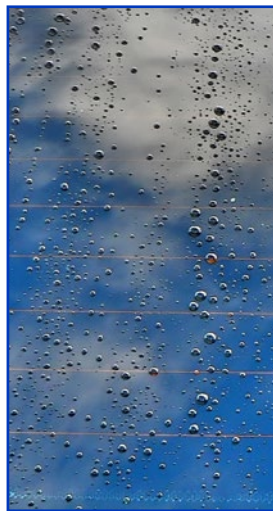


PCA 100M/R

Portable contact angle measuring system
for process control and
integration into a production line





portable contact angle measuring system
PCA 100M/4 for using up to four test liquids

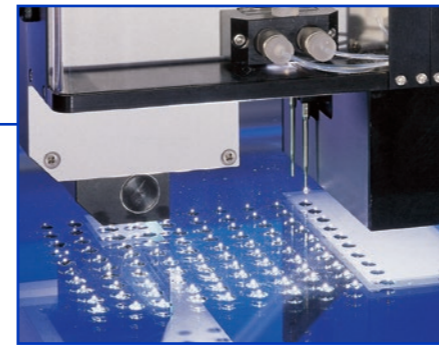
A continuous production control can prevent expensive product recalls. But often ready-made products are too large or too heavy for measuring systems designed for laboratory use like the DataPhysics OCA series. With the portable contact angle measuring system **PCA 100M** from DataPhysics the measuring device can be simply put on top of the sample. The PCA 100M allows for a nondestructive material test even on large surfaces like whole windshields, car body parts, large-scale wafers or compound materials. Due to contact angle measurements and the determination of the surface energy, the quality of a coating or the sample cleanliness after a cleaning procedure can be evaluated directly during the production process. The PCA 100M can be used almost anywhere, even in a clean room, thanks to the compact design and the easy connection to a laptop or an on-site PC. With the optional laboratory stand PCA-MS the PCA 100M can also be used as a laboratory device.



PCA 100M/4 on a laboratory stand PCA-MS for laboratory use

Main features

- Video measuring system with high-performance telecentric lens with integrated aperture and adjustable observation angle
- lighting with software-controlled intensity
- integrated multiple dosing system for two (**PCA 100M/2**) or four (**PCA 100M/4**) test liquids
- Integrated automatic refill system with flushing and cleaning functions for dosing up to 5000 drops per liquid receptacle
- optional adapter for measurements of the surface and interfacial tension based on the evaluation of pendant drops
- optional laboratory stand PCA-MS for laboratory use
- USB connection box for power supply and communication with the PCA 100M



automatic surface mapping
with the robot guided PCA 100R

In combination with single and multi axes robots the **PCA 100R** can be used to directly integrate an automated surface analysis into the production process. An appropriate robot cell is being designed according to customer needs and hence fits perfectly to the samples. Individually adapted control software ensures a smooth transfer of the samples between the PCA 100R and other robot systems. Hence an automatic and reliable control of surface properties even inside a production line is guaranteed.

Software for an efficient workflow

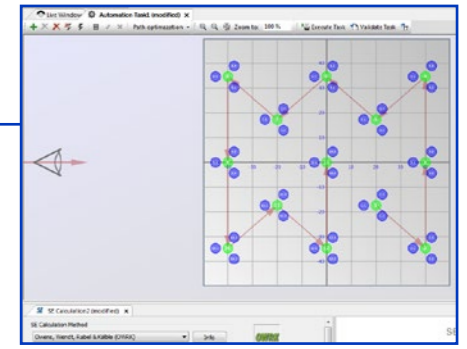
The SCA software is designed as a modular program for Microsoft Windows®. The available software modules for the PCA 100M/R are:

