



Drop Shape Analyzer – DSA100L

Specifications



Product group specifications

DSA100L

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	manual		
Zoom	7× zoom, manual		
View angle	±4°		
Field of view	CF04: 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	CF04: 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		
Speed	0.02 to 25 μL/s		

Double pressure dosing system ¹⁾

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		software-control- led ¹⁾	software-controlled
Range	350 mm		45 mm	360°
Resolution	10 μm		16 mm/turn	0.1°
Accuracy	100 μm		-	1°
			100 μm	

Software

ADVANCE	contact angle surface free energy of solids		
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¹⁾ optional

Measurement specifications**DSA100L****Sessile drop/Captive bubble**

Result	contact angle
Range ²⁾	0 to 180°
Resolution ²⁾	0.01°
Accuracy ³⁾	0.1°
Models	conic section, polynom, circle, Young-Laplace, height-width
Types ⁴⁾	advancing, receding, static, dynamic, tilting

Surface free energy of solids

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

Pendant drop/Rising drop ¹⁾

Results	interfacial and surface tension
Range	0.01 to 2000 mN/m
Resolution	0.01 mN/m
Model	Young-Laplace
Types	static, dynamic

²⁾ software-based

³⁾ instrument-based

⁴⁾ additional accessories may be required

General specifications

DSA100L

Sample dimensions

Maximum sample space ⁵⁾	700 mm × ∞ × 275 mm (W × D × H)
Maximum measuring surface	500 mm × 500 mm (W × D)

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

Operating temperature	10 to 40 °C
Humidity	without condensation

Instrument dimensions

Footprint	1000 mm × 375 mm (W × D)
Height	490 mm
Weight (without accessories)	34 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⁾ retrofittable

