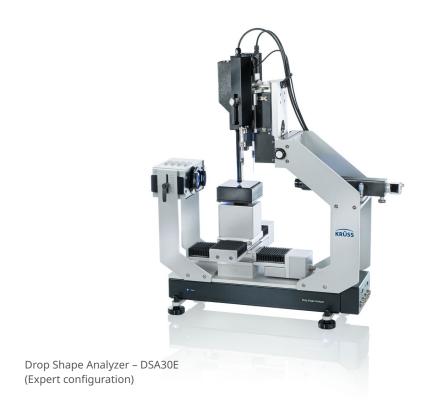
Drop Shape Analyzer

DSA30

Specifications







Connection	Product group specifications	DSA30B	DSA30S	DSA30E	
Resolution 1920 × 1200 px	Camera CF04 (standard)				
Frame rate 2300 fps 7 electrons 73 dB 7 electrons 7	Connection		USB 3.0		
Dark noise 7 electrons 73 dB	Resolution		1920 × 1200 px		
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 (standard) Focus manual Zoom 6.5 × 200m, manual View angle 43° Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm with CF10: 5.5 × 4.3 to 36.1 × 28.6 mm Resolution with CF04: 2.5 to 16.2 ½ µm with CF10: 2.1 to 13.9 µm Optics with extender lense (optional) Zoom 2× zoom, fixed with CF10: 2.1 to 13.9 µm Optics with extender lense (optional) Zoom 2× zoom, fixed with CF10: 2.1 to 13.8 ¼ µm with CF10: 7.2 to 18.0 × 14.2 mm Resolution with CF10: 1.3 to 8.4 µm with CF10: 1.0 to 7.0 µm Illumination High power monochromatic LED Wave length, dominant 470 nm	Frame rate				
S 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 (standard) Focus manual Zoom 6.5 × zoom, manual View angle ±3° Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm With CF04: 2.5 to 16.2 μm with CF04: 2.5 to 16.2 μm With CF04: 2.5 to 16.2 μm with CF04: 2.5 to 16.2 μm Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm With CF04: 1.3 to 8.4 μm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mm Resolution with CF10: 1.0 to 7.0 μm Illumination Type Maye length, dominant 470 nm	Dynamic range	73 dB			
Resolution 2592 × 2048 px Frame rate 3450 fps Dark noise 9.3 electrons Dynamic range 60 dB Optics (standard) Focus Zoom 6.5 × xoom, manual View angle ±3° Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm With CF10: 5.5 × 4.3 to 36.1 × 28.6 mm Resolution with CF04: 2.5 to 16.2 μm With CF10: 2.1 to 13.9 μm Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm With CF04: 2.7 × 2.1 to 18.0 × 14.2 mm Resolution with CF04: 1.3 to 8.4 μm with CF01: 1.3 to 8.4 μm with CF02: 1.3 to 8.4 μm With CF04: 1.3 to 8.4 μm with CF04: 1.3 to 7.0 μm Illumination Value length, dominant High power monochromatic LED Wave length, dominant 470 nm	5 megapixel high speed camera CF10 (optional)				
Frame rate 3450 fps Dark noise 9.3 electrons Dynamic range 60 dB Optics (standard) Focus manual Zoom 6.5 × zoom, manual View angle ± 3° Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm Resolution with CF04: 2.5 to 16.2 μm with CF04: 2.5 to 16.2 μm with CF04: 2.5 to 16.2 μm Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF04: 1.5 × 2.7 to 18.0 × 14.2 mm with CF04: 1.3 to 8.4 μm Resolution with CF04: 1.3 to 8.4 μm With CF04: 1.3 to 8.4 μm with CF04: 1.3 to 8.4 μm with CF04: 1.0 to 7.0 μm With CF04: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm	Connection				
Dark noise 9.3 electrons Optics (standard) Focus manual Zoom 6.5 × zoom, manual View angle ±3° Field of view With CF04: 3.2 × 3.2 to 18.5 × 18.5 mm Resolution with CF04: 2.5 to 16.2 μm Optics with extender lense (optional) 2× zoom, fixed Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm Resolution with CF04: 1.3 to 8.4 μm Resolution with CF04: 1.3 to 8.4 μm Illumination high power monochromatic LED Wave length, dominant 470 nm	Resolution				
Optics (standard) Focus manual Zoom 6.5 × zoom, manual View angle ±3° Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm with CF10: 5.5 × 4.3 to 36.1 × 28.6 mm Resolution with CF04: 2.5 to 16.2 μm with CF10: 2.1 to 13.9 μm Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF04: 1.3 to 10.1 × 10.1 mm with CF04: 1.					
Optics (standard) Focus manual Zoom 6.5 × zoom, manual View angle ±3° Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm Resolution with CF04: 2.5 to 16.2 μm With CF10: 2.1 to 13.9 μm Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 * 1.5 to 10.1 × 10.1 mm with CF04: 1.2 7 × 2.1 to 18.0 × 14.2 mm Resolution with CF04: 1.3 to 8.4 μm With CF01: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm					
