



PARTICLE SIZE AND SHAPE ANALYZER

CAMSIZER S1

With its focus on the essentials of dynamic image analysis, the CAMSIZER S1 is purpose-built for basic quality control applications. This streamlined approach results in a system that is not only more efficient but also easier to use.

Users can expect a seamless experience, from sample preparation through to final analysis, making the CAMSIZER S1 the most efficient choice for laboratories and production facilities seeking to enhance their quality control processes without the complexity of more advanced systems. The CAMSIZER S1 can handle a vast variety of applications, with excellent repeatability and correlation to traditional sieve analysis. Simultaneously, it delivers basic particle shape information. The CAMSIZER 3D and CAMSIZER S1 are two devices that look almost identical from the outside but are suitable for different applications and levels of complexity. While the CAMSIZER S1 is a cost effective entry-level device with a focus on quality control of standard applications, the CAMSIZER 3D is designed more for sophisticated shape analysis and applications in research and development.



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FOCUSING ON THE ESSENTIALS

- | High-Quality Imaging: Equipped with a 12 Megapixel camera for detailed particle analysis
- | Broad Particle Size Range: Capable of analyzing particle sizes from 30 microns to 5 millimeters.
- | Fast Measurement: High-speed analysis with a large field of view, providing results in just 2-5 minutes.
- | High Sample Throughput: Achieve up to 30 measurements per hour thanks to quick operation and easy sample preparation.
- | Automated Measurements: Standardized measurement routines ensure consistent quality control.
- | Highest Resolution: Precise results with detailed images.
- | Ease of Use: Simple connectivity with just two USB ports is required; no dedicated PC or cumbersome hardware installation is needed.
- | Efficiency: Designed for standard requirements in the bulk solids laboratory without compromising on performance.
- | Over 25 Years of Expertise: Microtrac's legacy of competence and innovation in dynamic image analysis

