

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		
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		

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
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)
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