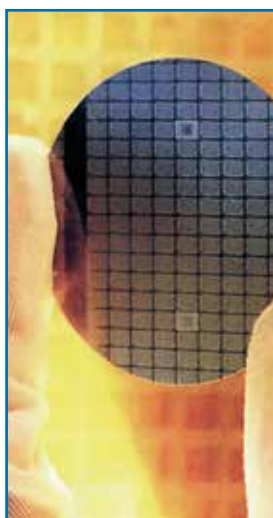
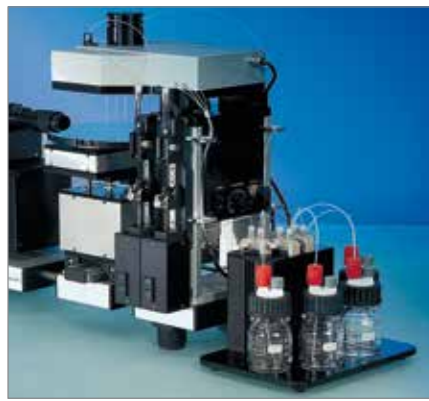


# OCA 35

Fully automatic video-based  
contact angle measuring and  
contour analysis instrument





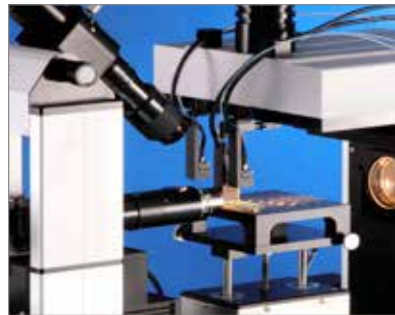
Refill and rinse system with liquid pump cleaner RRS-LPC 3/1

### Features of the OCA 35

The OCA 35 is the instrument for the fully automatic timesaving analysis of the wettability of solid surfaces, the surface free energy of solids. The automated sequence of tests and the video-based optical image processing facilitates the analysis of simple and complex sample structures at the 'push of a button'. For bigger samples (e.g. 12" Wafers) the OCA 35L with long X- and Y-axis is available.

### Components and accessories

- sample table motorized, software controlled adjustable in X-, Y- and Z-axis
- high performance 6x parfocal zoom lens with an integrated continuous fine focus, and adjustable observation angle
- video measuring system with USB camera (123 images/s), easily upgradable

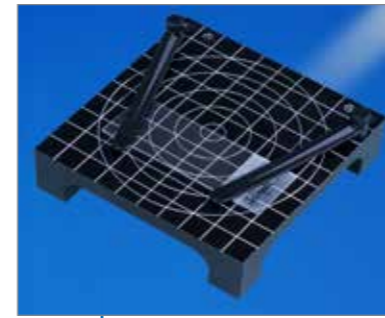


Nanodrop dosing system



Fully automatic mapping on 12" wafer with OCA 35XLH, ETT/VAC, WTP 12/VAC and TD-DE/3

- ble with different high-speed options (up to 2200 images/s)
- LED-lighting with software controlled intensity without hysteresis
- electronic multiple dosing systems E-MD for the precise automatic positioning of up to six dosing needles
- direct dosing systems SD-DM, DD-DM, TD-DE/3 and SD-DE
- up to six electronic syringe units ES,



STC 100



OCA 35/6 on tilting base unit TBU 90E with electronic turn table with vacuum fixation ETT/VAC and electronic multiple dosing system E-MD/6

- dosing volume controlled by software (min. 50 nl) and dosing rate (0.06 µl/s...26.4 µl/s)
- electronic tilting base unit TBU 90E (maximum tilt angle of 90°)
- electronic turn table with vacuum fixation ETT/VAC (top plates up to 12" diameter)
- temperature and environmental controlled chambers (-30...700 °C)
- needle heating devices NHD (up to 700 °C)
- 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 stage FHM 100, for single fibers FHO 40plus, or the suction plate SP 100 for holding thin flexible samples flat on the stage with an adjustable suction area
- oscillating drop generator ODG 20 for the measurement of surface elasticities

- and for relaxational studies at phase boundaries
- electro wetting platform EWP 100 for the analysis of sessile and pendant drops under a well definable electrical field
- top view video system TV-VS for the qualitative documentation of the drop position (USB camera with 90 images/s, 6x parfocal zoom lens and adjustable observation angle)
- refill and rinse system with liquid pump cleaner RRS-LPC 3/1

### 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 35 models 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 — pendant drop

