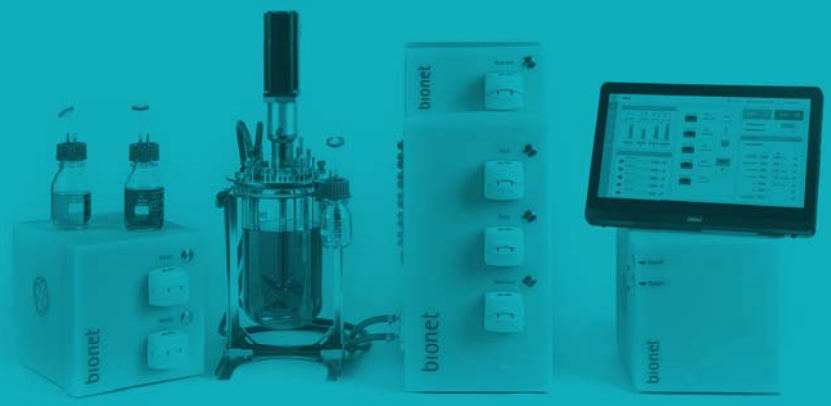
bionet®

Bioprocess Lab and Pilot Equipment

F0-BABY



F1

F2

F3

M1

M2

MARTA & ROSITA

F0-BABY

Bioprocess Lab and Pilot Equipment

VALUE PROPOSITION

The F0-BABY is the optimal entry level autoclavable fermenters/bioreactors for microbial and cell culturing bioprocessing activities in biopharma, food, agricultural-sectors and among others.

The system provides a cost-effective and user-friendly alternative to the bigger and more complex equipment, being an ideal solution for R&D, small-scale protein production, cells growth, education and training purposes.

KEY BENEFITS

With a small footprint in the lab and a neat design, the F0-BABY provides technological solutions to the whole spectrum of bioprocess needs. This is especially relevant given the uncertainty present in R&D activities. How does it achieve this?

FLEXIBILITY

The F0-BABY takes care of the small details. For instance, the same agitation motor and vessel support are shared across the different vessel volumes, which makes them interchangeable!

ADAPTABILITY

By following a modular design that allows for equipment expansion at both the hardware and the software levels. Some examples of this:

VARIABLE SPEED PUMP MODULE

This pump can be configured directly to add the substrate in both intermittent and continuous ways at a constant rate or following a variable feeding profile (linear or exponential).
The pump can also respond to a feedback type of control by assigning it to a number of different variables. These range from sensor measurements (e.g. dissolved oxygen, biomass counts, weight, etc) to the functioning of other actuators such as other pumps.

SPARE ELECTRONICS AND SOFTWARE FLEXIBILITY

For the integration of a variety of in-situ process analytical technologies (e.g. optical density sensors, gas analyzers, glucose sensors), the integration of their measurements into advanced control strategies and the visualization and data registration tools in ROSITA.

ADVANCED GAS MODULE

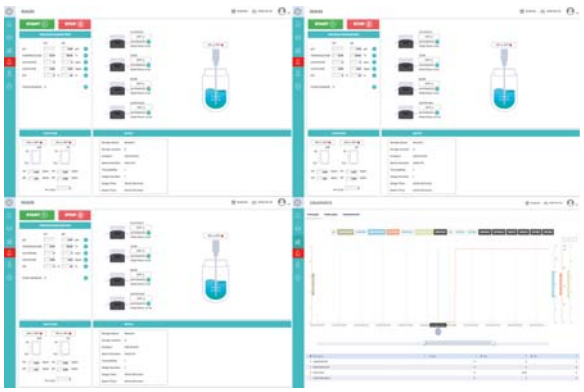
This module allows automatic mixing of up to 4 gases and their direction towards both sparger and overlay. This module will enable software capabilities such as the acidification of the broth (i.e. pH control) via acid or CO2, and the use of N2 as an actuator in the DO cascade.

