

# Bettersizer 2600



## HIGH PRECISION

- exact measurement of large and small particles due to a new and patented combined Fourier and Reverse Fourier setup
- optical bench with 92 detectors with an angle range between 0.016° and 165°

## VERSATILE

- choice between dry or wet dispersion
- small volume dry module for low sample quantities
- simple switching between dispersion modules

## ...AND MUCH MORE

- standard operation procedures
- automatic adjustment of the optical system
- best price-performance ratio

## PARTICLE SIZE

by means of static light scattering  
- wet and dry dispersion

## BETTERSIZER 2600 - precise particle size measurements using static light scattering

The BETTERSIZER 2600 is an up-to-date particle size measurement device which uses the principle of static light scattering and in conclusion operates according to DIN ISO 13320.

The smart combination of two traditional setups - Fourier and Reverse Fourier setup - allows precise measurement of fine and coarse particles, even with broad particle size distributions.

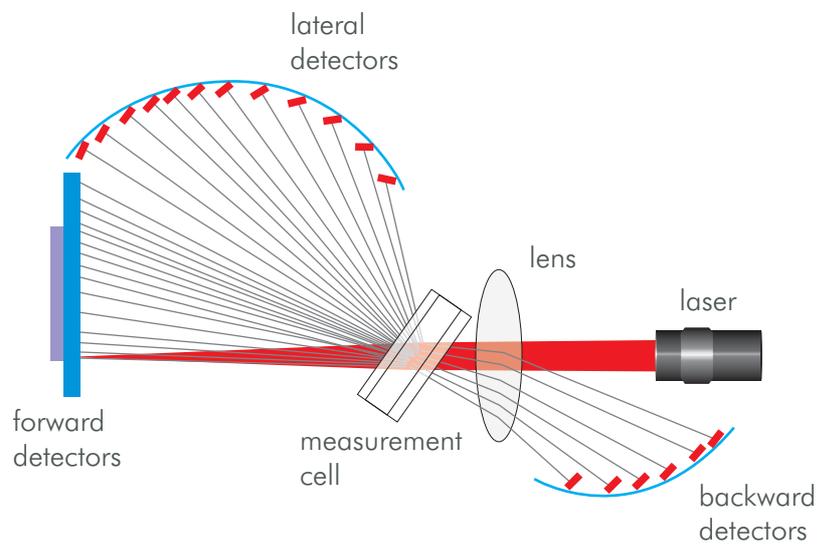
As dispersion method, the BETTERSIZER 2600 offers optionally or in combination wet and dry modules for regular or small volumes. The modular setup enables modification within seconds.



## MEASUREMENT PRINCIPLE AND TECHNOLOGY

### Combined Fourier and Reverse Fourier setup

The BETTERSIZER 2600 excels due to its unique and innovative setup of the optical bench: the light, focused through the lens into the detector plane, is scattered on the particles and detected in forwards and sideways direction (Reverse Fourier setup). Compared to common laser diffraction setups however, the backscattered light falls back through the lens and is collimated (Fourier setup). Beyond that, the measurement cell is arranged in a 45° angle to the incident laser beam.



This smart setup allows on one hand the detection of scattered light in a broad range of angles between 0.016° and 165°. On the other hand, the particles do not have to be in one plane compared to a sole Reverse Fourier setup thus, exact measurement of fine and large particles at the same time is no problem!

