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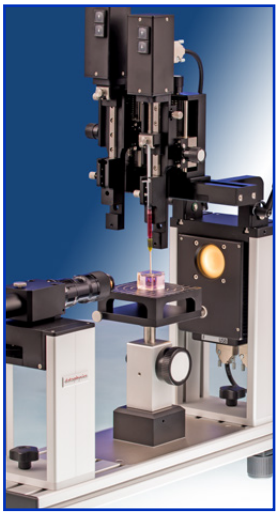
instruments

OCA 15EC

The entry level contact angle measuring and contour analysis system



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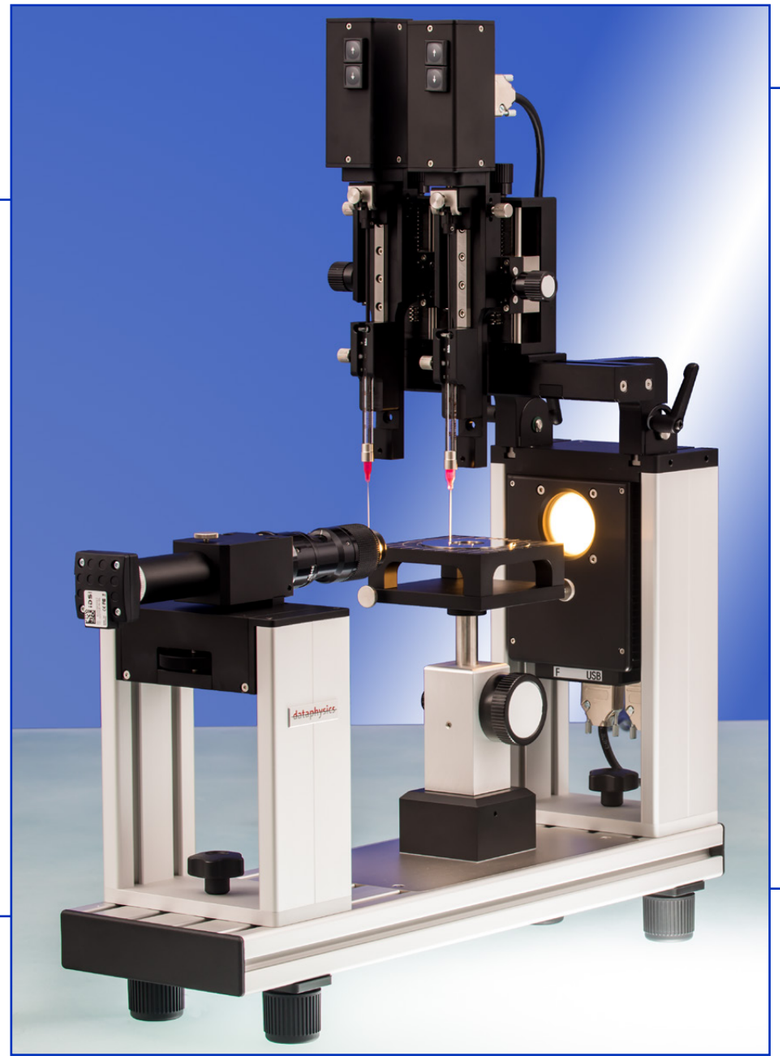
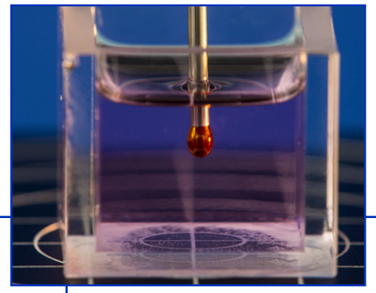
analysis of the roll off angle with an OCA 15EC on electronic tilting base unit TBU 95

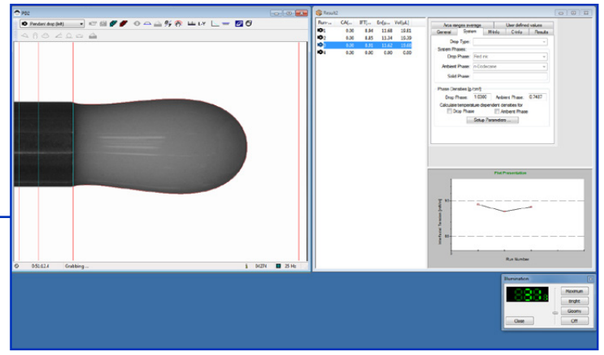
The **OCA 15EC** is the entry level measuring device for professional contact angle measurements and drop shape analysis. The OCA 15EC can be easily disassembled for transportation in the optional case. For a convenient access to the surface and interfacial measurement techniques two pre-configured packages are available which include all necessary components to start right away.



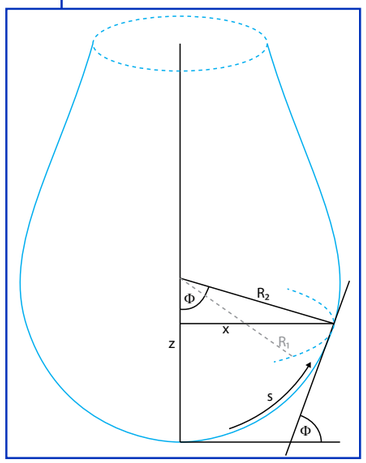
Contact angle measurement with an OCA 15EC with double direct dosing system DD-DM



interfacial tension determination with pendant drop method



SCA 22 — analysis of the interfacial tension



schematic contour analysis of a pendant drop

Software for efficient work
The SCA software, designed for Microsoft Windows®, is the modular program for all OCA instruments. The available software modules for the OCA 15EC are:

