Bettersize

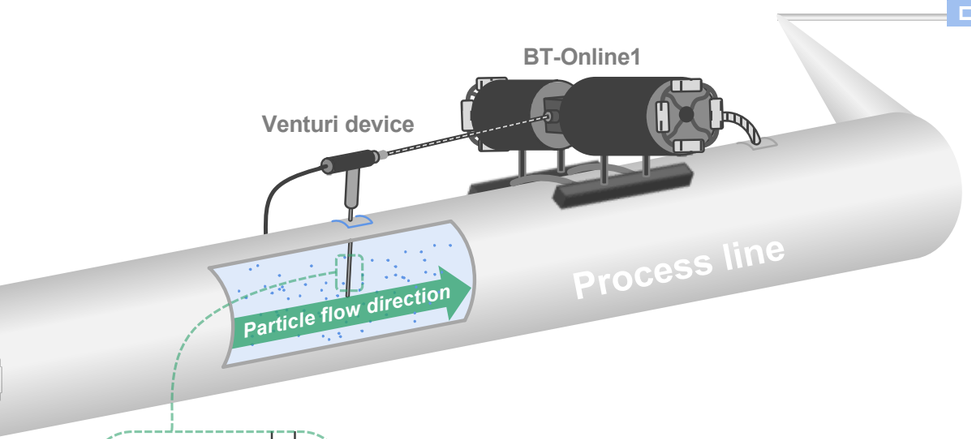
BETTER PARTICLE SIZE SOLUTIONS

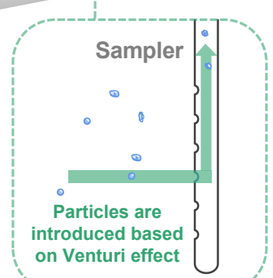
BT-Online Series

Real-time Insights for Smart Processes

PARTICLE SIZE

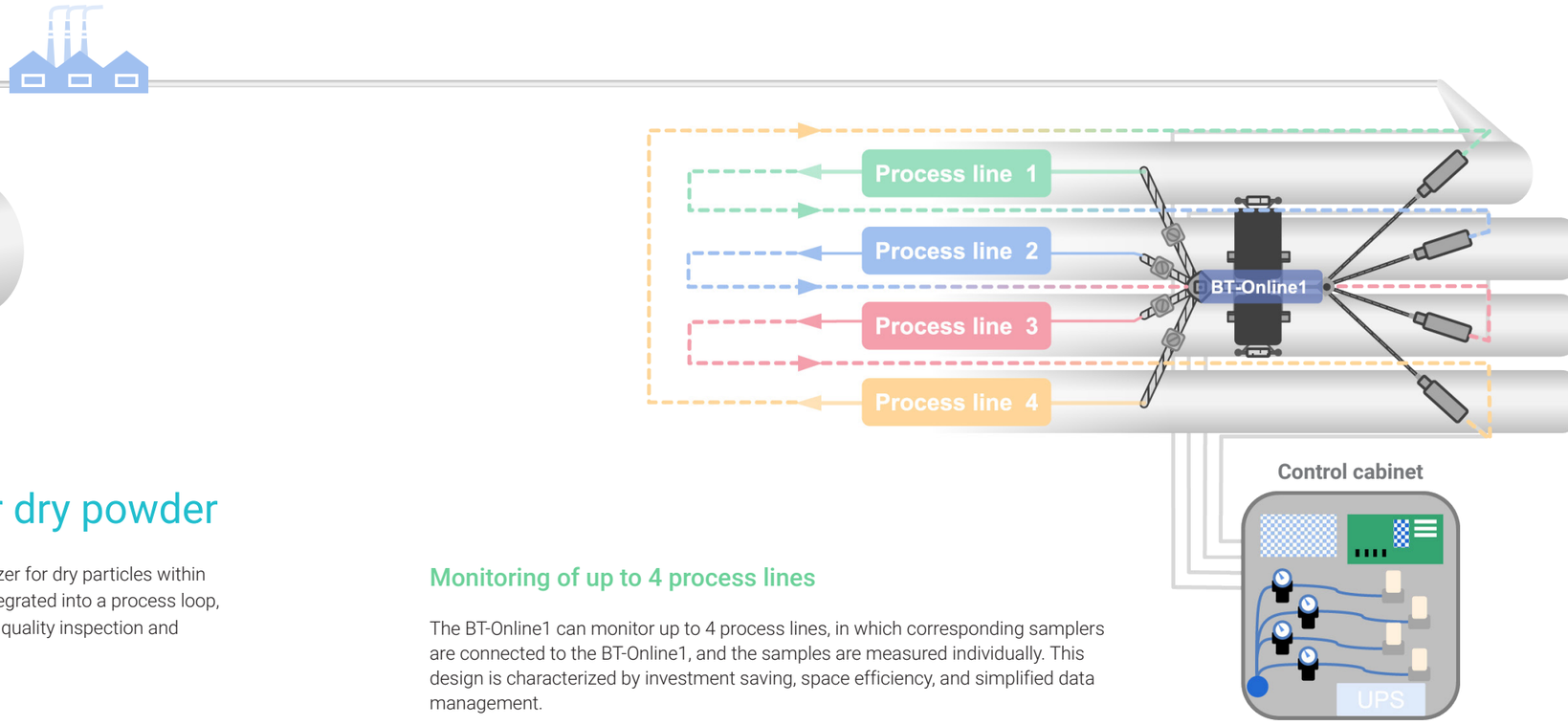
BT-Online1 (Dry)