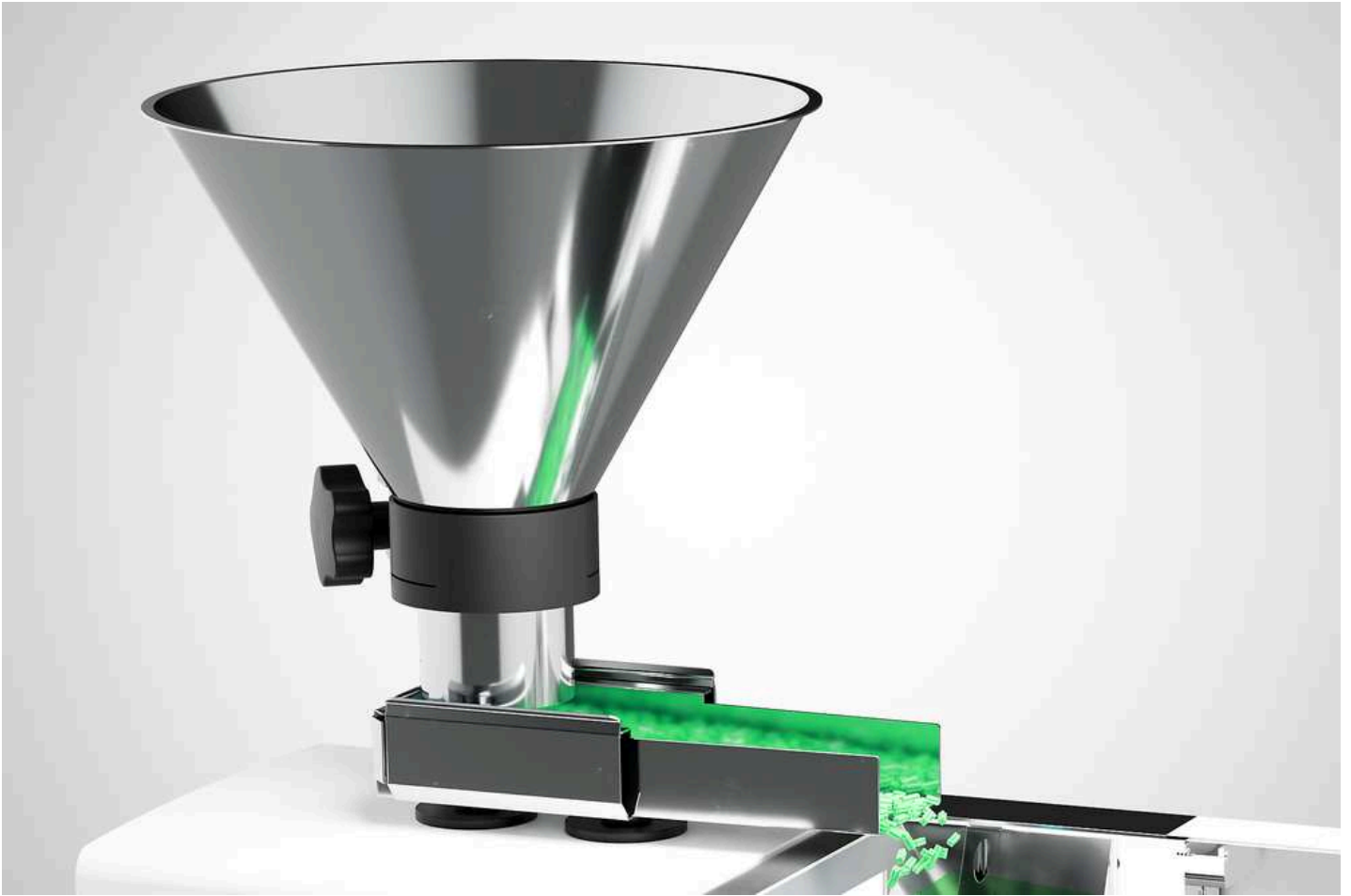


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ACCESSORIES AND OPTIONS



Calibration Reticle

A certified reference object is available for the CAMSIZER S1, with which the device can be calibrated in just a few seconds. This object is a pane of glass on which circles with a precisely defined diameter have been lithographically applied. This calibration standard is inserted into the measurement zone and the imaging scale of the camera is determined by measuring the circles. Once calibration is complete, a report can be printed to document the proper condition of the CAMSIZER S1.



Feeder and Funnel

The feeder and funnel set of the CAMSIZER S1 is designed in such a way that particles are conveyed homogeneously through the wide field of view of the 12-megapixel camera.

With the large hopper volume of 3.5 l, it is possible to measure large sample quantities fully automatically. The distance between the hopper and the chute is adjusted to the particle size by a motor to ensure an even sample feed into the measuring zone. Various coatings of the chute are available to improve the feeding of sticky or oily materials.



Guidance Sheets

The guidance sheet channels the sample flow before it enters the measurement zone. This can be advantageous, for example, when particles jump on the feeder. The long shield prevents the particles from being hurled over the measuring shaft and directs them into the focal plane. The guidance sheet also provides protection from air currents that could cause unwanted turbulence in the measurement zone.



Audit Trail Manager

The Audit Trail Manager is a software package that enables operation in accordance with the specifications of the 21 CFR part 11. This standard is particularly relevant in the pharmaceutical industry and its suppliers. The program option offers extensive user administration with various access levels and logs all processes in an encrypted database, the Audit Trail. Measurement results can be electronically signed for quality assurance.



Sample Splitters

Every measurement is only as good as the sampling and sample preparation that preceded it. Especially in the case of flowable bulk materials with a wide size distribution, segregation occurs, which leads to an incorrect distribution of particle sizes in the sample aliquot. By using a sample divider, representative partial samples can be generated in a simple way, which guarantee a meaningful result. MICROTRAC strongly recommends corrugated dividers and rotary sample dividers from RETSCH, also part of the Verder Scientific Group.

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TYPICAL APPLICATIONS

Many properties of bulk materials, like flowability, solubility, filtration efficiency, reactivity, abrasiveness, and taste, are significantly influenced by particle size. Therefore, particle size determination is commonly used as a part of quality control in many different industries.

The CAMSIZER S1 provides important measurement data within a few minutes that determines the quality of the sample. The results are consistent with traditional sieve analysis, which means that established product specifications do not need to be changed. Due to the high level of automation, measurement errors are virtually impossible, with significantly higher sample throughput. Another advantage is that shape analysis provides additional information about the sample that is not accessible with sieve analysis.



sand



fertilizers



sugar

- | sand and sediments from coarse silt to fine gravel
- | sugar
- | abrasives and blasting media
- | seed, coated and uncoated

- | glass beads
- | foodstuffs
- | Expandable Polystyrene
- | superabsorbents

- | salts
- | fertilizers
- | pharmaceutical pellets / granulates

... and many more!