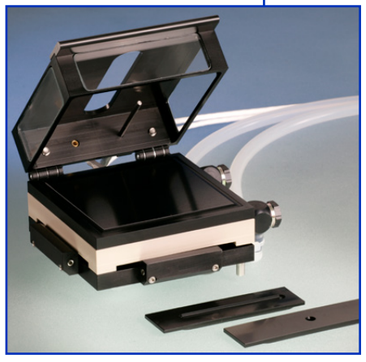
SCA 20 — contact angle
- video based measurement and presentation of the static and dynamic contact angle on plane, convex, and concave surfaces
- automatic measurement of the contact angle hysteresis
- record/store of image sequences
- statistics and measurement error analysis
- liquids and solids database

SCA 21 — surface free energy
- analysis of the surface free energy of solids as well as its components (e.g. dispersive, polar and hydrogen bond parts, acid and base portions) according to nine different theories
- calculation and representation of wetting envelopes and work of adhesion/ contact angle diagrams

SCA 22 — surface/interfacial tension
- analysis of the surface and interfacial tension, as well as their polar and dispersive parts, based on the analysis of the shape of pendant drops

SCA 23 — liquid bridge analysis
- analysis of the surface and interfacial tension based on the evaluation of the lamella contour
- innovative liquid bridge analysis of 3 phase systems

SCA 26 — oscillation / relaxation
- analysis of the real and imaginary part of the interfacial dilatational modulus based on the oscillating or relaxing contour of pendant drops

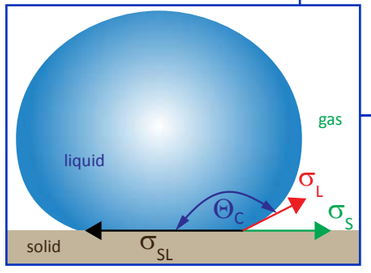


liquid temperature control unit TFC 100Pro for temperatures of -10...100 °C

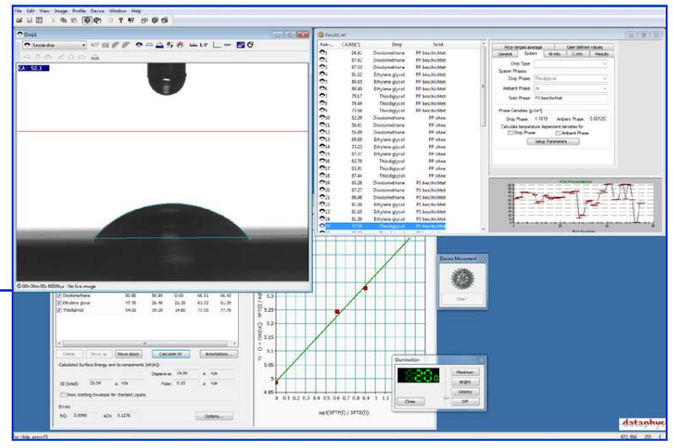
The **OCA 15EC Package 1** consists in addition to the base unit of a single direct dosing system SD-DM, one electronic syringe unit ESr-N and the software module SCA 20.

The **OCA 15EC Package 2** consists in addition to the base unit of a double direct dosing system DD-DM, two electronic syringe units ESr-N and the software module SCA 20.

Main features:
- Sample table horizontally movable (magnetic slide system) and adjustable vertically with precision mechanics
- high performance 6-times zoom lens
- integrated continuous fine focus, and adjustable observation angle
- video measuring system with USB camera (max. 311 frames/s),high-speed camera easily upgradable (up to 3000 frames/s)
- LED-lighting with manual and software controlled intensity including automatic temperature drift compensation



contact angle of a sessile drop



SCA 20 and 21 — contact angle measurement and surface free energy determination

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Technical data

Max. sample dimensions (L x W x H):	• 220 x ∞ x 70 mm^3
Sample table dimensions (L x W):	• 100 x 100 mm^2
Traversing range of sample table in X-Y-Z direction:	• 110 x 90 x 42 mm^3
Measuring range for contact angles:	• 0...180°; ± 0.1° measuring precision of the video system
Measuring range for surface and interfacial tensions:	• $1 \cdot 10^{-2}$... $2 \cdot 10^3$ mN/m; resolution: min. ± 0.01 mN/m
Max. sample weight:	• 3.0 kg; 15.0 kg with clamped sample table
Optics and image processing system:	• LED-lighting with manual and software controlled intensity including automatic temperature drift compensation • USB 2.0 camera, max. resolution 752 x 480 pixel, max. frame rate 311 frames/s • 6-fold zoom lens with integrated fine focus (± 6 mm) • field of view: 1.05 x 0.66...6.72 x 4.25 mm^2 • optical distortion: < 0.05 %
Dimensions (L x B x H):	• 550 x 160 x 365 mm^3
Weight:	• 14 kg
Power supply:	• 100...240 V AC; 50...60 Hz; 70 W

Accessories (excerpt)

manual direct dosing systems **SD-DM** and **DD-DM** with corresponding electronic syringe units **ESr** • electronic tilting base unit **TBU 95** • temperature and environmental control chambers (-30...700 °C) • syringe heating device **SHD** (up to 90 °C) • holders for foils or papers **FSH 30** and **FSC 80/150** • sample table with holding clamps **STC 100** • film or foil sample stage **FHM 100** • suction plate **SP 100** for holding thin flexible samples flat on the stage • electro wetting platform **EWP 100**

For more information about a tailor made solution to your surface chemistry requirements, please contact us. We will be pleased to provide a quotation, obligation free, for your instrument system.

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