



Drop Shape Analyzer – DSA100M

Specifications



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

Connection	USB 3.0
Resolution	CF04: 1920 x 1200 px CF06 ¹⁾ : 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 ¹⁾ : 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 ¹⁾ : 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

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 surface free energy of solids
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¹⁾ optional

General specifications**DSA100M****Sample dimensions**

Maximum sample space ⁵⁾ 320 mm × ∞ × 275 mm (W × D × H)

Temperature control

Equipment	temperature-controlled sample stage
Type	liquid
Range	-10 to 130 °C ⁶⁾
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) ⁷⁾
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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⁵⁾ without axes

⁶⁾ with Tempering Chamber – TC3240

⁷⁾ retrofittable

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

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

Surface free energy of solids ¹⁾

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

²⁾ software-based

³⁾ instrument-based

⁴⁾ additional accessories may be required