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 energy

- analysis of the surface 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



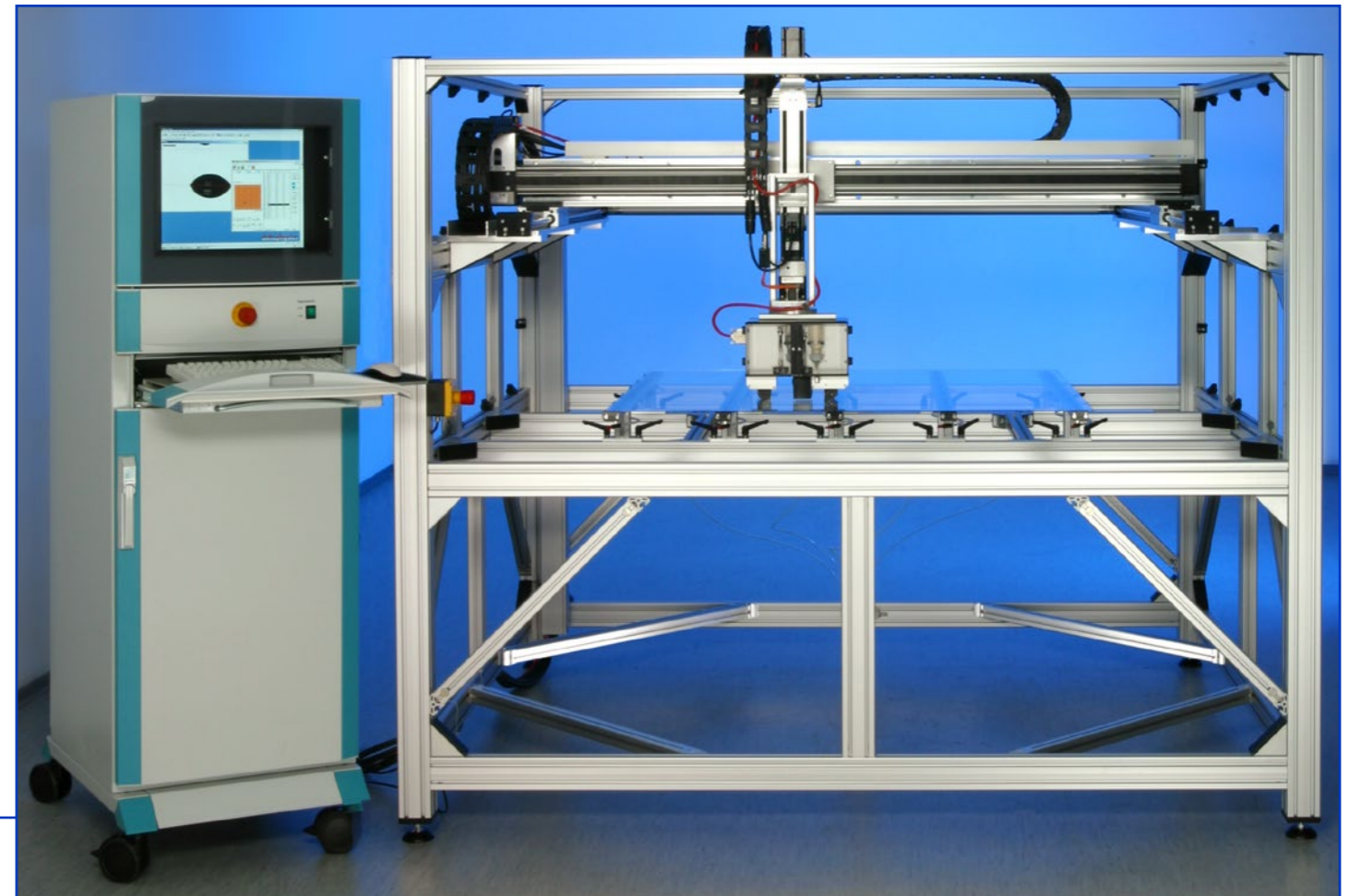
software controlled drop positioning
for automated measuring procedure

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

Additional robot control software SRC

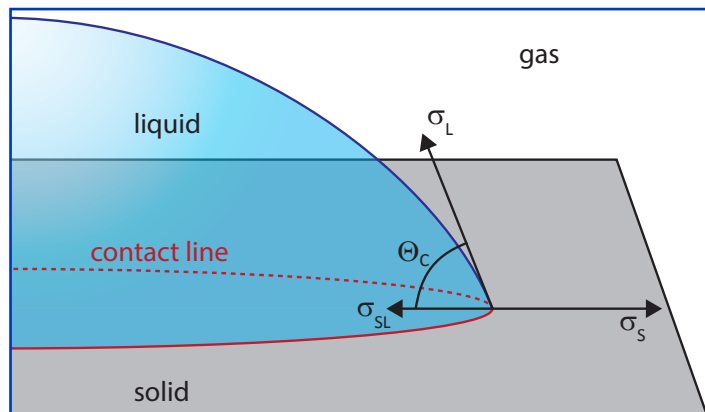
- robot control software adjusted to customer needs for the automatic control of a PCA 100R integrated into a robot cell
- interfaces to SCA software and to the robot control electronics
- including all necessary drivers



PCA 100R/2 with 3 axes positioning system and rotary axis

Technical data

Max. sample dimensions and weight:	<ul style="list-style-type: none"> • unlimited (PCA 100M) • depending on customer needs (PCA 100R)
Minimal sample curvature radius:	<ul style="list-style-type: none"> • 50 cm convex, 100 cm konkave
Sample table dimensions of laboratory stand PCA-MS:	<ul style="list-style-type: none"> • 100 mm x 100 mm
Traversing range of sample table in X, Y and Z direction:	<ul style="list-style-type: none"> • 100 mm x 104 mm x 42 mm
Measuring range for contact angles:	<ul style="list-style-type: none"> • 0 ... 180°; ± 0,1° measuring precision of the video system
Optics and image processing system:	<ul style="list-style-type: none"> • lighting with software-controlled intensity • CCD camera, max. resolution 752 x 582 Pixel, max. frame rate 52 frames/s • high-performance telecentric lens with integrated aperture and adjustable observation angle • field of view: 6.4 mm x 4.8 mm • optical distortion: < 0.05 %
Dimensions (L x W x H):	<ul style="list-style-type: none"> • 260 mm x 150 mm x 205 mm (PCA 100M) • depending on customer needs (PCA 100R)
Weight:	<ul style="list-style-type: none"> • 5.2 kg (PCA 100M/2) • 5.6 kg (PCA 100M/4) • depending on customer needs (PCA 100R)
Power supply:	<ul style="list-style-type: none"> • 100 ... 240 VAC; 50 ... 60 Hz; 70 W (PCA 100M) • depending on customer needs (PCA 100R)



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

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

Your sales partner: