CAMSIZER® Online

Process-integrated particle analysis with digital image processing

Particle size analysis – quick and precise

- High accuracy and resolution
- Wide measuring range (30 µm to 30 mm)
- Analysis of particle size and particle shape
- Short measuring times

Extremely robust design – for use in rugged environments

- Automatic cleaning system
- Maintenance-free
- Uninterrupted power supply
- Vibration absorbers
- Wide temperature range (-20 to +50 °C)
- Air conditioning available
- Flexible configuration of instrument controller & data export

Retsch® TECHNOLOGY

Solutions in Particle Sizing

The CAMSIZER® Online System

Modular Principle

The unique modular setup of the CAMSIZER Online offers two alternatives: the system can be acquired as a complete package or in two steps. It is often the best choice to start with the CAMSIZER laboratory instrument. In this phase the most important parameters can be determined and their influence on the particle size and shape can be quantified without incurring major investments. It is part of Retsch Technology's excellent service to support customers in setting up methods and data interpretation. An update to the online version can then follow as a next step.

Closed housing

CAMSIZER Online Setup

The laboratory version of the CAMSIZER is integrated into an industry-standard housing which makes it suitable even for very rugged environments. The housing features **IP 54 protection** and **automatic cleaning options** which help to reduce cleaning and maintenance to a minimum. The housing is mounted on **vibration absorbers** which means that PC and measurement technology are not influenced by possible vibrations. If it is placed in an environment where vibrations are really strong, the instrument can be suspended from special ears. The industrial PC is powered by **UPS**. In case of a power failure it is shut down properly without damage of the storage medium and without loss of data.

Interfaces

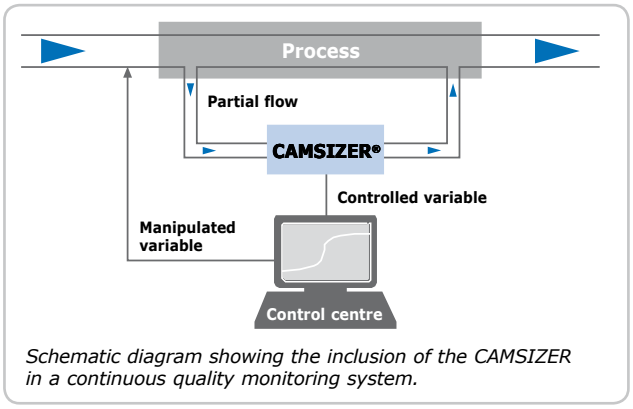
With the available interfaces it is possible to connect the instrument to process control systems, internal networks and to transfer measurement data to almost any LIMS. In consequence, remote control and automatic data transfer are possible. Interfaces are available for control via **digital card**, field bus **(profibus)** or **RS232** and for the results transfer via **analog signals**, field bus **(profibus)** or **Ethernet**.

CAMSIZER Online used in the sugar industry.

CAMSIZER Online with integrated ionizer to improve sample flow.

Process integration

For online analysis, a representative part sample of the bulk is taken out of the process and delivered to the CAMSIZER. The measurement can be automatically started by the system and the results are available at the measuring station after the analysis is completed. Immediately after the measurement has been completed, the next batch of the product is automatically transferred and analysed. Thus, an up-to-date status is available at all times which guarantees uninterrupted quality control. The process parameters can then be continuously optimised through a control circuit so that production can react quickly and timely, the reject quota can be minimised and product quality can be ensured. In any case, each measurement is preceded by individual sampling and sample preparation. The components for the feeding system can be designed together with local or specialized manufacturers according to the customer's requirements. Thus, the customer receives a ready to use installation for the automated analysis.



Schematic diagram showing the inclusion of the CAMSIZER in a continuous quality monitoring system.

Different sampling setups (from left to right):
sampling with integrated balance, from downpipe and with rotary divider.

Applications

The CAMSIZER Online is used in many different industries.

Steel industry
Monitoring of particle size in the coking plant to produce the best possible coking coal for the blast furnace. Automated sampling from the conveyor belt with splitting, drying and weighing.

Ore extraction/mines
Particle size analysis for the monitoring of crushers. Sampling from the belt.

Sugar
Monitoring particle size distribution of the final product during loading of trucks. Exact quality control of each delivery with automated sampling from the downpipe.

Animal feed pellets
Control of mills which grind feedstuffs. The particle size is an indicator of the rate of wear of the blades.

Catalysts
Measurement of average length and diameter of extruded catalysts for the monitoring of extruders. Sampling from the downpipe.

Washing powder
Monitoring of the granulation process of enzymes. Sampling with rotary tube sample divider.

The CAMSIZER® at a glance

Technical data

CAMSIZER®

Measuring range:	recommended range 30 µm to 30 mm
Parameters:	particle size, shape, density, transparency and number
Measurement:	60 images/s, each with more than 780,000 pixels (corresponds to more than 45 megapixels per second)
Measuring time:	approximately 2 to 3 min (depends on required measurement statistics)
Instrument data:	dimensions (H x W x D) approximately 650 x 850 x 350 mm weight (without PC): approximately 40 kg

The CAMSIZER is CE-tested and follows the relevant guidelines and standards.
It can be supplied with software complying with FDA rule **21 CFR Part 11**.

CAMSIZER® Online

Measuring data:	see CAMSIZER for measuring range, measurement, measuring time
Working range:	temperature range -20 °C to +50 °C (air-conditioned), enclosed for rough surroundings by housing (IP 54), shock and vibration-absorbing installation
Instrument data:	dimensions (H x W x D) approximately 800 x 1600 x 600 mm weight: approximately 250 kg compressed air supply: 4-8 bar
Interfaces:	Ethernet, Profibus, various digital and analogue contacts and signals (e.g. 4-20 mA)

Fields of application

Scope and purpose:	rapid and exact particle size and shape analysis of all dry, pourable bulk materials and powders
Sample material:	e.g. salt/sugar, plastics, catalysts, abrasives, carbon products, sand, carbon black/coal, coffee, refractory products, foodstuffs, polystyrene, glass/ceramics, fertilisers, pharmaceuticals, metal powder, etc.
Operating sites:	factory laboratories, research institutes, locations close to the production line as well as online for optimal quality control of products and processes

Retsch Technology GmbH
Rheinische Straße 43
42781 Haan, Germany

Telephone +49 2129/5561-0
Telefax +49 2129/5561-87

E-mail technology@retsch.com
Internet www.retsch-technology.com

a VERDER *company*

Retsch Technology – your specialist for particle analysis offers you a comprehensive range of instruments. We would be pleased to provide you with further information about our analytical instruments for size and shape measurement.

Printed in Germany
Subject to technical modification without notice
99.011.0002/E-09-2009