

DROP SHAPE ANALYZER – DSA100W

SPECIFICATIONS



Product group specifications
DSA100W
Camera system

Connection	USB 3.0
Performance	CF03: 150 fps at 1200 × 1200 px 500 fps at 1200 × 350 px 800 fps at 1200 × 200 px 2000 fps at 1200 × 60 px
	CF06 ¹⁾ : up to 3400 fps at 640 × 50 px
Dark noise	CF03: 7 electrons CF06: 10.5 electrons
Dynamic range	CF03: 73 dB CF06: 56.6 dB

Optics

Focus	manual
Zoom	7× zoom, manual
View angle	±4°
Field of view	CF03: 3.9 mm × 3.9 mm to 24.7 mm × 24.7 mm CF06 ¹⁾ : 1.7 mm × 1.3 mm to 10.8 mm × 8.1 mm
Resolution	CF03: 3.1 to 21.7 μm CF06 ¹⁾ : 2.5 to 17.8 μm

Illumination

Type	high power monochromatic LED
Wave length, dominant	470 nm
Field of light	46 mm × 46 mm (D × H)

Dosing system

Dosing	software-controlled
Drop deposition	software-controlled
Syringes, volume	glass (450 μL), disposable (900 μL)
Resolution	0.1 μL with glass syringe
Speed	10 to 1400 μL/min

Double pressure dosing system¹⁾

Drop deposition	software-controlled
Cartridge, volume	disposable (1 mL)
Resolution	0.1 μL
Speed	fixed

Stages	y-axis	z-axis	rotation axis
Control	software-controlled	manual	software-controlled ¹⁾
Range	170 mm	38 mm	38 μm
Resolution	10 μm	16 mm/turn	10 μm
Accuracy	100 μm	-	100 μm
			software-controlled
			360°
			0.1°
			1°

¹⁾ optional

Product group specifications**DSA100W****Tilting ¹⁾**

Type	external
Control	software-controlled
Range	0 to 90°
Resolution	0.1°
Accuracy	1°

Software

ADVANCE	contact angle surface free energy of solids
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Measurement specifications**DSA100W****Sessile drop/captive bubble**

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

Surface free energy of solids

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

Pendant drop/rising drop ¹⁾

Result	interfacial and surface tension
Range	0.01 to 2000 mN/m
Resolution	0.01 mN/m
Accuracy	0.3 mN/m
Model	Young-Laplace
Type	static, dynamic

²⁾ software-based

³⁾ instrument-based

⁴⁾ additional accessories may be required

General specifications

DSA100W

Sample dimensions

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

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) ⁶⁾
Location	environment air

Housing and peripherals

Compartment	test liquids protected against light
Needle protection shield	yes
Camera und optics housing	yes
Control keyboard	PC keyboard for ADVANCE software operation available (KB20)
Levelling	yes

Environment

Temperature	operating: 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

Voltage	88 to 264 V
Power consumption	100 W
Frequency	50 to 60 Hz

Interfaces

PC	USB 3.0
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⁵⁾ without axes

⁶⁾ retrofittable