

# KRUSS DSA100 DROP SHAPE ANALYSER



## Overview

The Kruss DSA100E is used for the measurement of contact angle and surface free energy of a solid sample and the surface tension of a liquid.

The **contact angle** (wetting angle) is a measure of the wettability of a solid by a liquid. When an interface exists between a liquid and a solid, the angle between the surface of the liquid and the outline of the contact surface is described as the contact angle  $\theta$  (lower case theta).

**Surface free energy** is the energy associated with the intermolecular forces at the interface between two media.

**Surface tension** is the attractive force exerted upon the surface molecules of a liquid by the molecules beneath that tends to draw the surface molecules into the bulk of the liquid and makes the liquid assume the shape having the least surface area.

## Capability profile

Measurement types

**Sessile drop:** Contact angle 0-180° resolution 0.01°, accuracy 0.3°, models available: conic section, polynom, circle, Young-Laplace, height-width.

**Surface free energy:** models available, equation of states, Zisman, Fowkes, Wu, Owens-Wendt-Rabel-Kaelble, Schultz-1, Schultz-2, extended Fowkes, acid-base theory.

**Pendant drop:** (static and dynamic) Interfacial and surface tension, range 0.01 to 2000mN/m, resolution 0.01Mn/m accuracy 0.3mN/M ( Young-Laplace model).

**Sample dimensions:** 320 mm × ∞ × 275 mm (W × D × H) via software controlled x,y,z stage.

**Dosing system:** software-controlled (4×) dosing units for multiply liquids + manual (1×); resolution 0.1ul with glass syringe, Speed 10 to 1400ul/min.