Online measurement for dry powder

The BT-Online1 is used as an online particle size analyzer for dry particles within the size range of 0.1 to 1000 µm. The BT-Online1 is integrated into a process loop, providing real-time measurement results that assist in quality inspection and parameter monitoring.



Monitoring of up to 4 process lines

The BT-Online1 can monitor up to 4 process lines, in which corresponding samplers are connected to the BT-Online1, and the samples are measured individually. This design is characterized by investment saving, space efficiency, and simplified data management.

Representative sampling

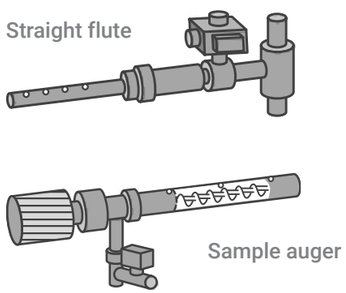
Two samplers are available for the BT-Online1

Straight flute

- Suitable for the sample with wide particle size distribution
- Good representative
- Simple maintenance

Sample auger

- Suitable for thin material flow
- Threaded rod ensures effective extraction



Dual protection from contamination

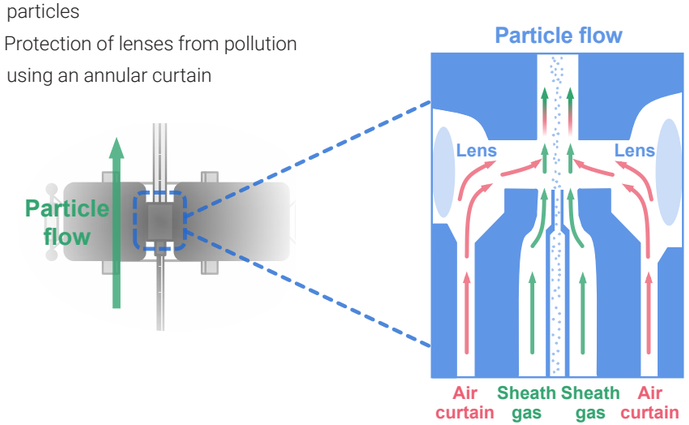
The lenses of the BT-Online1 are protected using a dual air curtain and sheath gas, which greatly reduce maintenance costs, increase efficiency, and prevent costly downtime.

