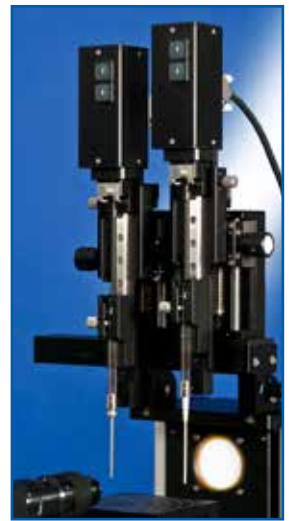


OCA 15Pro
Video-based contact angle
measuring instrument





Electronic 2-fold dosing system
E-MDr/2

Features of the OCA 15Pro

The video-based optical contact angle measuring system OCA 15Pro is the affordable entry to the world of professional contact angle measurement and drop shape analysis.

The **OCA 15Pro Package** consist of a single direct dosing system SD-DM, an electronic dosing unit ESr-D, and the software modules SCA 20 and SCA 21.

The expandability with an additional electronic syringe units ESr, one temperature and environmental control system (TFC 100Pro, TC 150Pro, or TC 400Pro), and one software controllable unit (E-MDr/2, DDE/1, DDE/2, TBU 95 or ETTr/VAC) broadens the number of possible applications.

The OCA 15Pro is upgradable to an OCA 25.

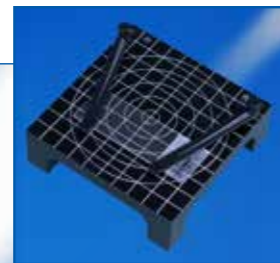
Components and accessories

- Sample table with manual adjustment in three axis by high-precision mechanics
- High performance 6x parfocal zoom lens with integrated continuous fine focus, and adjustable observation and camera tilt angle



OCA 15Pro with double direct dosing system DD-DM and 2 electronic syringe units ESr-D

Sample table with holding clamps STC 100



OCA 15Pro with electronic tilting base unit TBU 95, manual direct dosing unit DD-DM, and 2 ESr-D

- Video measuring system with USB camera (123 images/s), easily upgradable with the high-speed option UpUSB 1/2H (max. 219 images/s) or the high-speed video system UpHSV 1220 (max. 1220 images/s) or UpHSV 3000 (max. 3000 images/s)
- LED-lighting with manual and software controlled intensity without hysteresis
- Single or double direct dosing system SD-DM / DD-DM for use with standard and disposable syringes and needles
- Up to two electronic syringe units ESr-D, software controlled dosing rate of 0.4 nl/s...174 µl/s
- Temperature and environmental control system (-30...400 °C)

One of the following software controlled system components:

- Electronic 2-fold dosing system E-MDr/2 for the precise automatic positioning of two dosing needles
- Electronic direct dosing system DDE/1 or DDE/2
- Electronic tilting base unit TBU 95 (maximum tilt angle 95°)

- Electronic turn table with vacuum fixation ETTr/VAC and wide range of various top plates
- Wide range of sample holding units like holders for foils or papers FSH 30 and FSC 80/150, sample table with holding clamps STC 100, film or foil sample table FHM 100, or the suction plate SP 100 for holding thin flexible samples flat on the stage with an adjustable suction area
- Top view video system TV-VS for the qualitative documentation of the drop position (USB camera with 123 images/s, 6x parfocal zoom lens and adjustable observation angle)

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 15Pro 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 with currently more than 170 records for all surface energy analysis methods including related citations

SCA 21 — surface free energy

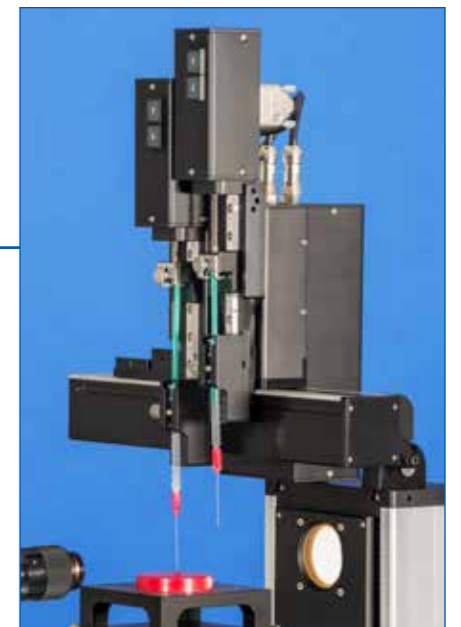
- Analysis of the surface free energy of solids as well as their components (e.g. dispersive, polar and hydrogen bond parts, acid and base portions) according to nine different theories
- Representation of wetting envelopes and work of adhesion/contact angle diagrams

SCA 22 — surface and interfacial tension

- Analysis of the surface and interfacial tension, as well as their polar and dispersive contributions, based on the analysis of the drop shape of pendant drops

