

Biostat® RM Rocking Motion Bioreactor Powered by Biobrain®



Product Information

The Biostat® RM rocking motion bioreactor system consists of a new, first-in-class control tower built on the commercial manufacturing (CM)-ready Biobrain® automation platform. It also comprises a bioreactor family that includes the Biostat® RM 20|50 and Biostat® RM 200, offering a unique solution for CM.

Features and Benefits

- Accelerate Go-to-Market timelines
- Simplify process transfer from PD to CM
- Flexibility for different production scenarios and testing multiple setups
- Precise process control for better parameter definition
- Excellent global application support

Relevant Applications

- Proteins
- Vaccines
- Cell and Gene Therapy

Relevant Process Steps

- Seed Expansion

Technical Specifications

Biostat® RM



Biostat® RM Control Tower

Control Tower Weight	Tower: 44 kg Display: 11 kg
Control Tower Dimensions (H × W × D)	Tower: 440 × 355 × 660 mm Display: 450 × 394 × 200 mm

Utility Connections

Power Supply	▪ 220 – 240 V, 50/60 Hz, 2.33 A max. power consumption ▪ 100 – 120 V, 50/60 Hz, 4.64 A max. power consumption ▪ Potential equalization
Ingress Protection Rating	IP 54
Gasses	▪ Gas supply pressure: min. 1.5 barg – max. 2.0 barg ▪ Dry, grease-free, oil-free, particle-free ▪ Hose barb for tubing, external diameter = 6 mm
Housing	▪ Stainless steel, AISI 304 ▪ Surface brushed with grain 240, surface roughness Ra 1.2
Display	Touch screen, 17.3", tempered glass, IP 54, inclinable, detachable, capacitive
Resolution	127 dpi
SCADA Communication	Industrial Ethernet

Utility Connections	
Potential-Free (common) Alarm Contact	Opens and closes normally
Safety Valve Gas Pressure	100 mbar
Particle Emission Results	ISO Class 5 US FED Class 100 GMP Grade B
VHP Cleanability	Confirmed
Process Control Sensors	
Temperature	Pt100 0 – 150 °C Temperature control: 0 – 40 °C 0.1 °C
Dissolved Oxygen, Single-Use	0 – 250% 0.1%
pH, Single-Use	▪ Measurement range: 4.0 – 10.0 pH 0.1 pH ▪ Recommended working range: 6.0 – 8.0 pH 0.1 pH
Balance Substrate	▪ 7 kg max. 1 g ▪ 60 kg max. 10 g ▪ Cubis® balance from 320 g 0.01 g up to 70.2 kg 1 g
Aeration Module	
Outlet to Bag	Hose coupling Ø external = 6 mm
Gassing	▪ Four-gas mixing with headspace outlet ▪ Additive flow, four-gas (Air, O₂, N₂, CO₂) mixture
Mass Flow Controllers	4 Flow rate (various models available): ▪ 3 ccm – 10 lpm (headspace) ▪ Accuracy: ± 1% full scale
Pump Module	
Built-In Variable Speed Pumps	0.15- 200 rpm
Flow Rates for Built-In Variable Speed Pumps	Speed range 0.15 – 200 rpm: ▪ ID: 0.5 mm: 0.00 – 4.0 mL/min ▪ ID: 0.8 mm: 0.01 – 8.0 mL/min ▪ ID: 1.6 mm: 0.02 – 28.0 mL/min ▪ ID: 2.4 mm: 0.04 – 60.0 mL/min ▪ ID: 3.2 mm: 0.07 – 96.0 mL/min ▪ ID: 4.8 mm: 0.13 – 172.0 mL/min
External Pumps	
Speed-Controlled	▪ Watson Marlow 120, fast-load pump head, up to 200 rpm ▪ Watson Marlow 323, fast-load pump head, up to 400 rpm ▪ Watson Marlow 530, fast-load pump head, up to 220 rpm or 265 rpm