Focus	Dynamic range		60 dB		
Zoom 6.5 × zoom, manual View angle ±3° Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm Resolution with CF10: 5.5 × 4.3 to 36.1 × 28.6 mm Resolution Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mm Resolution with CF04: 1.3 to 8.4 μm With CF01: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm	Optics (standard)				
View angle±3°Field of viewwith CF04: 3.2 × 3.2 to 18.5 × 18.5 mm with CF10: 5.5 × 4.3 to 36.1 × 28.6 mmResolutionwith CF04: 2.5 to 16.2 μm with CF10: 2.1 to 13.9 μmOptics with extender lense (optional)Zoom2× zoom, fixedField of viewwith CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mmResolutionwith CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μmIlluminationTypehigh power monochromatic LEDWave length, dominant470 nm	Focus		manual		
Field of view with CF04: 3.2 × 3.2 to 18.5 × 18.5 mm with CF10: 5.5 × 4.3 to 36.1 × 28.6 mm Resolution with CF04: 2.5 to 16.2 μm with CF10: 2.1 to 13.9 μm Optics with extender lense (optional) Zoom 2× zoom, fixed with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mm Resolution with CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm					
Resolutionwith CF10: 5.5 × 4.3 to 36.1 × 28.6 mmWith CF04: 2.5 to 16.2 μm with CF10: 2.1 to 13.9 μmOptics with extender lense (optional)Zoom2× zoom, fixedField of viewwith CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mmResolutionwith CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μmIlluminationTypehigh power monochromatic LEDWave length, dominant470 nm					
Resolutionwith CF04: 2.5 to 16.2 μm with CF10: 2.1 to 13.9 μmOptics with extender lense (optional)Zoom2× zoom, fixedField of viewwith CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mmResolutionwith CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μmIlluminationTypehigh power monochromatic LEDWave length, dominant470 nm	Field of view				
With CF10: 2.1 to 13.9 μm Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm					
Optics with extender lense (optional) Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mm with CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μm with CF10: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm	Resolution		with CF04: 2.5 to 16.2 μm		
Zoom 2× zoom, fixed Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm With CF10: 2.7 × 2.1 to 18.0 × 14.2 mm with CF04: 1.3 to 8.4 μm With CF10: 1.0 to 7.0 μm with CF10: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm			with CF10: 2.1 to 13.9 μm		
Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mm Resolution with CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μm Illumination Type Wave length, dominant 470 nm	Optics with extender lense (optional)				
Field of view with CF04: 1.5 × 1.5 to 10.1 × 10.1 mm with CF10: 2.7 × 2.1 to 18.0 × 14.2 mm Resolution with CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μm Illumination Type Wave length, dominant 470 nm	700m	2× 700m. fixed			
Resolutionwith CF10: 2.7 × 2.1 to 18.0 × 14.2 mmResolutionwith CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μmIlluminationTypehigh power monochromatic LEDWave length, dominant470 nm					
Resolution with CF04: 1.3 to 8.4 μm with CF10: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm					
With CF10: 1.0 to 7.0 μm Illumination Type high power monochromatic LED Wave length, dominant 470 nm	Resolution				
Type high power monochromatic LED Wave length, dominant 470 nm					
Wave length, dominant 470 nm	Illumination				
Wave length, dominant 470 nm	Type		high power monochromatic LED		
			Ø 42 mm		



