Drop Shape Analyzer

DSA100M

Specifications

Product group specifications	DSA100M
Camera system CF04 (standard)	
Connection	USB 3.0
Resolution	1920 × 1200 px
Frame rate	2300 fps
Dark noise	7 electrons
Dynamic range	73 dB
High speed camera system CF06 (optional)	
Connection	USB 3.0
Resolution	640 × 480 px
Frame rate	3400 fps
Dark noise	10.5 electrons
Dynamic range	56.6 dB
Optics	
Focus	fixed focus
Zoom	6.5× microscope zoom, manual
View angle	±4°
Field of view	with CF04 : 0.2 × 0.2 to 0.9 × 0.9 mm (7× to 45×) with CF06 : 0.1 × 0.1 to 0.4 × 0.3 mm (7× to 45×)
Resolution	with CF04 : 0.1 to 0.8 µm with CF06 : 0.1 to 0.7 µm
Observation optics	
Field of view	with CF04/CF04C (color): 2.3 mm × 2.3 mm
Resolution	with CF04/CF04C (color): 2 µm
Illumination	
Type	high power monochromatic LED
Wave length, dominant	460 nm
Field of light	Ø 12 mm

Product group specifications	DSA100M		
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		

Measurement specifications	DSA100M
Sessile drop	
Result	contact angle
Range (software-based)	0 to 180°
Resolution (software-based)	0.01°
Accuracy (instrument-based)	0.3°
Models	conic section, polynomial, circle, Young-Laplace, height-width
Types	static, dynamic
Surface free energy of solids (optional)	
Result	surface free energy, 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

General specifications	DSA100M
Sample dimensions	
Maximum sample space	320 mm × ∞ × 275 mm (W × D × H; without axes)
Temperature control (optional)	
Equipment	temperature-controlled sample stage
Type	liquid
Range	-10 to 130 °C
Temperature-controlled area	26 mm × 90 mm (W × D)
Resolution	0.1 °C
Flow-through thermostat	with liquid
Temperature measurement (optional)	
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)
Locations	sample stage, chamber, cuvette
Housing and peripherals	
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 (AC)	88 to 264 V
Power consumption	100 W
Frequency	50 to 60 Hz
Interfaces	
PC	USB 3.0