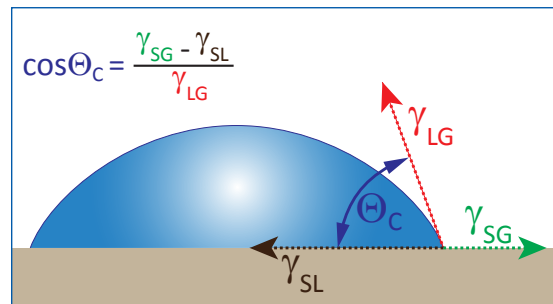


# OCA 15EC

Video-based optical contact  
angle measuring instrument





Sessile drop schematic showing the quantities of Young's equation

#### Features of the OCA 15EC

Whether your application demands the evaluation of contact angle or drop shape, the video-based optical contact angle measuring system, OCA 15EC, is the instrument of choice where initial budgets are limited.

The **OCA 15EC Package 1MAX** consist of a single direct dosing system SD-DM, one electronic dosing unit ESr-N, and the software module dpiMAX20P.

The **OCA 15EC Package 2MAX** consist of a double direct dosing system DD-DM/EC, two electronic dosing units ESr-N, and the software modules dpiMAX20P and dpiMAX 21P. The OCA 15EC can be easily broken down for transportation in the optional case TBO.



OCA 15EC Package 2MAX incl. DD-DM/EC, two ESr-N, dpiMAX20P and dpiMAX 21P



OCA 15EC Package 1MAX incl. SD-DM, ESr-N, dpiMAX20P

#### Components and accessories

- Sample table manual movable (magnetic slide system) in horizontal and precise adjustable in vertical (z-axis) direction via hand wheel
- High performance 6.5x parfocal zoom lens with integrated continuous fine focus and adjustable observation and camera tilt angle
- Video measuring system with USB camera max. resolution 1440 x 1080 pixel with 227 frames/s, max. frame rate 3246 frames/s

- LED-lighting with manual and software controllable intensity without hysteresis
- Single or double direct dosing system SD-DM / DD-DM/EC for use with standard and disposable syringes and needles
- Up to two electronic syringe units ESr-N, software controlled dosing rate of 0.4 nl/s...174 µl/s
- Temperature and environmental control systems TFC 100Pro (-10...100 °C) and TPC 150 (-30...160 °C)
- Wide range of sample holders, incl. units for foils or papers FSH 30 and FSC 80/150, or the suction plate SP 100 for holding thin flexible samples flat on the stage with an adjustable suction area

- Electro wetting platform EWP 100 for the analysis of sessile and pendant drops under a definable electrical field

**Software for efficient work** DataPhysics is specialised in the development of high-precise and reliable methods for evaluating drop contours in combination with statistical error analysis. The dpiMAX software assists you in the intuitive use of the video-based optical contact angle measuring instrument OCA 15EC by specifying measurement procedures and in collecting, assessing, and evaluating the measured data.

The dpiMAX software is designed as a modular program for all OCA instruments running under Microsoft Windows. The available software modules for the OCA 15EC are:

#### dpiMAX 20P — contact angle professional

- 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 cur-



Liquid temperature control unit TFC 100Pro

rently more than 170 records for all surface energy analysis methods including related citations