Product group specifications	DSA30B		DSA30S		DSA30E				
Dosing system									
Syringe dosing Liquid Needle double pressure dosing	1 × manual optional		1 × software-controlled optional		2 × software-controlled 1 × included				
Multi-dosing system (optional)				up to 4 lic	quids software-	controlled			
Drop deposition (syringe dosing) Syringes, volume Resolution (syringe dosing) Speed (syringe dosing)	manual glass (500 μL), disposable (1 mL) - -		software-controlled glass (1×, 450 μL), disposable (900 μL) 20 nL 0.004 to 25 μL/s		software-controlled glass (2×, 450 μL), disposable (900 μL) 20 nL 0.004 to 25 μL/s				
Liquid Needle double pressure dosing									
Control Speed Resolution Cartridge, volume					ftware-controll fixed (fast jet) 0.1 µL lisposable, 1 m				
Stages (default setup)	x-axis	y-axis	z-axis	x-axis	y-axis	z-axis	x-axis	y-axis	z-axis
Control		- manual manual			software-controlled		ed		
Length			45 mm	100 mm	100 mm	45 mm	100 mm	100 mm	38 mm
Resolution			16 mm/turn	2 mm/turn	2 mm/turn	16 mm/turn		10 μm	
Accuracy	-	-	-	-	-	-		100 μm	
Tilting (optional)									
Type Control Range Resolution Accuracy				SO	internal ftware-controll 0 to 90° 0.01° 0.3°	ed			
Software					ADVANCE				
Contact angle Surface free energy of solids Interfacial and surface tension of liquids Fiber contact angle	pendant dr Constraine	recommended optional pendant drop, rising drop (optional) Constrained Sessile Drop (optional) Meniscus (optional)		recommended recommended pendant drop, rising drop (optional) Constrained Sessile Drop (optional) Meniscus (optional)		recommended recommended pendant drop, rising drop (recomm.) Constrained Sessile Drop (optional) Meniscus (optional)			
Software languages									

Chinese (simplified), English, French, German, Japanese, Korean, Portuguese, Russian, Spanish

Measurement specifications	DSA30B	DSA30S	DSA30E		
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					
Result	surface free energy	(SFE), polar & disperse part, acid & base	part, H-bond part		
Models	equation of state, Zisman, Fowkes, W	eguation of state, Zisman, Fowkes, Wu, Owens-Wendt-Rabel-Kaelble, Schultz-1, extended Fowkes, acid-base theory			



DSA30E

i chiadhe ar ophrionig ar op				
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			
Meniscus				
Results	contact angle			
Range (software-based)	10 to 90°			
Resolution (software-based)	0,01°			
Minimum fiber diameter	65 μm, 40 μm (with optional extender)			
Types	static, dynamic, advancing, receding			
General specifications	DSA30B DSA30S DSA30E			
Sample dimensions				
Maximum sample space	320 mm × ∞ × 275 mm (W × D × H, without axes)			
Temperature control				
Equipment	temperature-controlled sample stage, chambers, cuvette			
Types	liquid liquid (large) Peltier electrical			
Range	5 to 90 °C -10 to 130 °C -30 to 160 °C 50 to 400 °C			
Maximum sample size	132 mm × 132 mm × 27 mm (W × D × H; large liquid chamber)			
Resolution	0.1 °C			
Flow-through thermostat	with liquid			
Inert gas	yes			
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 Locations	2 connectors (PT100) sample stage, chamber, cuvette			
	sample stage, chamber, cuvette			
Housing and peripherals				
Levelling	yes			
Environment				
Operating temperature	10 to 40 °C			
Humidity	without condensation			
Instrument dimensions				
Footprint	610 mm × 250 mm (W × D)			
Height	610 mm			
Height	610 mm			
Height Weight (without accessories) Power supply Voltage (AC)	610 mm 10 kg 88 to 264 V			
Height Weight (without accessories) Power supply	610 mm 10 kg			

DSA30B

DSA30S

USB 3.0

Measurement specifications

Pendant drop/rising drop

Interfaces

PC