# Drop Shape Analyzer

# DSA100M

## Specifications


| Product group specifications | DSA100M |
|---|---|
| **Camera system CF04 (standard)** | |
| Connection | USB 3.0 |
| Resolution | 1920 × 1200 px |
| Frame rate | 2300 fps |
| Dark noise | 7 electrons |
| Dynamic range | 73 dB |
| **High speed camera system CF06 (optional)** | |
| Connection | USB 3.0 |
| Resolution | 640 × 480 px |
| Frame rate | 3400 fps |
| Dark noise | 10.5 electrons |
| Dynamic range | 56.6 dB |
| **Optics** | |
| Focus | fixed focus |
| Zoom | 6.5× microscope zoom, manual |
| View angle | ±4° |
| Field of view | with CF04 : 0.2 × 0.2 to 0.9 × 0.9 mm (7× to 45×)<br>with CF06 : 0.1 × 0.1 to 0.4 × 0.3 mm (7× to 45×) |
| Resolution | with CF04 : 0.1 to 0.8 µm<br>with CF06 : 0.1 to 0.7 µm |
| **Observation optics** | |
| Field of view | with CF04: 2.3 mm × 2.3 mm |
| Resolution | with CF04: 2 µm |
| **Illumination** | |
| Type | high power monochromatic LED |
| Wave length, dominant | 460 nm |
| Field of light | Ø 12 mm |

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|---|---|---|---|
| **Dosing system** | | | |
| Dosing | software-controlled | | |
| Reservoir, volume | 4 mL | | |
| Minimum drop volume | 20 pL | | |
| Speed of dosed drop | 2 m/s | | |
| **Stages** | x-axis | y-axis | z-axis |
| Control | manual | | |
| Length | 30 mm | 50 mm | 45 mm |
| Resolution | 20 mm/turn | 4 mm/turn | 1 mm/turn |
| **Software** | | | |
| ADVANCE | contact angle<br>surface free energy of solids | | |
| **Software languages** | | | |
| | Chinese (simplified), English, French, German, Japanese, Korean, Portuguese, Russian, Spanish | | |

| Measurement specifications | DSA100M |
|---|---|
| **Sessile drop** | |
| Result | contact angle |
| Range (software-based) | 0 to 180° |
| Resolution (software-based) | 0.01° |
| Accuracy (instrument-based) | 0.3° |
| Models | conic section, polynomial, circle, Young-Laplace, height-width |
| Types | static, dynamic |
| **Surface free energy of solids (optional)** | |
| Result | surface free energy, polar & disperse part, acid & base part, H-bond part |
| Models | equation of state, Zisman, Fowkes, Wu, Owens-Wendt-Rabel-Kaelble, extended Fowkes, acid-base theory |

| General specifications | DSA100M |
|---|---|
| **Sample dimensions** | |
| Maximum sample space | 320 mm × ∞ × 275 mm (W × D × H; without axes) |
| **Temperature control (optional)** | |
| Equipment | temperature-controlled sample stage |
| Type | liquid |
| Range | -10 to 130 °C |
| Temperature-controlled area | 26 mm × 90 mm (W × D) |
| Resolution | 0.1 °C |
| Flow-through thermostat | with liquid |
| **Temperature measurement (optional)** | |
| Range | -50 to 400 °C |
| Resolution | 0.1 °C |
| Precision | 0.1 °C |
| Accuracy | 1/3 DIN B (±0.1 °C at 0 °C to ±0.8 °C at 400 °C) |
| External sensor | 2 connectors (PT100) |
| Locations | sample stage, chamber, cuvette |
| **Housing and peripherals** | |
| Levelling | yes |
| **Environment** | |
| Operating temperature | 10 to 40 °C |
| Humidity | without condensation |
| **Instrument dimensions** | |
| Footprint | 555 mm × 375 mm (W × D) |
| Height | 490 mm |
| Weight (without accessories) | 24 kg |
| **Power supply** | |
| Voltage (AC) | 88 to 264 V |
| Power consumption | 100 W |
| Frequency | 50 to 60 Hz |
| **Interfaces** | |
| PC | USB 3.0 |