Dual air curtain

- Protection of lenses from contamination based on the two generated positive pressure zones
- Assistance in sample dispersion

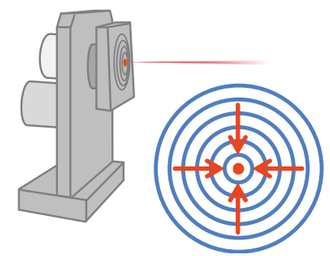
Sheath gas

- Hydrodynamic focusing of the sample jet ensures the correct flowing path for the particles
- Protection of lenses from pollution using an annular curtain



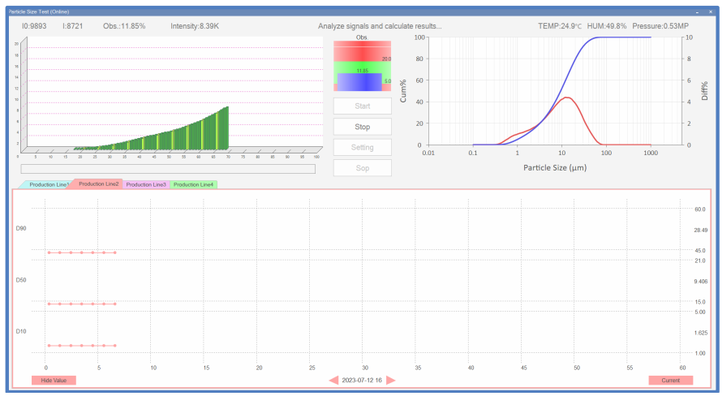
Automatic alignment

Automatic alignment will be carried out, ensuring accuracy for every measurement in case of harsh working environment.



Intuitive software

Individual SOP for each process line can be configured, and monitoring curves are intuitively displayed in the software.



Multiple communication protocols

The BT-Online1 can cooperate with the DCS or PLC system of the plant. Available communication protocols are **TCP, Modbus RTU**, and **4 - 20 mA**.

BT-Online1(Dry)

