigid foam specimen.

Test Type	Sample	Result				
		1	2	3	Average	Std. Dev.
Density (g/cm^3)	Bulk Metal	7.9035	7.9035	7.9076	7.9049	0.0019
	Cement	2.8247	2.8248	2.8249	2.8248	0.0001
Solid content (%)	Clay Slurry	40.18	40.18	40.19	40.18	0.0047
Open cell content (%)	Plastic foam	51.61	51.24	51.45	51.43	0.15

Specifications

Parameter	BetterPyc 380
Accuracy	0.02%
Repeatability	0.01%
Dimensions	34 cm x 30 cm x 22 cm
Temperature range	10°C - 65°C

For more information about the BetterPyc 380

BeDensi Series

The BeDensi series, developed by Bettersize Instruments, offers a comprehensive range of precise instruments and testers. This series focuses on **four critical powder characteristics:**

- **Bulk density**
- **Tapped density**
- **Flow rate**
- **Angle of repose**

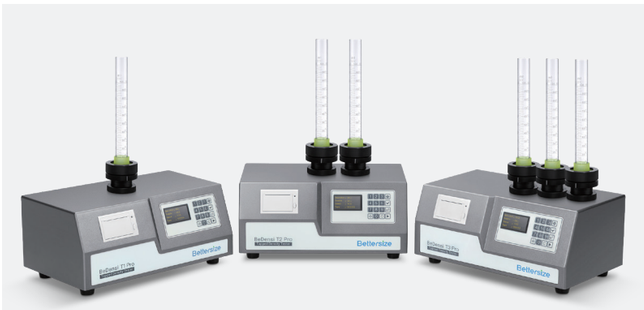
These instruments ensure accurate and reliable powder analysis, enhancing performance and precision across a wide spectrum of applications.

Typical Applications

- Cosmetics
- Battery materials
- Building materials
- Metal powders
- Soils & sediments
- Ceramics
- Pharmaceuticals
- Oils & petrochemicals

BeDensi T Pro Series

Tapped Density Tester



USP Ph. Eur. ASTM ISO

The BeDensi T Pro Series is a set of reliable tapped density testers designed by Bettersize.

- **Complying with USP, Ph. Eur., ASTM and ISO.**
- **Better than 1.0% repeatability**
- **Up to 3 workstations**

Tapped density Bulk density

BeDensi B1-S

Scott Volumeter

USP ASTM Ph. Eur. ISO

Bulk density

BeDensi P

Bulk Density Tester - Plastic

ISO

Bulk density

BeDensi B1

Bulk Density Tester

GB/T

Bulk density

HFlow-1

Flowmeter Funnel

USP ASTM Ph. Eur. ISO

Bulk density

Flow rate

BeDensi AR

Angle of Repose Tester

USP Ph. Eur.

Bulk density

Angle of repose

Bettersize

BETTER PARTICLE SIZE SOLUTIONS

BREAKING
BOUNDARIES
SHAPING
THE FUTURE

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