

Dynamic Foam Analyzer

DFA100

Specifications



Product group specifications	DFA100	DFA100FSM	DFA100LCM
Line sensor			
Sensor resolution	1728 × 1 px	-	-
Spatial resolution	200 dpi 0.125 mm	-	-
Temporal resolution	20 fps	-	-
Scanning length	216 mm	-	-
Operating system			
Gas flow rate (internal)	0.2 to 1.0 L/min	-	-
Gas flow rate (external)	0.05 to 1.0 L/min	-	-
Approved gases	air, nitrogen, carbon dioxide	-	-
Approved pressure	5 ± 0.5 bar	-	-
Stirring speed	up to 8000 rpm	-	-
Approved temperature	4 to 90 °C	-	-
Illumination			
Type	LED	LED	-
Wave length, dominant	469 nm (IR: 850 nm)	633 nm	-
Camera system			
Connection	USB 3.0		
Performance	2 fps at 1280 × 1024 px		
Diameter of minimum detectable bubble	50 µm		
Mean field of view size	position 1: 285 mm ² position 2: 140 mm ² position 3: 85 mm ²		
Focus	manual		

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Electrodes			
Material	-	-	35 µm copper, finish: chemical gold
Highest sensor position	-	-	185 mm
Measured entity	-	-	electrical resistance in Ω
Theoretical measurement range	-	-	10 Ω to 2 MΩ
Software		ADVANCE	
Foam analysis		required	
Foam Flash (uses stirring module)		optional	
Software languages			

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

Measurement specifications	DFA100	DFA100FSM	DFA100LCM
Analyzed foam characteristic	foamability and foam stability	foam structure: homogeneity, stability, and aging	liquid content and drainage
Results	<ul style="list-style-type: none"> ■ foam height ■ liquid height ■ total height ■ foam capacity ■ maximum foam density ■ expansion rate ■ foam half life time ■ drainage half life time ■ sample temperature 	<ul style="list-style-type: none"> ■ mean bubble area ■ bubble count per mm² ■ standard deviation of mean bubble area ■ bubble size distribution ■ bubble count half life ■ Sauter mean radius ■ initial foam structure ■ final foam structure 	<ul style="list-style-type: none"> ■ liquid content at 7 sensor positions ■ resistance at 7 sensor positions ■ 25 %, 50 % and 75 % liquid content time

General specifications
DFA100
Sample dimensions

Minimum required sample volume	50 mL with 40 mm diameter column 20 mL with 20 mm diameter column
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Temperature control

Type	double-walled glass column
Range	4 to 90 °C (with additional thermostat)
Resolution	0.1 °C

Temperature measurement

Sensor	PT100
Range	4 to 90 °C
Resolution	0.1 °C
Precision	0.1 °C
Accuracy	1/3 DIN B (± 0.1 °C at 0 °C, ± 0.8 °C at 400 °C)
Location	inside sample liquid

Environment

Operating temperature	15 to 30 °C
Humidity	without condensation

Instrument dimensions

Footprint	245 mm × 275 mm (W × D)
Height	460 mm
Weight (without accessories)	9 kg

Power supply

Voltage (AC)	100 to 240 V
Power consumption	maximum 30 W
Frequency	50 to 60 Hz

Interfaces

PC	1× USB 2.0 (+ 1× USB 3.0 for Foam Structure Module – FSM)
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Accessories

Glass columns	20 and 40 mm diameter, temperature control option
Filter plates for sparging	diameter: 14 and 30 mm
Filter plate porosities	G1: nominal maximum pore size: 100 to 160 µm G2: nominal maximum pore size: 40 to 100 µm G3: nominal maximum pore size: 16 to 40 µm G4: nominal maximum pore size: 10 to 16 µm
Material of columns and frits	borosilicate glass (norm: ISO 4793)
Material of sealings	silicone and FKM