

Drop Shape Analyzer DSA100L



Automated wetting analysis of large samples

With the special version DSA100L of our Drop Shape Analyzer – DSA100, the instrument is fitted in a particularly wide frame and equipped with a large, rotating sample table plus an extra-long movement axis. Thanks to an adapted arrangement of the optics which is above the sample, almost the whole frame width is available for samples with an area of up to 500 × 500 mm.

Tasks and applications

- Characterization of large, pretreated surfaces
- Investigation of the cleanliness of windows and frames
- Surface analysis for monitors and touch panels
- Characterization of automobile parts before coating or bonding
- Hydrophobicity analysis of ceramic tiles

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
- Measurement of surface tension and liquid-liquid interfacial tension
- Position-dependent surface free energy and contact angle measurement (mapping)

Software-controlled analysis of the whole sample

The heart of the DSA100L is a software-controlled setup of a large rotating sample table mounted on an extra-long horizontal axis. The ADVANCE software controls the measurement automatically based on standardized measuring procedures. In doing so, positions, which have been defined and stored in a template, are approached and measured one after the other. This ensures a fast and completely standardized measuring procedure with high sample throughput.



Fast, automated sample mapping of the surface free energy with an optional Liquid Needle dosing unit

Reliable drop shape analysis thanks to high imaging quality

The DSA100L features a high-resolution camera and a quality zoom lens for accurate display of the drop with optimum size. The high image quality that this achieves leads to a precisely measured contact angle. Combined with the intelligent image evaluation algorithm of the ADVANCE software, drop shape analysis with the instrument provides exact results.

Specifications

Camera system		Contact angle	
Performance	CF04: up to 2300 fps CF06: up to 3400 fps	Range	0 to 180°
		Resolution	0.01°
Illumination		Interfacial and surface tension	
Type	high power monochromatic LED	Range	0.01 to 2000 mN/m
		Resolution	0.01 mN/m
Dosing system		Sample dimensions	
Dosing	software-controlled syringe	Max. sample space	700 × ∞ × 275 mm (W × D × H)
Liquid Needle dosing (optional)		Max. measuring surface	500 × 500 mm (W × D)
Resolution	0.1 µL	Instrument dimensions	
		Footprint	1000 × 375 mm (W × D)
		Height	490 mm