Application of the BT-Online1

Cements

Minerals

Chemicals

Agrochemicals

Pharmaceuticals

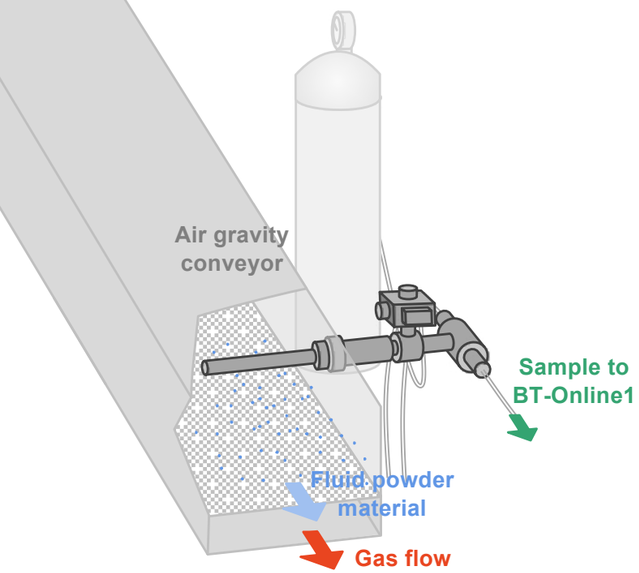
Battery materials

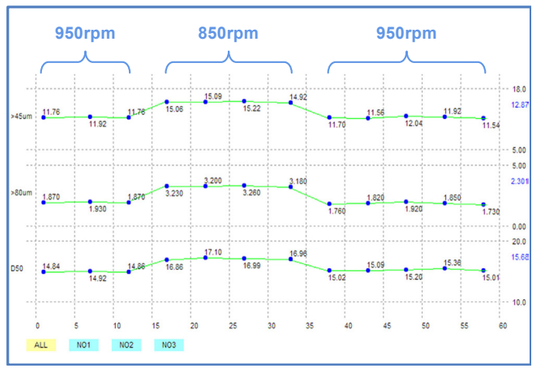
Metal powders

Ceramics

01 Measurement of cement powder in air gravity conveyor

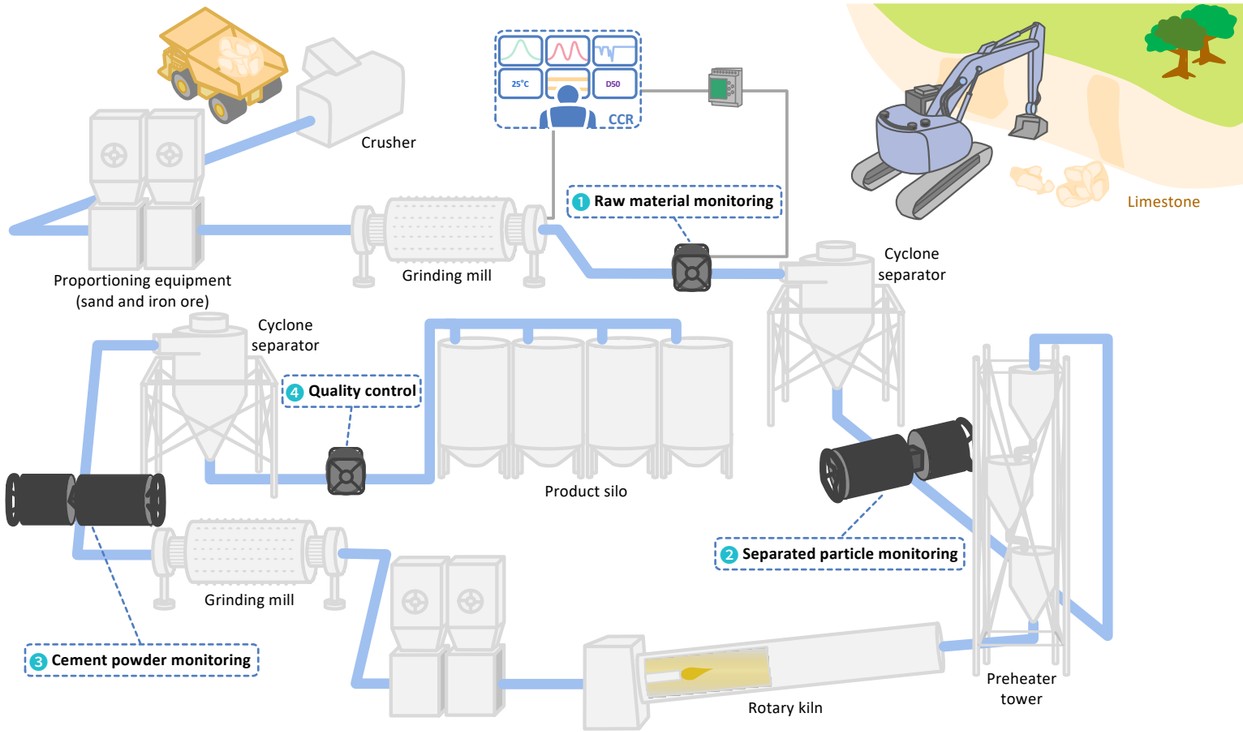
By changing the rotation speed of the classifier, the particle sizes of the cement particles measured with the BT-Online1 vary.





02 Various application of the BT-Online1 in a cement plant

A general portland cement production line is demonstrated below. The BT-Online1 can be applied in different positions for different purposes. Examples are shown below:



03 Further applications of the BT-Online1

Graphite powder

Fodder

Silicone powder

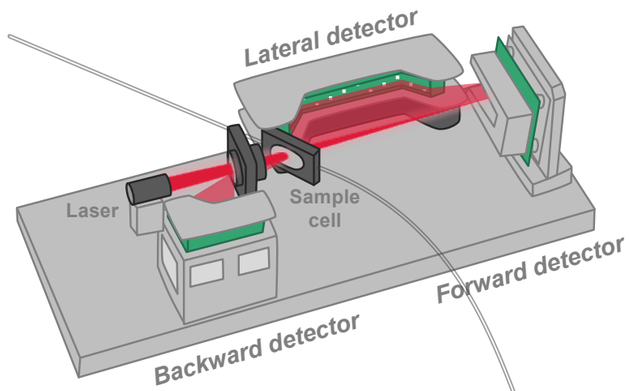
BT-Online2 (Wet)

