

Drop Shape Analyzer DSA30



Drop Shape Analyzer – DSA30E
(Expert configuration)



Contact angle measurement in quality control

The Drop Shape Analyzer – DSA30 is a robust instrument which can be used flexibly for the precise measurement of contact angle and surface free energy (SFE). With high-quality components and various automation options, the DSA30 analyzes wetting and adhesion on solid surfaces. Fast measurements and simple operation make the instrument a valuable part of your routine quality control.

Tasks and applications

- Characterization of surface pretreatment processes
- Investigation of the adhesion and stability in bonding and coating processes
- Checking the wettability of plastic, glass, ceramic, wood, or metal
- Validating surface cleanliness

Measuring methods and options

- Contact angle between a liquid and a solid
- Surface free energy from contact angles of several test liquids using all common models
- Static contact angle, advancing angle, and receding angle
- Fiber contact angle using the Meniscus method
- Measurement of surface tension and liquid-liquid interfacial tension using the pendant drop method
- Measurements on inclined surfaces
- Temperature-controlled measurements from -30 to 400 °C
- Measurements at controlled humidity

Automated positioning for complete sample analyses

The DSA30 can be fitted with three software-controlled axes. These move the sample accurately and quickly to all programmed measuring positions. This makes it possible to carry out complete, standardized analyses, which is ideal for quality control. Moreover, wetting can be analyzed dependent on the sample position to check for homogeneity or to assess differences between coated and uncoated areas, for example.



Drop Shape Analyzer – DSA30S
(Standard configuration)



Drop Shape Analyzer – DSA30B
(Basic configuration)

Reliable drop shape analysis thanks to high imaging quality

A high-resolution camera and a high-quality zoom lens ensure an accurate representation of the drop with optimal size. The high image quality that this achieves leads to a precisely measured contact angle or surface tension (SFT). Combined with the intelligent image evaluation algorithm of the ADVANCE software, drop shape analysis with the instrument provides exact results.

Specifications

Camera system

Performance CF04: 2.3 Mpix, up to 2300 fps
CF10: 5.3 Mpix, up to 3450 fps

Illumination

Type high power monochromatic LED

Dosing system

Max. dosing units 2 syringe dosing units + Liquid Needle,
4 liquids, software-controlled

Multi-dosing system (optional)

Syringes/liquids up to 4 software-controlled + 1 manual

Internal tilting

Range 0 to 90°
Resolution 0.01°

Contact angle

Range 0 to 180°
Resolution 0.01°

Interfacial and surface tension

Range 0.01 to 2000 mN/m
Resolution 0.01 mN/m