

# SFE Analysis & Non-destructive contact angle measurements

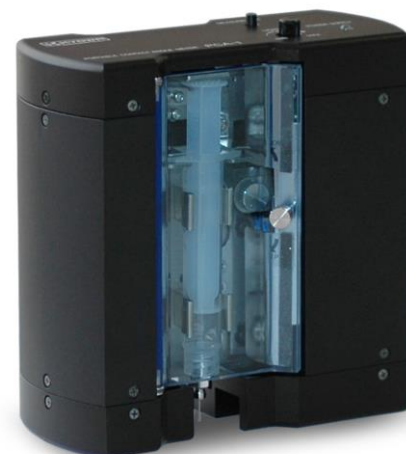
## Portable Contact Angle Meter PCA-11

**A compact and lightweight device for fully automated on-site measurements of contact angle, surface free energy of solids, and surface tension**

Testing on-site for quality control and evaluation of surface wettability, characterized by the contact angle, is often required during manufacturing processes or in the field.

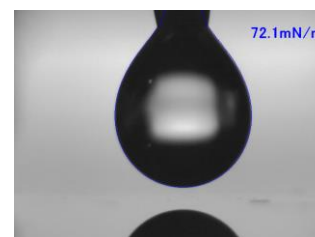
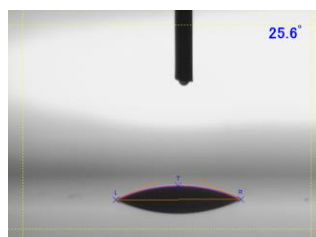
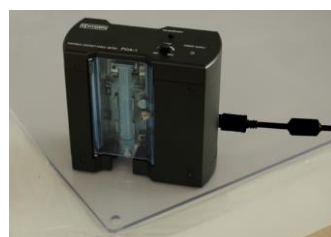
The PCA-11 can be used on any material, such as glass, metal, film, paper & pulp, polymer, wood, etc. It is ideal for on-site measurements or samples that cannot be analyzed with the usual stationary contact angle measuring instruments due to their size or shape.

Weighing only 650g, combined with the single-click fully automated operation and precise measurements, the PCA-11 is the ideal solution for quickly analyzing solids' surface free energy and for non-destructive surface evaluations.



### FEATURES

- Single-click, fully automated operation
- Precise measurement of contact angles, even on slopes of up to 90 degrees
- Quick analysis of surface free energy by a simple exchange of filled syringes
- Measurement of surface tension using the pendant drop method
- Time-dependent measurements by image capture of 30 fps
- One prepared syringe allows for 500 measurements of droplets with a volume of 1  $\mu$ l
- Simple replacement of syringe and liquid sample via the easily accessible front door
- The visible needle tip allows precise capture of the target point



### APPLICATIONS

- Evaluation of cleanliness of large panels and wafers
- Evaluation of surface modification techniques, such as corona, flame, and plasma treatments
- Evaluation of hydrophobic and hydrophilic surfaces from automobile parts, windshields, building walls, etc.

### SPECIFICATIONS

|                        |  |   |
|------------------------|--|---|
| Measuring methods      | Contact angle: Sessile drop  | Surface tension: Pendant drop   |
| Analysis methods       | Contact angle:<br>Surface tension:<br>Surface free energy of solids:                 | $\theta/2$ , tangent, curve fitting (ellipse, circle), Young-Laplace<br>Young-Laplace, ds/de<br>OWRK, Owens-Wendt, Kaelble-Uy, Kitazaki-Hata, Wu, acid-base, Zisman |
| Measuring range        | Contact angle: 0 to 180 $^{\circ}$   | Surface tension: 0 to 1000 mN/m   |
| Resolution             | Contact angle: 0.01 $^{\circ}$   | Surface tension: 0.01 mN/m  |
| Accuracy <sup>1)</sup> | Contact angle: 0.5 $^{\circ}$  | Surface tension: 0.5 mN/m   |
| Droplet dispensing     | Automatic  |   |
| Dispensing resolution  | 0.1 $\mu$ l  |   |
| Droplet deposition     | Automatic  |   |
| Power supply           | USB bus power (a Windows laptop is required to operate the instrument)               |   |
| Dimensions, weight     | 110mm(W) x 50mm(D) x 110mm(H), 650 g   |   |
| Operating environment  | Temperature: +10 to +35 $^{\circ}$ C, relative humidity: 30 to 80 % (non-condensing) |   |

<sup>1)</sup> Accuracy is the repeatability in terms of standard deviation based on the manufacturer's calibration standard.

For detailed information, please get in touch with our sales partner or us directly at +81-48-483-2629 or [overseas-sales@face-kyowa.co.jp](mailto:overseas-sales@face-kyowa.co.jp).

Specifications and designs are subject to change without notice.

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