- 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

### SCA 26 — oscillation / relaxation

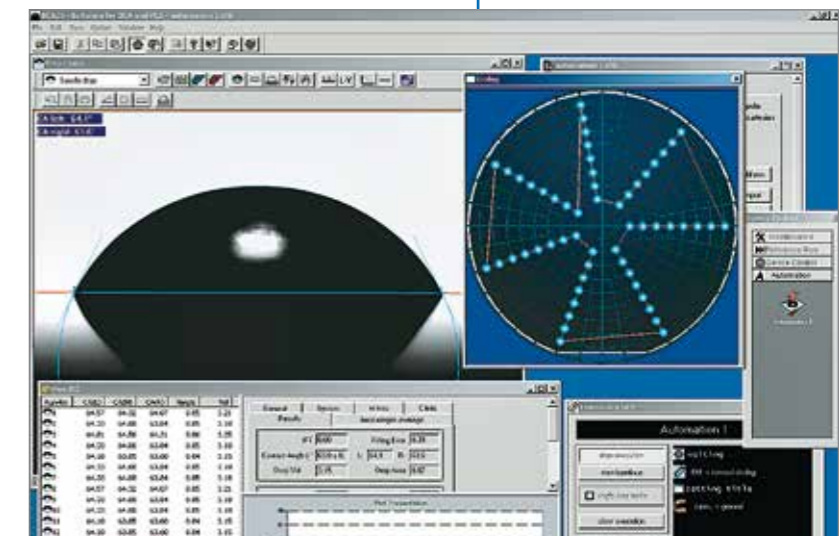
- analysis of the real and imaginary part of the interfacial dilatational modulus based on the oscillating or relaxing contour of pendant drops.



Top view video system TV-VS



Wafer top plates WTP 6/VAC, 8/VAC, and 12/VAC

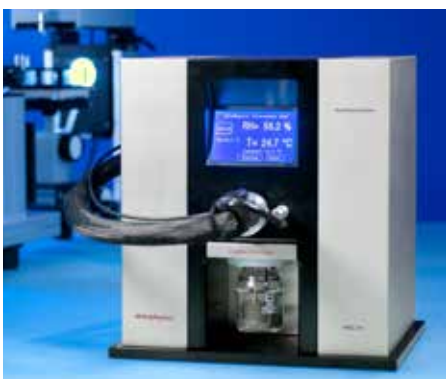


SCA 20 — fully automatic wafer mapping



## Technical data

Max. sample dimensions (L x W x H):	<ul style="list-style-type: none"> <li>• 220 x 2 x 70 mm, 8"-Wafer on WTP 8/VAC</li> <li>• 330 x 2 x 70 mm, 12"-Wafer on WTP 12/VAC (OCA 35L)</li> <li>• 510 x 2 x 120 mm, 500 mm square samples on SQT 350 (OCA 35XLH)</li> </ul>
Sample table dimensions:	• 100 x 100 mm
Traversing range of sample table in X-/Y-/Z-direction:	<ul style="list-style-type: none"> <li>• 100 x 100 x 50 mm</li> <li>• 285 x 300 x 50 mm (OCA 35L and OCA 35XLH)</li> </ul>
Max. sample weight:	• 10.0 kg
Electronic positioning accuracy in X-/Y-/Z-direction:	• ± 0.65 µm
Measuring range for contact angles:	• 0...180 °; ± 0.1 ° measuring precision of the video system
Measuring range for surface and interfacial tensions:	• 1·10 <sup>-2</sup> ... 2·10 <sup>3</sup> mN/m resolution: ± 0.01 mN/m
Optics:	<ul style="list-style-type: none"> <li>• 6-fold zoom lens (0.7 ... 4.5-fold magnification) with integrated fine focus (± 6 mm)</li> <li>• LED-lighting with software controlled adjustable intensity without hysteresis</li> </ul>
Video system:	<ul style="list-style-type: none"> <li>• USB-CCIR camera, max. pixel 768 x 576 resolution, max. sample rate 123 images/s, field of view 1,32 x 0,99...8,50 x 6,38 mm</li> <li>• Image distortion &lt; 0.05 %</li> </ul>
Temperature measurement:	• Integrated temperature measurement and digital display 2 x Pt 100 inputs for -60...700 °C
Dimensions (L x W x H):	<ul style="list-style-type: none"> <li>• 640 x 280 x 370 mm</li> <li>• 900 x 470 x 370 mm (OCA 35L)</li> <li>• 950 x 470 x 410 mm (OCA 35XLH)</li> </ul>
Weight:	<ul style="list-style-type: none"> <li>• 20 kg</li> <li>• 26 kg (OCA 35L)</li> <li>• 27 kg (OCA 35XLH)</li> </ul>
Power supply:	• 100...240 VAC; 50...60 Hz; 100 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 frame 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 temperature controlled measuring chamber like the TFC 100 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.**

DataPhysics Instruments GmbH • Raiffeisenstraße 34 • 70794 Filderstadt, Germany  
 fon +49 (0)711 770556-0 • fax +49 (0)711 770556-99  
 sales@dataphysics.de • www.dataphysics.de

**Your sales partner:**