#### dpiMAX 21P — surface free energy - professional

- 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

#### dpiMAX 22 — surface and interfacial tension

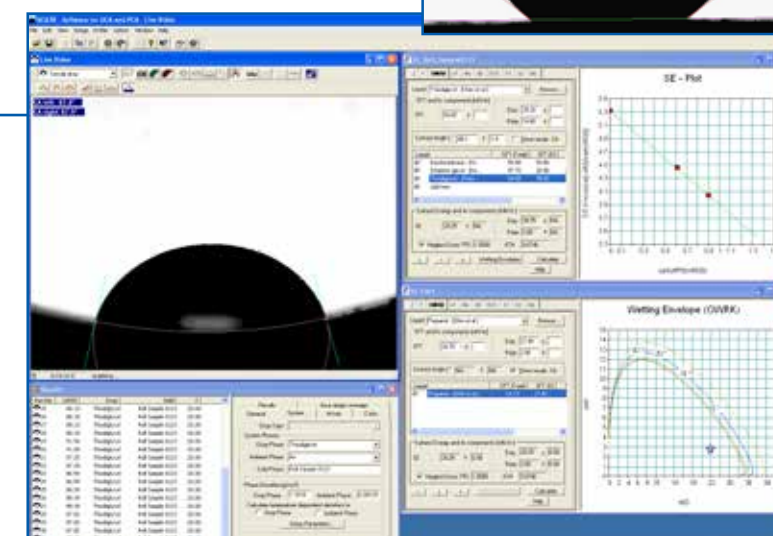
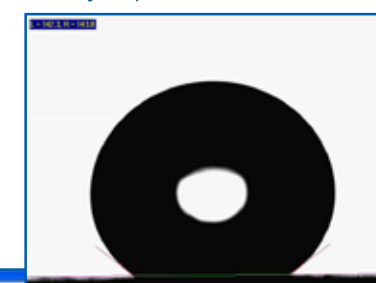
- Analysis of the surface and interfacial tension, as well as their polar and disper-

sive contributions, based on the analysis of the drop shape of pendant drops



Film sample holder FSC 80

Water drop on an ultrahydrophobic substrate



dpiMAX 20P and dpiMAX 21P – measuring and evaluating the wetting properties of solids

## Technical data

Max. sample dimensions (L x W x H):	• 220 x ∞ x 70 mm
Sample table dimensions:	• 100 x 100 mm
Traversing range of sample table in x-y-z direction:	• 110 x 90 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:	• 0.01 .... 2000 mN/m resolution: ± 0.01 mN/m
Optics:	• 6.5 -fold zoom lens with integrated manual focus (± 6 mm) • LED lighting with manual and software controlled adjustable intensity without hysteresis
Video system:	• USB 3.0 camera, max. resolution 1440 x 1080 pixel, max. sample rate 227 frames/s, max. frame rate 3246 frames/s with 1448 x 60 pixel • field of view 1.11 x 0.83 mm to 7.14 x 5.35 mm
Measuring techniques:	• Sessile and captive drop method, tilting table method • Pendant drop method • Oscillation / relaxation • Liquid bridge analysis
Dimensions (L x W x H):	• 550 x 160 x 365 mm
Weight:	• 14 kg
Power supply:	• 100...240VAC; 50...60Hz; 70 W



Transport case TBO for OCA 15EC

## Accessories

The OCA 15EC shares a common feature with all the other contact angle measuring instruments of the OCA series – the *OCA accessory range*.

- Liquid temperature control unit **TFC 100Pro** • syringe heating device **SHD** • peltier temperature control unit **TPC 150** • minute droplet kit **MDK 15** • film or paper sample holder **FSC 80**
- film sample holder **FSH 30** • holder for single fibres and hairs **FHO 40 plus** • suction plate **SP 100** • optical contact angle and drop shape standards **OCAS** • dispersive solid reference surface **SFE-DS** • electrowetting platform **EWP 100** • dosing syringes **DS xx**
- dosing needles for sessile drop measurements **SNS xx** • dosing needles for pendant drop measurements **SNP xx** • hydrophobization kit for dosing needles **HY-Kit** • dosing needles for captive bubble measurements **SNC xx** • glass cuvettes for captive bubble measurements **GC xx** • Transport case **TBO** • PC systems or notebooks.

**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:

Türkiye Tek Yetkili Distribütörü:

**MikroLab Teknik Cihazlar**

**Mühendislik Danışmanlık Tic. Ltd. Şti.**

www.DataPhysics.com.tr

info@DataPhysics.com.tr

Tel : +90 216 709 74 48