SCA 23 — lamella and liquid bridge analysis

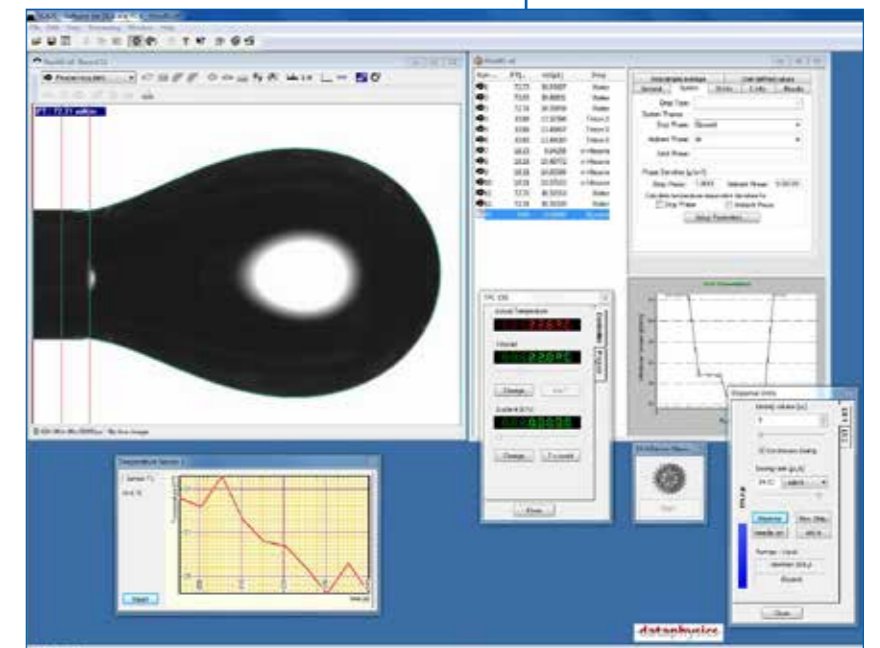
- Analysis of the surface and interfacial tension based on the evaluation of the lamella contour
- Innovative liquid bridge analysis of 3 phase systems.



Electronic direct dosing system DDE/2 with 2 ESr-D



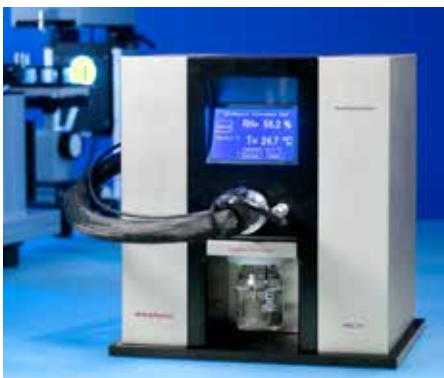
Film or foil sample table FHM 100



SCA 20 and SCA 22 – measurement of surface tension

Technical data

Max. sample dimensions (L x W x H):	• 220 x ∞ x 70 mm, 8"-Wafer
Sample table dimensions:	• 100 x 100 mm
Traversing range of sample table in x-y-z direction:	• 100 x 104 x 42 mm
Max. sample weight:	• 3.0 kg; 15.0 kg clamped
Measuring range for contact angles:	• 0 ... 180 °; ± 0.1 ° measuring precision of the video system
Measuring range for surface and interfacial tensions:	• 1·10 ⁻² ... 2·10 ³ mN/m resolution: ± 0.01 mN/m
Optics:	• 6-fold zoom lens (0.7 ... 4.5 magnification) with integrated fine focus (± 6 mm) • LED-lighting with manual and software controlled adjustable intensity without hysteresis
Video system:	• USB camera, max. resolution 768 x 576 pixel, max. sample rate 123 images/s, field of view 1.32 x 0.99...8.50 x 6.38 mm • Image distortion < 0.05%
Temperature measurement:	• Only with TFC 100Pro, TC 150Pro, or TC 400Pro: -200...850 °C; 0.1 K accuracy
Measuring techniques:	• Sessile and captive drop method, tilting table/base method • Pendant drop method • Lamella method • Liquid bridge analysis
Dimensions (L x W x H):	• 660 x 230 x 365 mm
Weight:	• 16 kg
Power supply:	• 100...240VAC; 50...60 Hz; 70 W



Humidity Generator and Controller HGC 20

Our modular design philosophy allows countless variations

The contact angle measuring instruments within the OCA series benefit from our modular design philosophy. Our instrument/accessory range offers the opportunity to construct a device (optics, sample environment, dosing system) best suited for providing a solution for your individual surface/interfacial challenges.

The latest development within the *OCA accessory range*, the **Humidity Generator and Controller HGC 20EC, HGC 20, and HGC 30**, is designed for the automated regulation of the relative humidity.

It is easily connectable to a temperature controlled measuring chamber like the TFC 100Pro or TPC 150.

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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