Biostat® RM Rocker



Biostat® RM Rocker	20 50 L	200 L
Weight	▪ RM 20 without Load Cell – 38 kg ▪ RM 20 with Load Cell – 47 kg ▪ RM 50 without Load Cell – 42.8 kg ▪ RM 50 with Load Cell – 51.8 kg	197 kg
Dimensions (H×W×D)	▪ Biostat® RM 20 with bag holder 20, hood: 766×616×509 mm ▪ Biostat® RM 20 with bag holder 20, hood, Load Cell: 766×636×584 mm ▪ Biostat® RM 50 with bag holder 50, hood: 1,089×616×509 mm ▪ Biostat® RM 50 with bag holder 50, hood, Load Cell: 1,089×636×584 mm	1155×1940×1080 mm
Construction Material of Culture Bag Holder and Hood	ABS	ABS
Power Supply	▪ 240 V, 50 Hz, power consumption 10 A ▪ 100 V, 60 Hz, power consumption 12 A	▪ 230 V, 50 Hz, power consumption 5.2 A ▪ 120 V, 60 Hz, power consumption 10 A
Power Consumption	600 W	1,200 W
Ingress Protection Rating	IP 23	IP 21
Rocking Speed	8–42 ± 1 (r/min)	2–20 ± 1 (r/min)
Rocking Angle	4–10°, ± 0.3°	2–10°, ± 0.3°
Max Gas Supply Rate	▪ Aeration rate: 50–1,000 mL/min ▪ Permitted bulk flow for stable CO₂ control within CO₂ ratio controller: 100–1,000 mL/min	7 L/min for all gasses
Load Cells	100–240 V 15 W 100 kg 10 g	100–240 V 15 W 400 kg 10 g
Acoustic Emissions	▪ Device switched on, idle, aeration off: 39 dB(A) ▪ Device switched on, 42 RPM, aeration off: 62 dB(A) ▪ Device switched on, idle, aeration on: 54 dB(A) ▪ Device switched on, 42 RPM, aeration on: 63 dB(A)	▪ Device switched on, idle: 56–61 dB(A) ▪ During operation: > 65 dB(A)
Temperature Control Module		
Heating	2×140 W	2×410 W

Control System General Information

- Advanced DO Controller
- Level Control via Sensor
- Gravimetric Feed | Level Control
- Substrate Addition via Time Profile
- System IQ | OQ
- Biobrain® Supervise SCADA Connection

Ordering Information

Item	Description	Order Number
Biostat® RM	Configurable rocking motion bioreactor available with 20 L, 50 L or 200 L rocker.	Configurable product based on the needs of the customer. Generate quote in the configurator.

Peripherals and Accessories

Product Name	Description	Order Number
7 kg Balance	▪ Weight indication via bioreactor control system ▪ Max. load: 7 kg ▪ Resolution: 0.1 g ▪ Stainless steel platform ▪ Platform diameter: 233 mm ▪ Connection cable included	EVO1S1-WV4
60 kg Balance	▪ Weight indicated on balance display and control tower display ▪ Taring via bioreactor control system (taring via balance deactivated) ▪ Max. load: 60 kg ▪ Resolution: 10 g ▪ Stainless steel platform ▪ Platform dimensions: 400 × 300 mm ▪ Connection cable included	BB-8843513
Cubis® II MCA Balance	▪ Laboratory balance with fully customizable hardware, software, and connectivity ▪ Available types: Cubis® II Precision and Cubis® II High-Capacity ▪ Available with configurable weighing modules	
Signal Lamp	▪ Predefined signal lamp with integrated LED light source ▪ Additional tool for customer notification in case of emergency or process discrepancies	ZB-RM-OT-0001
BioPAT® Trace	Inline measurement of glucose and lactate	Quote via configurator
BioPAT® Viamass	Inline biomass measurement for process control	Quote via configurator
Simulator Kit for BioPAT® Viamass	▪ Accessories for checking the functionality of the electronic assembly ▪ Two values: 0 pF/0 mS/cm and 100 pF/40 mS/cm	BPV0011
Advanced Order Execution (AOE)	Service to increase visibility and improve customer interaction. AOE provide a dedicated project coordinator (remotely) for order of standard instruments including scheduling and monitoring of order progress, communication with customer and early access to all available documentation via sharepoint.	ZB-MB-HA-0045
Interface Consulting (IC)	▪ Consulting service decrease effort and risk on customer side ▪ IC provide support to optimize integration effort for our customers, directly available from configurator ▪ Includes all available documentation and consulting from Sartorius Engineering	ZB-MB-HA-0044