Innovative solution for online measurement using wet method

The BT-Online2 applies patented Fourier and Inverse Fourier Optical System, providing reliable measurement results with the same accuracy level as that of the laboratory instrument. A total of 92 detectors are precisely arranged in the optical setup that is responsible for accurate particle size analysis ranging from 0.02 to 2000 µm.

Patented optical setup promotes measurement accuracy

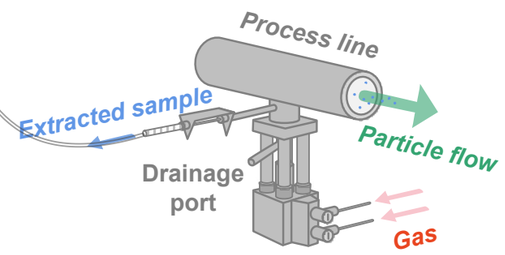
The patented Fourier and Inverse Fourier Optical System provided by Bettersize Instruments contains forward, lateral, and backward detectors, realizing the detection of scattered light signals in a very wide angular range.



Benefits of the optical setup:

- Tilted sample cell alleviates total internal reflection.
- Expands measurement range
- Improves the measurement accuracy for small particles.

Reliable pneumatic sampling system



This design allows:

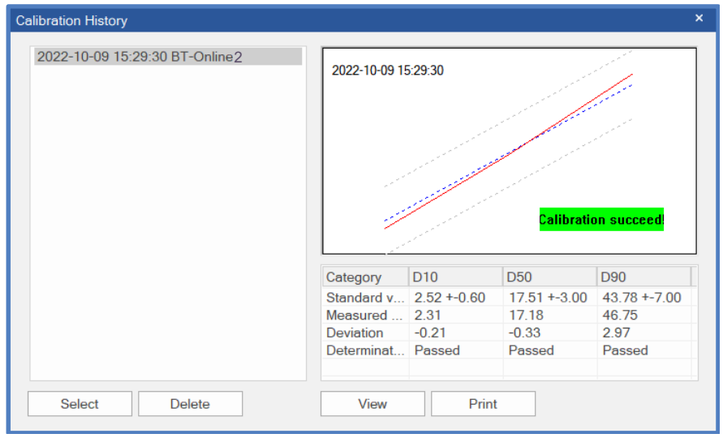
- Effective sample extraction without cross-contamination
- Good operation safety without using electricity

Achieving optimal obscuration through external dilution

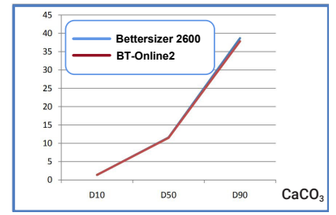
In most instances, the solid contents of the samples are quite high, resulting in high obscuration when samples are introduced to the BT-Online2. Hence, an external dilution system is necessary for primary dilution.

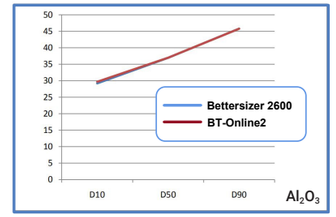
External dilution system of the BT-Online2

Align with laboratory instrument

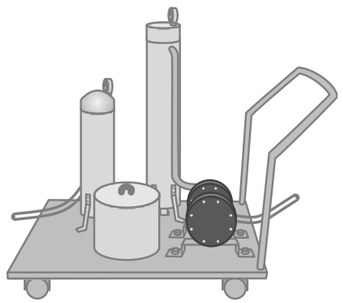


By performance verification, the measured value provided by the BT-Online2 is consistent with the nominal value of the working reference standard.





