

Coffee & Tea

Size analysis of coffee & tea with the CAMSIZER®

Application

The food industry has very strict regulations for the quality control of raw materials as well as final products. This relates not only to their chemical composition and biological aspects but also to the particle size. Size analysis and control of the product appearance is carried out in almost every production



facility, as the particle size and shape not only influence the final products, but are also important indicators for the production process itself.

Demands of quality assurance

Analyzing the particle size of coffee and tea is very important, since it has a great influence on the taste of the final product. The solubility of the ingredients and essences for example depends mainly on the particle size. Important criteria of a

sound quality analysis are e.g. that it has to be reliable, as automated as possible, and fast. Traditionally size analysis is conducted by sieving which has a lot of disadvantages like abrasion, insufficient resolution and high labour costs.

Solution

The CAMSIZER® is perfectly suitable for the size analysis of coffee beans (fresh green and after roasting) and freeze dried (instant) coffee.

Dried herbs like fennel, peppermint or black tea can also be **analysed**

quickly and reliably, even fully automated with the AutoSampler. Fig 1 shows that the CAMSIZER® measurements match the results obtained by sieve analysis.

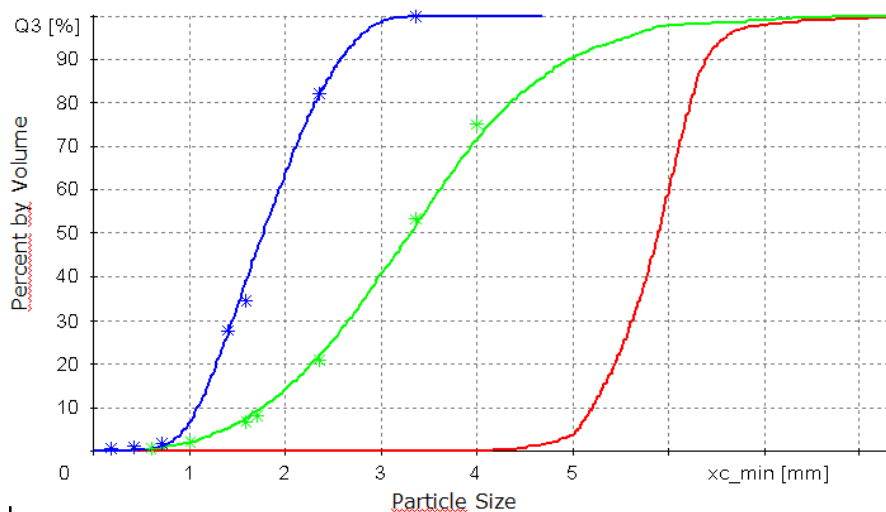


Fig. 1

Freeze dried instant coffee (blue curve)

Roasted beans (green curve) and green coffee beans (red curve)

The sieve results (asterisks) match the CAMSIZER data for all coffee types.

In addition, the CAMSIZER can measure the density of the freeze dried coffee.

CAMSIZER® - Benefits at a glance

- faster results
- less manpower required
- higher resolution than sieving
- high sample throughput
- excellent reproducibility
- larger sample quantities provide better statistics
- more objective, independent of operator
- no abrasion, non-destructive measurement
- fully automated, with AutoSampler
- shape analysis: length and diameter of particles
- density measurement of expanded materials
- easy to use
- different software levels enable operation by unskilled personnel
- maintenance free, robust design



Fig. 2
CAMSIZER® with Autosampler

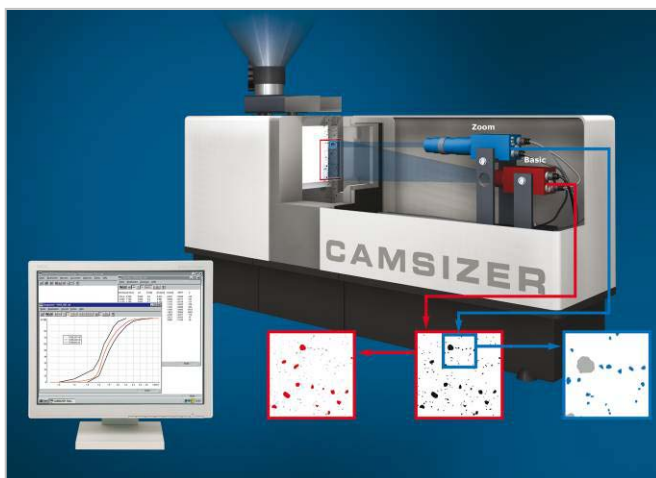
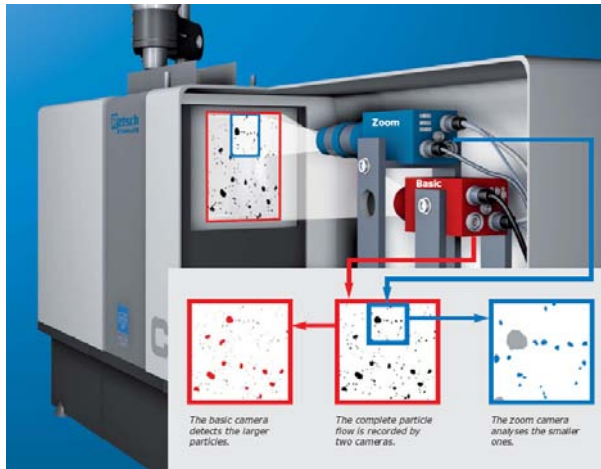


Fig. 3
CAMSIZER®:
two camera system

Measuring Principle



The patented measuring setup of the CAMSIZER – two digital cameras as an adaptive measuring unit – improves and optimises particle analysis by digital image processing. Therefore, it is possible to measure a wide range of particles from 30 μm to 30 mm with extreme accuracy, **without having to switch measuring ranges or make adjustments**. The sample is fed in from the feed channel so that all particles fall through the measurement field. During the measurement procedure the two digital cameras (CCD) perform different tasks. The basic camera (CCD-B) records large

particles, the zoom camera (CCD-Z) records the small ones. The contact-free optical measurement is carried out in real time and simultaneously obtains all the required information about particle size and particle shape. A modularly configurable online version of the instrument has been developed to allow automated measurements to be conducted continuously.

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