Drop Shape Analyzer

DSA100L

Specifications

Product group specifications	DSA100L
Camera CF04 (standard)	
Connection	USB 3.0
Resolution	1920 × 1200 px
Frame rate	2300 fps
Dark noise	7 electrons
Dynamic range	73 dB
5 megapixel high speed camera CF10 (optional)	
Connection	USB 3.0
Resolution	2592 × 2048 px
Frame rate	3450 fps
Dark noise	9.3 electrons
Dynamic range	60 dB
Optics	
Focus	manual
Zoom	7× zoom, manual
View angle	±4°
Field of view	with CF04: 3.9 × 3.9 to 24.7 × 24.7 mm with CF10: 7.1 × 5.6 to 49.8 × 39.4 mm
Resolution	with CF04: 3.1 to 21.7 µm with CF10 : 2.7 to 19.2 µm
Illumination	
Type	high power monochromatic LED
Wave length, dominant	470 nm
Field of light	46 mm × 46 mm (D × H)

Product group specifications	DSA100L			
Dosing system				
Dosing	software-controlled			
Drop deposition	software-controlled			
Syringes, volume	glass (450 µL), disposable (900 µL)			
Resolution	20 nL			
Speed	0.004 to 25 µL/s			
Liquid Needle double pressure dosing (optional)				
Control	software-controlled			
Speed	fixed (fast jet)			
Resolution	0.1 µL			
Cartridge, volume	disposable, 1 mL			
Stages	y-axis	z-axis		rotation axis
Control	software-controlled	manual	SW-controlled (opt)	software-controlled
Range	350 mm	45 mm	38 mm	360°
Resolution	10 µm	16 mm/turn	10 µm	0.1°
Accuracy	100 µm	-	100 µm	1°
Tilting (optional)				
Type	internal			
Control	software-controlled			
Range	0 to 90°			
Resolution	0.01°			
Accuracy	0.3°			
Software	ADVANCE			
Contact angle	recommended			
Surface free energy of solids	recommended			
Interfacial and surface tension of liquids	pendant drop, rising drop (optional) Constrained Sessile Drop (optional)			
Software languages	ADVANCE			
	Chinese (simplified), English, French, German, Japanese, Korean, Portuguese, Russian, Spanish			

Measurement specifications	DSA100L
Sessile drop/captive bubble	
Result	contact angle
Range (software-based)	0 to 180°
Resolution (software-based)	0.01°
Accuracy (instrument-based)	0.1°
Models	conic section, polynomial, circle, Young-Laplace, height-width
Types	advancing, receding, static, dynamic, tilting
Surface free energy of solids	
Results	surface free energy (SFE), 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
Pendant drop/rising drop	
Results	interfacial and surface tension
Range (software-based)	0.01 to 2000 mN/m
Resolution (software-based)	0.01 mN/m
Model	Young-Laplace
Types	static, dynamic

General specifications	DSA100L
Sample dimensions	
Maximum sample space	700 mm × ∞ × 275 mm (W × D × H, without axes)
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)
Location	environment air
Housing and peripherals	
Compartment	test liquids protected against light
Needle protection shield	yes
Camera und optics housing	yes
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 (AC)	88 to 264 V
Power consumption	100 W
Frequency	50 to 60 Hz
Interfaces	
PC	USB 3.0