The result deviations between the BT-Online2 and the lab instrument are quite small — the particle size curves almost overlap each other.

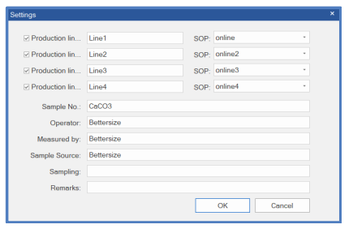


Filtration system enables recycling of organic solvent

When organic solvent is applied as a carrier instead of water, a movable filtration system is available that works hand in glove with the BT-Online2 for recycling the organic solvent, which saves your investment.

Monitoring of up to 4 process lines

Up to 4 process lines can be attached to the BT-Online2 with individual SOPs. The measurement result for each process line is intuitively displayed in the software, which saves equipment investment and simplifies data management.



BT-Online2 (Wet)

Application of the BT-Online2

Metal powders

Ceramics

Chemicals

Agrochemicals

Pharmaceuticals

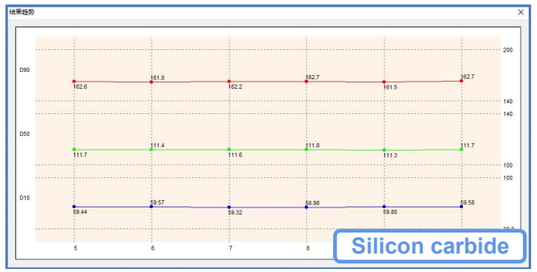
Battery materials

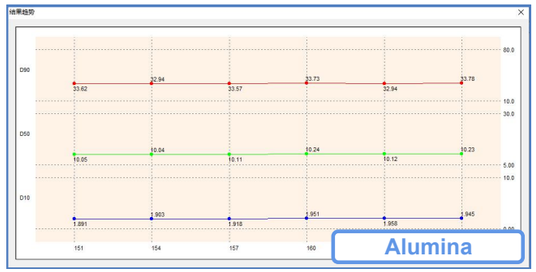
Ink

Abrasives

01 Continous and accurate measurement in various industries

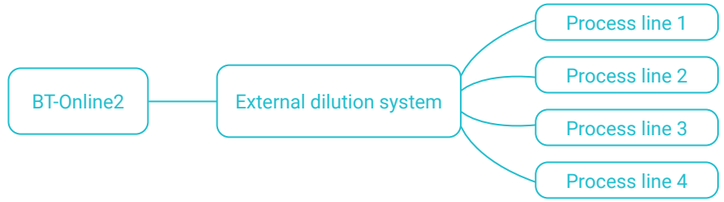
A patented optical system offers accurate measurement results with outstanding reproducibility.