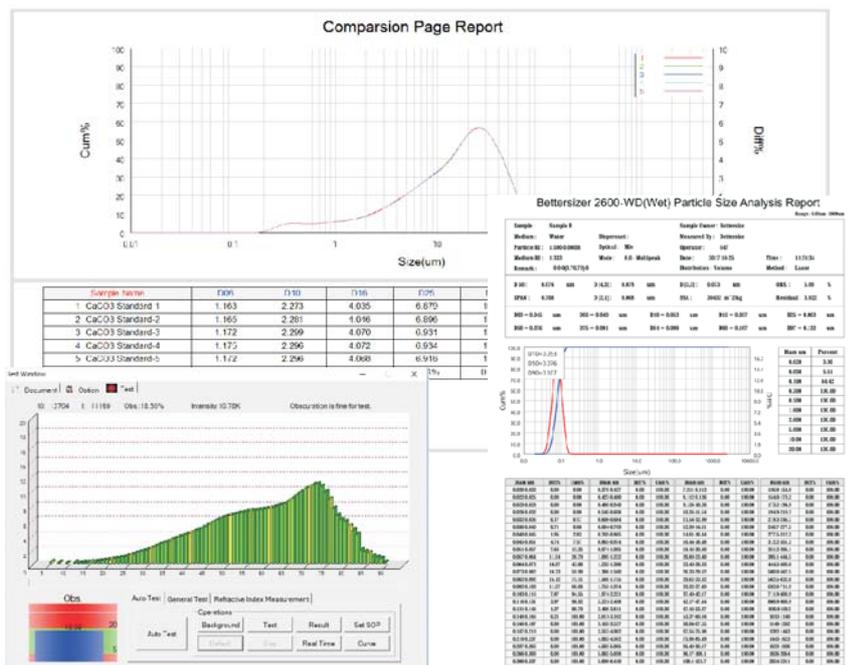
## INTUITIVE AND CAPABLE SOFTWARE

### Bettersize Software

- Simple operation with clear surface
- Real-time mode for the determination of ideal measurement conditions
- Working with standard operation procedures (SOP)
- Fully automated measurement routine with auto alignment
- Automatic data backup and editable reports
- Evaluation models according to Fraunhofer and Mie with direct conversion possibility
- Automatic cleaning routine
- Switching between wet and dry dispersion with one click

### Special Features

- Superposition functions with statistical evaluation
- Display field with fit quality (Mie analysis)



## MAIN ADVANTAGES

- ✓ Unique Fourier and Reverse Fourier setup combination method
- ✓ Dispersion: wet and/or dry
- ✓ Measurement range: wet: 0.02 - 2600  $\mu\text{m}$ ; dry: 0.1 - 2600  $\mu\text{m}$
- ✓ Broad scattering angle range (0.016 ° - 165 °) with high detector density (92 pcs.)
- ✓ Simple operation and data management for quality control
- ✓ Ideal price-performance ratio



## WET DISPERSION

During a wet measurement, the dispersion of particles takes place in a liquid medium. The sample is given into the bath of the dispersion module and, if necessary, is sonicated. For this, different external modules can be used.

**BT-802** - fully automated standard dispersion module with integrated ultrasound and centrifugal pump for sample delivery and a bath volume of 600 ml; suitable for sufficient sample volumes, and materials dispersible in water or alcohols

**BT-800N** - dispersion module with medium bath volume (ca. 250 ml) with ultrasound and centrifugal pump; suitable in addition for non-polar solvents like heptane, toluene, oils...

**UP 200St** - special dispersion unit for small volumes (90 to 120 ml), polar and non-polar solvents; equipped with powerful ultrasound (up to 200 W, adjustable amplitude)



BETTTERSIZER 2600 with  
plug-in wet measurement cell BT-802



## DRY DISPERSION

Dry dispersion is used when dry powders or granulate materials are supposed to be measured without the use of any solvent. In this kind of sample preparation, the sample is predispersed via a vibrational feeding tray, falls into a shaft, and is transported through a closed horizontal measurement cell via pressurized air (Venturi nozzle). Dispersion ensues by collision of the particles with the walls and among each other as well as by shearing.

Switching between dispersion modules requires just a flick of the wrist. For dry dispersion, different external modules can be selected.

**BT-902** - the automated standard dry module with convenient feeding tray and adjustable feeding rate and pressurized air nozzles; air flow can be adjusted for dispersion (up to max. 8 bar); suitable for all conveyable powders and granulated materials

**BT-903** - an automated dry module for small powder quantities; ideal for powders in research area or for pharmaceutical applications



BT-902 BETTTERSIZER 2600 with  
plug-in dry measurement cell



BT-902 open with sample  
dry feeding system

APPLICATIONS

building materials



personal care cosmetics



soils and sediments



glass and ceramics



carbon and oil



food and beverages



paints and inks



pharmaceuticals



polymers and metals



electronic



SPECIFICATIONS

Measurement principle	static light scattering, Fourier- and reverse Fourier optic combined
Analysis	Fraunhofer or Mie
Applications	suspensions, emulsions, dry powders
Size range	wet: 0.02 - 2600 $\mu\text{m}$ ; dry: 0.1 - 2600 $\mu\text{m}$
Number of size classes	> 100
Time of measurement	< 1 min
Accuracy/Repeatability	wet: < 0.5 % / < 0.5 %; dry: < 1.0 % / < 1.0 %
Feeding/Dispersion/Volume (Standard unit)	wet: centrifugal pump/ ultrasonic bath (50 W) / 600 ml dry: venturi-system, 0 - 5 bar
Number of laser/-type/-wavelength/-powder/-class	1 / fibre-laser / 635 nm (rot) / 3 mW / class 1
Detector system	Log-space arrangement, 92 (forward, sideward and backward)
Effective focal length	300 mm
Detector channels, -angle range	92 (forward, sideward and backward), 0.016 - 165°
conformity	21 CFR Part 11, ISO 13320, CE
Data export	Excel, PDF, Word, JPG and more
Dimension (L x D x H)/weight	705 x 318 x 295 mm/ 23 kg
Recommended computer specification	Windows 7 oder higher, Intel Core i5, 4 GB RAM, USB 2.0



Characterization of  
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