



# Dynamic Foam Analyzer – DFA100

Specifications



Product group specifications	DFA100	DFA100 FSM	DFA100 LCM
<b>Line sensor</b>			
Sensor resolution	1728 × 1 px	-	-
Spatial resolution	200 dpi   0.125 mm	-	-
Temporal resolution	20 fps	-	-
Scanning length	216 mm	-	-
<b>Operating system</b>			
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	-	-
<b>Illumination</b>			
Type	LED	LED	-
Wave length, dominant	469 nm (IR: 850 nm)	633 nm	-
<b>Camera system</b>			
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 <sup>2</sup> position 2: 140 mm <sup>2</sup> position 3: 85 mm <sup>2</sup>		
Focus	manual		
<b>Electrodes</b>			
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
<b>Software</b>			
ADVANCE	foam analysis		

Measurement specifications	DFA100	DFA100 FSM	DFA100 LCM
<b>Analyzed foam characteristic</b>	foamability and foam stability	foam structure: homogeneity, stability and aging	liquid content and drainage
Results	<ul style="list-style-type: none"> <li>■ foam height</li> <li>■ liquid height</li> <li>■ total height</li> <li>■ foam capacity</li> <li>■ maximum foam density</li> <li>■ expansion rate</li> <li>■ foam half life time</li> <li>■ drainage half life time</li> <li>■ sample temperature</li> </ul>	<ul style="list-style-type: none"> <li>■ mean bubble area</li> <li>■ bubble count per mm<sup>2</sup></li> <li>■ standard deviation of mean bubble area</li> <li>■ bubble size distribution</li> <li>■ bubble count half life</li> <li>■ Sauter mean radius</li> <li>■ initial foam structure</li> <li>■ final foam structure</li> </ul>	<ul style="list-style-type: none"> <li>■ liquid content at 7 sensor positions</li> <li>■ resistance at 7 sensor positions</li> <li>■ 25%, 50% and 75% liquid content time</li> </ul>

**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 <sup>1)</sup>
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 ( $\pm 0.1$ °C at 0 °C, $\pm 0.8$ °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	100 to 240 VAC
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

<sup>1)</sup> additional thermostat needed: TB14