APPLICATION EXAMPLES

PERFECT REPEATABILITY

SAND SAMPLES

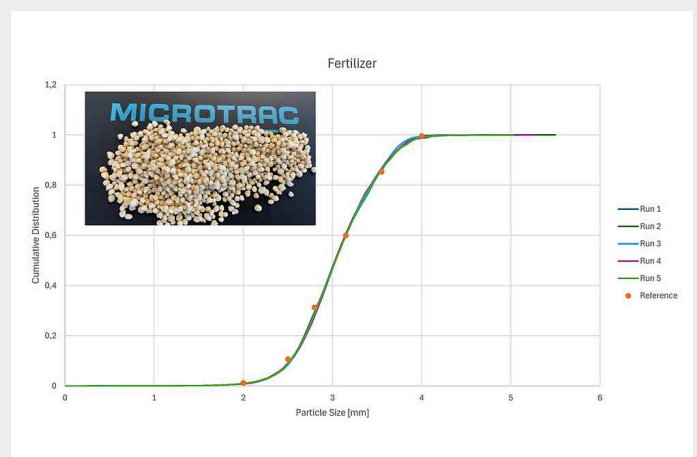
Sand is one of the most important standard applications for dynamic image analysis. With a nominal size of 63 μm to 2000 μm , sand is exactly within the measuring range of the CAMSIZER S1. Both broad distributions and closely sieved fractions can be easily analyzed with the CAMSIZER S1 within a very short time, whereby the results are compatible with those of sieve analysis. Our measurement examples show 5 repeat measurements of a broadly distributed sand sample including the expected range of sieving results for this product.



FAST MEASUREMENT AND HIGH SAMPLE THROUGHPUT

FERTILIZERS

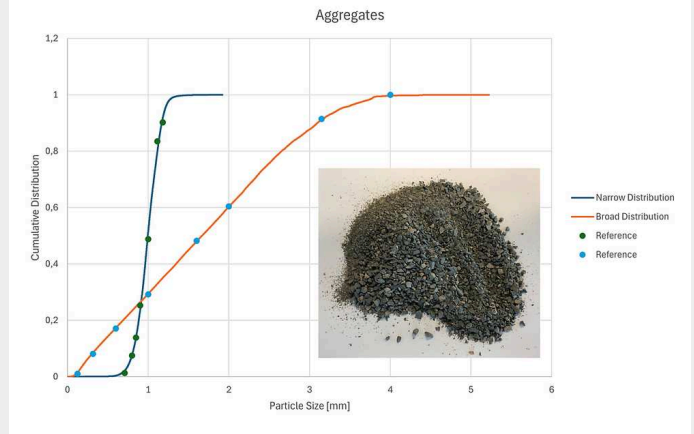
Fertilizers are one of the main applications for Dynamic Image Analysis. The biggest advantage is the fast measurement and high sample throughput, which means that fluctuations in product quality can be detected early, and the process can be adjusted immediately. This reduces the production of rejects and offers real cost savings. A well-adjusted image analysis system provides the complete size and shape distribution of a fertilizer sample within two minutes.



RAPID QUALITY CONTROL

AGGREGATES (CRUSHED ROCK)

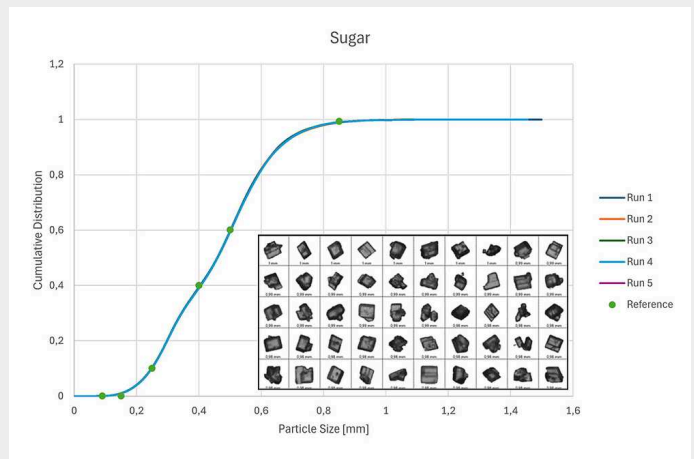
The CAMSIZER S1 can be used for rapid quality control when analyzing aggregates. The device's ability to measure both broadly and narrowly distributed samples with excellent agreement to sieve analysis is impressive. The example shows two samples of crushed rock, one with a size range of 63 μm to 4 mm and one with a narrow grain size range from 710 μm to 1.25 mm.



