

# DROP SHAPE ANALYZER – DSA100M

## SPECIFICATIONS



**Product group specifications**
**DSA100M**
**Camera system**

Connection	USB 3.0
Resolution	CF04: 1920 x 1200 px CF06 <sup>1)</sup> : 640 x 480 px
Frame rate	CF04: 2300 fps CF06: 3400 fps
Dark noise	CF04: 7 electrons CF06: 10.5 electrons
Dynamic range	CF04: 73 dB CF06: 56.6 dB

**Optics**

Focus	fixed focus
Zoom	6.5× microscope zoom, manual
View angle	±4°
Field of view	CF04: 0.2 mm × 0.2 mm to 0.9 mm × 0.9 mm (7× to 45×) CF06 <sup>1)</sup> : 0.1 mm × 0.1 mm to 0.4 mm × 0.3 mm (7× to 45×)
Resolution	CF04: 0.1 to 0.8 μm CF06 <sup>1)</sup> : 0.1 to 0.7 μm

**Observation optics**

Field of view	CF04/CF04C: 2.3 mm × 2.3 mm
Resolution	CF04/CF04C: 2 μm

**Illumination**

Type	high power monochromatic LED
Wave length, dominant	460 nm
Field of light	Ø 12 mm

**Dosing system**

Dosing	software-controlled
Syringes, volume	4 mL
Resolution	fixed
Speed of dosed drop	2 m/s

<b>Stages</b>	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 surface free energy of solids
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<sup>1)</sup> optional

**Measurement specifications****DSA100M****Sessile drop/Captive bubble**

Result	contact angle
Range <sup>2)</sup>	0 to 180°
Resolution <sup>2)</sup>	0.01°
Accuracy <sup>3)</sup>	0.3°
Models	conic section, polynom, circle, Young-Laplace, height-width
Types <sup>4)</sup>	static, dynamic

**Surface free energy of solids <sup>1)</sup>**

Result	surface free energy
Models	equation of state, Zisman, Fowkes, Wu, Owens-Wendt-Rabel-Kaelble, extended Fowkes, acid-base theory

<sup>2)</sup> software-based

<sup>3)</sup> instrument-based

<sup>4)</sup> additional accessories may be required

## General specifications

DSA100M

### Sample dimensions

Maximum sample space <sup>5)</sup> 320 mm × ∞ × 275 mm (W × D × H)

### Temperature control

Equipment	temperature-controlled sample stage
Type	liquid
Range	-10 to 130 °C <sup>6)</sup>
Tempered area	26 mm × 90 mm (W × D)
Resolution	0.1 K
Flow-through thermostat	with liquid

### Temperature measurement

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) <sup>7)</sup>
Locations	sample stage, chamber, cuvette

### Housing and peripherals

Compartment	test liquids protected against light
Needle protection shield	yes
Control keyboard	PC keyboard for ADVANCE software operation available (KB20)
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	88 to 264 VAC
Power consumption	100 W
Frequency	50 to 60 Hz

### Interfaces

PC	USB 3.0
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<sup>5)</sup> without axes

<sup>6)</sup> with Tempering Chamber – TC3240

<sup>7)</sup> retrofittable