CONTINUOUS PROCESS MODULE

Additional pumps can be added with the continuous process module, for the extraction and renewal of media, and the perfusion module for extraction, renewal and separation of biomass from smaller molecular components.

MULTIBIOREACTOR LICENSE

F0 is designed to be able to share the same PC and software with their fellow ones, increasing your lab capacity.



AUTOMATION

Installed in an external touch PC, ROSITA is BIONET's proprietary software which provides advanced control over the process and enhances an understanding of your strain´s nature and bioprocess parameters evolution via a number of visualization and analysis tools.

F0-BABY DATA SHEET

● standard o optional

	F0 MB			F0 CC	
GENERAL					
Material	Vessel: Borosilicate glass			Vessel: Borosilicate glass	
Total footprint on bench (H x W x D) (mm)	632-768 x 732-1300 x 485 mm				
External dimension for autoclave (H x W x D) (mm)	459-680 x 220-276 x 212-257				
Multibioreactor configuration	o			o	
VESSEL					
Model	1	3	5	2	4
Maximum Working volumes(L)	1.3	3	5	2	4
Minimum working volume (L)	0.4	0.65	0.8	0.8	1.7
H/D ratio @ maximum working volume	1.63	1.63	1.63	1.8	1.8
Type	Single-wall			Single-wall	
AGITATION					
Agitator	Top mounted agitator Single mechanical seal			Top mounted agitator Single mechanical seal	
Impellers	Standard: 2x Rushton Optional: Marine/ Pitched blade or customised.			Standard: 1x Marine Optional: customised (upon demand)	
Speed (rpm)	80-2000			80-500	
Motorpower (kW)	0.37			0.37	
GASSING MODULE					
Gas lines	Standard: Air and O2 Optional: *Flexible gas module *Advanced gas module			Standard: Advanced Gas Module (Air, O2, N2 and CO2)	
Gas inlet to vessel	Standard: Sparger Optional: overlay, without simultaneous control			Sparger and Overlay (with simultaneous control)	
Gas flow control	Automatic via MFCs			Automatic via MFCs	
Gas flow ranges (by Default)					
If Air	0.2-18 slpm			0-750 sccm	
If N2	0.2-18 slpm			0-750 sccm	
If O2	0.1-9 slpm			0-750 sccm	
If CO2	0.1-9 slpm			0-750 sccm	
0.22 µm filter in gas lines	•			•	

	F0 MB	F0 CC
Condenser	•	•
Filter at exhaust gas	•	•
DOSAGE MODULE		
Pumps	Standard: 3x fixed speed Optional: Variable Speed Pumps and Continuous Processing Module (up to 4 extra pumps)	
TEMPERATURE CONTROL		
Cooling mechanism	Circuit with automatic valves from external chiller to cooling finger.	
Heating mechainsm	Heating blanket	Heating blanket
Chiller	o	o
INSTRUMENTATION		
Basic instrumentation package	pH, DO, temperature & level	pH, DO, temperature & level
EXPANSION POSSIBILITIES		
Advanced Gas Module	o	•
Variable Speed Pump	o	o
Continuous Process Module	o	o
Perfusion module	o	o
Scales	o	o
Additional sensors (e.g. Optical Density, Exhaust CO2, etc)	o	o
EXTRA AVAILABLE ACCESSORIES	Bending accessory for Condenser, Addition bottle kits, Sampling kit, Range of dip tubes, Range of turbines, Additional port plugs.	Bending accessory for Condenser, Addition bottle kits, Sampling kit, Range of dip tubes, Range of turbines, Additional port plugs.
SOFTWARE		
Installed SW	ROSITA	ROSITA
HMI	External touch PC	External touch PC
Remote access	•	•
UTILITY REQUIREMENTS		
Compressed air supply	2-3 barg	2-3 barg
Cooling water supply	0.6 - 5 barg 6º-10º C 3 L/min	0.6 - 5 barg 6º-10º C 3 L/min
Power supply	230 V AC 50 Hz 16 A	230 V AC 50 Hz 16 A

BIONET

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