FAST CHARACTERIZATION

SUGAR

Depending on further use, different sugar size distributions must be produced, e.g. for beverages, baking mixes, confectionery, or household sugar. The CAMSIZER S1 is suitable for the rapid characterization of sugar, which is particularly advantageous during the beet harvest, when a lot of material is produced, as the time-consuming sieve analysis is no longer necessary.



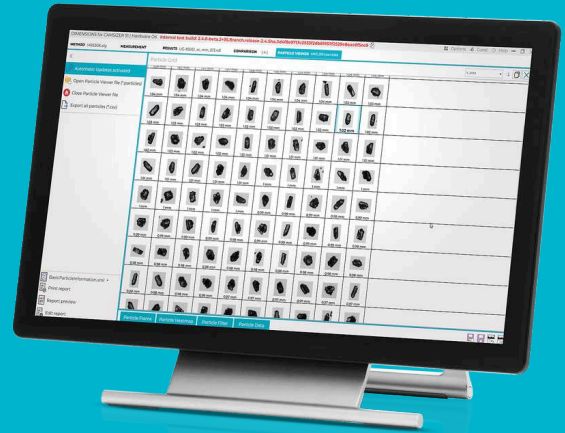
The measurement example shows five measurements of a common sugar sample and the corresponding sieve analysis. Of course, all other free-flowing bulk materials, such as salts, can be measured just as well with the CAMSIZER S1.

To find the best solution for your particle characterization needs, visit our application database

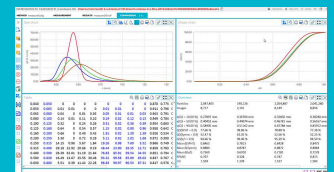
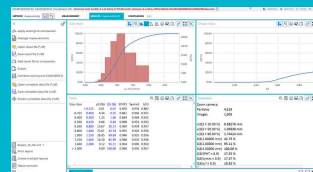
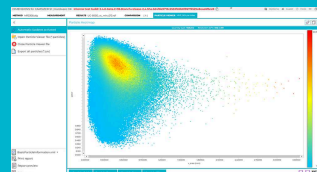
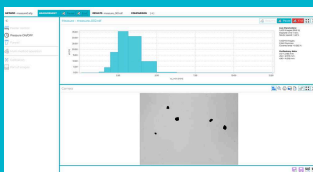
EVERYTHING IN VIEW FROM START TO FINISH

DIMENSIONS SOFTWARE

All parameters at a glance: Dynamic Digital Image Analysis provides a wealth of information about the sample material at hand. The powerful DIMENSIONS software records dozens of parameters on each individual particle and presents the results in a clear, standard-compliant measurement report that can be adapted to individual needs.



- | Intuitive operation
- | Clear arrangement of workspaces
- | User-defined report templates
- | Comparison of measurement results at a glance
- | Newly designed "Particle Viewer" workspace
- | Consistent measurement conditions through SOPs
- | Automatic testing of product specifications
- | Different user levels
- | LIMS connection
- | 21 CFR part 11 compatible version available
- | Advanced 4th generation sieve correlation algorithm



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TECHNICAL DATA



Measuring principle

Dynamic Image Analysis (ISO 13322-2)

Measuring range

30 µm to 5 mm (recommended 50 µm to 4.5 mm)

Parameter(s)

2D particle analysis with basic size and shape definitions

Camera

12.5 Megapixels

Measurement time

approx. 2 to 5 min (depends on required measurement statistics)

Software

Microtrac DIMENSIONS

Dimensions

850 × 650 × 350 mm

Weight

approx. 40 kg

CE certified

yes