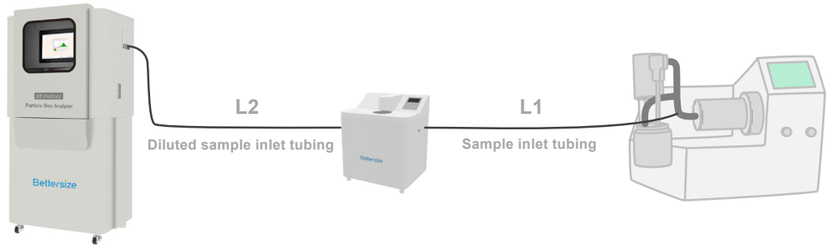




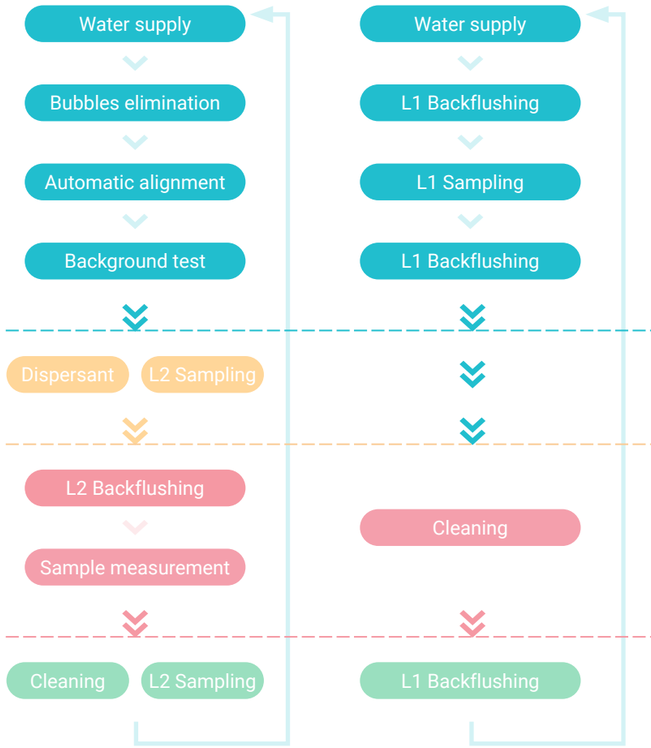
02 Measurement procedure of the BT-Online2 with an external dilution system

As an accessory, an external dilution system can be connected to the BT-Online2, offering a solution for measuring concentrated samples in case of multiple scattering. The external dilution system has 4 inlet ports that correspond to 4 process lines and 1 outlet port for delivering the primary diluted sample.





BT-Online2 (With internal dilution system) | External dilution system | Process line



Step 1 Preparation before the measurement is implemented in the BT-Online2. The sample is extracted from the process line to the external dilution system.

Step 2 The primary diluted sample is introduced to the BT-Online2. The dispersing agent is added simultaneously.

Step 3 Sample measurement is implemented in the BT-Online2, and cleaning of the external dilution system is also carried out.

Step 4 Cleaning of the whole measurement system is finished.

Specifications

BT-Online1	
Parameters	**Values**
Measurement range	0.1 - 1000 μm
Measurement principle	Mie scattering theory and Fraunhofer diffraction theory
Accuracy	≤ 1% (D50 of certified reference material)
Lens protection	Dual air curtain
Pressure of carrier gas	0.4 - 0.8 MPa
Airflow volume	≥ 1000 L/min
Laser power	Semiconductor laser
Number of detector	68
Carrier gas	Compressed air/inert gas
Communication protocol	TCP, Modbus RTU, 4 - 20 mA
Protection	IP65
Sample required per measurement	2 - 20 g
Power	AC220 V, 50 / 60 Hz, 90 W
Dimension	800 (L) x 280 (W) x 280 (H) mm (Main unit)
Weight	21 kg (Main unit)

BT-Online2	
Parameters	**Values**
Measurement range	0.02 - 2000 μm
Measurement principle	Mie scattering theory and Fraunhofer diffraction theory
Accuracy	≤ 0.5% (D50 of certified reference material)
Sampling method	Peristaltic pump
Measurement interval	≥ 1 s
Laser power	Fiber laser
Number of detector	92
Ultrasonication	50 W
Communication protocol	TCP, Modbus RTU, 4 - 20 mA
Power	AC220 V, 50 / 60 Hz, 200 W
Dimension	782 (L) x 530 (W) x 1592 (H) mm
Weight	85 kg

About Bettersize

No.1
Market Share in China

95
Patents

38
Global Labs

19k+
Organizations Using Bettersize's Technology

29
Years in Business

15%
Revenue Invested in R&D

92
Countries Covered

95%
In-house Production for Strict Quality Control

Compliance

All series of Bettersize instruments are in compliance with **ISO 9001** 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.

Certified Service and Support

We take great pride in our exceptional customer service, offering excellent technical support for applications and comprehensive after-sales service throughout the product life cycle. Our services range from product demonstrations and installations to regular product training and workshops. We also provide preventive maintenance programs, software and hardware upgrades, a trade-in purchase program, repair coverage, and 24/7 emergency service. Our certified service team has you covered.

Bettersize

BETTER PARTICLE SIZE SOLUTIONS

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