Flexsafe® RM Bags

Product Name	Quantity	Order Number
Flexsafe® RM Basic Culture Bags		
Flexsafe® RM 1 L Basic	5	DFB001L
Flexsafe® RM 2 L Basic	5	DFB002L
Flexsafe® RM 2 L Basic Screw Cap	5	DFB002L---01SC
Flexsafe® RM 10 L Basic	5	DFB010L
Flexsafe® RM 10 L Basic Screw Cap	5	DFB010L---01SC
Flexsafe® RM 20 L Basic	5	DFB020L
Flexsafe® RM 20 L Basic Screw Cap	5	DFB020L---01SC
Flexsafe® RM 50 L Basic	5	DFB050L
Flexsafe® RM 50 L Basic Screw Cap	5	DFB050L---01SC
Flexsafe® RM 50 L Basic (US)	5	DFB050L---01US
Flexsafe® RM 100 L Basic	2	DFB100L
Flexsafe® RM 200 L Basic	2	DFB200L
Flexsafe® RM Optical Culture Bags		
Flexsafe® RM 2 L Optical	5	DFO002L
Flexsafe® RM 2 L Optical Screw Cap	5	DFO002L---01SC
Flexsafe® RM 10 L Optical	5	DFO010L
Flexsafe® RM 10 L Optical Screw Cap	5	DFO010L---01SC
Flexsafe® RM 20 L Optical	5	DFO020L
Flexsafe® RM 20 L Optical Screw Cap	5	DFO020L---01SC
Flexsafe® RM 50 L Optical	5	DFO050L
Flexsafe® RM 50 L Optical Screw Cap	5	DFO050L---01SC
Flexsafe® RM 100 L Optical	2	DFO100L
Flexsafe® RM 200 L Optical	2	DFO200L
Flexsafe® RM Perfusion Culture Bags		
Flexsafe® RM 2 L Perfusion	3	DFP002L-SM
Flexsafe® RM 10 L Perfusion	3	DFP010L-SM
Flexsafe® RM 20 L Perfusion	3	DFP020L-SM
Flexsafe® RM 50 L Perfusion	3	DFP050L-SM
Flexsafe® RM 2 L Perfusion ATF	3	DFP002L-AT
Flexsafe® RM 10 L Perfusion ATF	3	DFP010L-AT
Flexsafe® RM 20 L Perfusion ATF	3	DFP020L-AT
Flexsafe® RM 50 L Perfusion ATF	3	DFP050L-AT
Flexsafe® RM 100 L Perfusion ATF	2	DFP100L-AT
Flexsafe® RM 200 L Perfusion ATF	2	DFP200L-AT

Product Name	Quantity	Order Number
Flexsafe® RM Viamass Culture Bags		
Flexsafe® RM 10 L Basic Viamass	5	DFB010L---VM
Flexsafe® RM 20 L Basic Viamass	5	DFB020L---VM
Flexsafe® RM 50 L Basic Viamass	5	DFB050L---VM
Flexsafe® RM 2 L Optical Viamass	3	DFO002L-VM
Flexsafe® RM 10 L Optical Viamass	5	DFO010L---VM
Flexsafe® RM 20 L Optical Viamass	5	DFO020L---VM
Flexsafe® RM 50 L Optical Viamass	5	DFO050L---VM
Flexsafe® RM 100 L Optical Viamass	2	DFO100L---VM
Flexsafe® RM 200 L Optical Viamass	2	DFO200L---VM
Flexsafe® RM 2 L Perfusion Viamass	3	DFP002L-SMVM
Flexsafe® RM 10 L Perfusion Viamass	3	DFP010L-SMVM
Flexsafe® RM 20 L Perfusion Viamass	3	DFP020L-SMVM
Flexsafe® RM 50 L Perfusion Viamass	3	DFP050L-SMVM
Flexsafe® RM 100 L Perfusion Viamass	2	DFP100L-SMVM
Flexsafe® RM 200 L Perfusion Viamass	2	DFP200L-SMVM
Flexsafe® RM 10 L ATF Viamass	3	DFP010L-ATVM
Flexsafe® RM 20 L ATF Viamass	3	DFP020L-ATVM
Flexsafe® RM 50 L ATF Viamass	3	DFP050L-ATVM
Flexsafe® RM 100 L ATF Viamass	2	DFP100L-ATVM
Flexsafe® RM 200 L ATF Viamass	2	DFP200L-ATVM

Schematic drawings can be found in Datasheet for Flexsafe® RM Bags.

Customized bag designs can be requested via engineered to order (ETO) process.

Germany

Sartorius Stedim Biotech GmbH
August-Spindler-Strasse 11
37079 Goettingen
Phone +49 551 308 0

USA

Sartorius Stedim North America Inc.
565 Johnson Avenue
Bohemia, NY 11716
Toll-Free +1 800 368 7178



For More Information, Visit

www.sartorius.com