Dynamic Foam Analyzer

DFA100

Scientific analysis of liquid foams

Our Dynamic Foam Analyzer – DFA100 measures the foamability of liquids and the foam stability based on precise measurements of the foam height. With optional modules, it also captures the liquid content of the foam or analyzes the foam structure with regard to bubble size and distribution. The DFA100 assists you in the optimization of foam-forming products or, in the case of unwanted foam formation, helps with specific foam prevention.

Tasks and applications

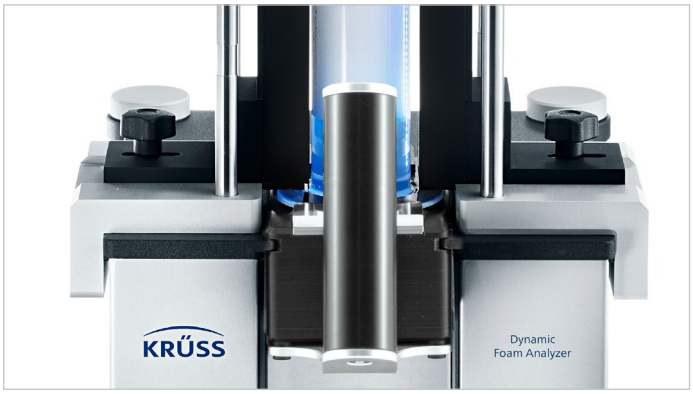
- Foams for washing and cleaning
- Firefighting foams
- Foams in foodstuffs and personal care products
- Surfactant development
- Flotation as a method for separating solids
- Foam-inhibiting and foam-reducing agents (antifoamers/defoamers)
- Foam prevention for paints and varnishes, process and waste water, and cooling lubricants

Measuring methods and options

- Measurement of foamability of liquids and foam decay
- Determination of total height, foam height, and liquid height
- Foaming by means of sparging or stirring
- Investigations of externally produced foams
- Foamability parameters, including maximum height, foam capacity, and foam density
- Temperature-controlled measurements at up to 90 °C
- Foaming with externally connected gases

Reproducible, precise and process-related measurements

A particular strength of the DFA100 is the exceptional reproducibility of foam height measurements thanks to an accurately controlled foaming process with electronic gas flow or stirrer control. The optical sensor measures the quantity of foam produced and the decay characteristic equally precisely, even with very unstable foams. As a result, the instrument reliably covers the whole spectrum from slowly to very quickly decaying foams and is thus used to optimize foam creation or prevention. Further possibilities are temperature control up to 90 °C or foaming with externally connected gases such as carbon dioxide.



Ergonomic sample holder

Simultaneous detection of total, foam, and liquid height

Impressively easy to use

Preparing the measurement and cleaning when finished is especially convenient thanks to a versatile plug-in technique. It even allows one sample to be prepared in the measuring column while another measurement is running. This means more measurements in the same time.

Specifications

Line sensor	
Sensor resolution	1728 × 1 px
Height resolution	200 dpi | 0.125 mm
Temporal resolution	20 fps
Scanning length	216 mm

Operation	
Gas flow rate (internal)	0.2 to 1.0 L/min
Gas flow rate (external)	0.05 to 1.0 L/min
Approved gases	air, nitrogen, carbon dioxide
Approved pressure	5 ± 0.5 bar
Stirring speed	up to 8000 rpm
Approved temperature	4 to 90 °C

Illumination	
Type	LED
Wave length, dominant	469 nm (IR: 850 nm)

Analyzed characteristics	foamability and foam stability
Results	■ foam, liquid, and total height ■ foam capacity ■ maximum foam density ■ expansion rate ■ foam half life time ■ drainage half life time ■ sample temperature