

Quotation

No. 2311-GIM-5163-2s

(Please mention with each correspondence)

Biostat® B 1L MO + BioPAT® MFCS 4 for 1 Unit

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Products

Pos 1 1 x Biostat® B Single MO - UniVessel® Glass 1L 230V



The shown picture is just a product example.

The Biostat® B is a fermenter | bioreactor which has been developed specifically for the varied requirements of biotechnological and biopharmaceutical research and development. With several thousand installations worldwide, Biostat® B is the most successful laboratory fermenter system in its class and is now available in the fourth generation. Various configurations are available for animal, plant and insect cell culture plus microbial fermentation. The system can control one or two vessels, completely independent of each other. The controller unit can be combined with our stirred glass vessels (UniVessel® Glass) or single-use vessels (UniVessel SU®). The volumes for our UniVessel® Glass range from 1 L through to 2 L and 5 L up to 10 L. The UniVessel SU® is available as a 2 L polycarbonate vessel.

The system is specially configured for the cultivation of microorganisms such as bacteria, yeast and fungi. The efficient gassing system assures a high oxygen supply with gassing rates up to 2 vvm. Air and O₂ can be connected. Furthermore anaerobic cultivation conditions can be realized by connecting N₂ to the system.

Pos 1.1 Scope without optional functions

Basic unit

1 x Control- & Supply Tower Biostat® B, Single

The benchtop system with easy to clean stainless steel housing features a 12" touch screen for comfortable operation and navigation. The control unit may be controlled locally or via SCADA system.

General set-up:

- Connection of one culture vessel
- IP- class: IP21
- Certified according to CE, UL, CSA, RoHS
- Supervisory control connection via ethernet

Internal features:

- USB port
- Ethernet
- Motor connection incl. cable for 200W motor (Univessel® Glass, UniVessel® SU)
- Electrical bond
- Potential free alarm contact for connection to external alarm system, M12
- Check Valve and security valve for gas supply to culture vessel (1 barg for Univessel® Glass and UniVessel® SU, 100 mbarg for RM Rocker)
- Pressure regulator 1,0 barg for utility water inlet (for temperature module, heating and cooling)

1 x Storage Dish

- Placed on top of control tower housing
- Magnetic Connection for quick & easy cleaning

1 x Power cord Type E I/3/16, IP65

Art. no. BB-8847887

- Cable length: 2.5 m

1 x Software Biostat® B

The 5 main menu sections MAIN, TREND, CALIBRATION; CONTROLLER and ALARM provide easy navigation and control of the process.

MAIN

- Overview for all system critical parameters
- Detail view for culture vessel 1 and 2 for Twin systems
- Shortcut to controllers of single system parameters

TREND

Overview on process parameter course. Up to 8 process parameters may be displayed at the same time. Display ranges can be adjusted individually. The displayed range can be defined in 1 h steps between 1 and 72 h. All parameters are displayed in a different colour or easy overview and navigation. BioPAT® MFCS software for data logging of the complete batch is available additionally.

CALIBRATION

The user is graphically guided through the entire calibration routine for pH and DO sensors. Furthermore, totalizer set-ups for rotameters, pumps and mass flow controllers can be adjusted. A re-calibration function enables the user to re-calibrate the pH and DO sensor during the fermentation run.

CONTROLLER

Measurement and control capabilities feature temperature, stirrer speed, rocking rate, rocking angle, pH and DO. Additional options such as gasmix, gas flow control, foam control, level control as well as various possibilities for substrate addition and control for fed batch and continuous processes can be integrated based on the chosen configuration. All controller outputs may be limited and setpoints can be combined with an alarm function. PID settings may be adjusted by the user as well.

ALARM

- for process parameters
- for setpoint overshoots
- Listing of all occurred alarms
- potential free alarm output for external alarm systems

Additional Features:

- Security shut down for heating system in case of overheating
- Password protection for all controller outputs
- Manual control of all controller outputs
- Control via external remote PC
- Shutdown function for all process controllers

Please note:

The software package is configured according to the delivered hardware set-up, this may cause deviations to the description above.

Left side of control tower

Connectivity to cultivation chamber

1 x Connection to UniVessel® Glass culture vessel for microbial fermentations

- Connection to UniVessel® Glass 1L, 2L, 5L, or 10L culture vessel
- The system is specifically suited for microbial fermentation.

DO control

General

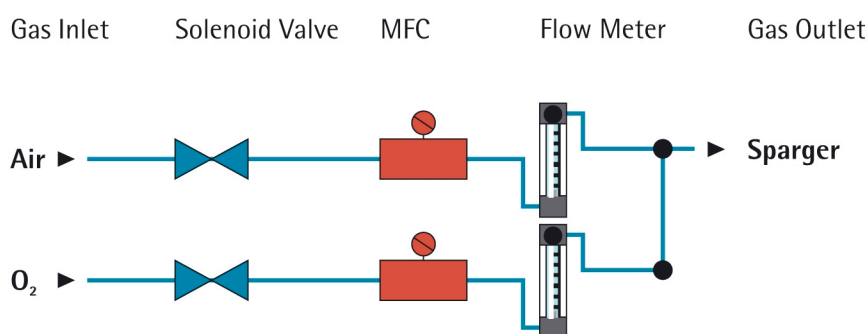
1 x DO Control CASCADE

- 4-stage cascade for DO control
- Selectable cascade elements:
- Stirrer speed (UniVessel®), Rocking rate (RM Rocker Single and Twin), Air, O₂, N₂ (only cell culture set-up)
- Aeration for UniVessels® via sparger, aeration of RM system via overlay
- Cascades run in order
- Individual setting of min and max controller output for each cascade element

1 x Analog DO Measurement

- Display of measured DO value in the display
- Calibration of the probe
- Re-calibration

1 x Gassing Module Additive Flow 2-gas



Picture shows all possible options. Depending on the specific configuration, the amount of massflow controllers and solenoid valves may be reduced. Please check the details below for the actual system configuration.

- Gassing module designed for microbial fermentation
- Check Valve and Shut-off valve
- Automatic gasmix via DO Controller

Air Sparger

1 x Flow meter 0.16 – 1.6 lpm (l/min), Scale 65 mm

Art. no. BB-8847703

- Calibrated with air (standard conditions, 1.21 bara)
- precision control valve

1 x Mass flow controller II, 0.03–1.5 slpm (Air/N₂) 24 V

Art. no. BB-8847739

- Thermal flow measurement
- Calibrated for Air/N₂

O₂ Sparger

1 x Flow meter 0.16 – 1.6 lpm (l/min), Scale 65 mm

Art. no. BB-8847703

- Calibrated with air (standard conditions, 1.21 bara)
- precision control valve

1 x Solenoid Valve O₂ Sparger

- for pulsed gas supply to sparger
- controlled by DO controller

pH control

General

1 x pH Control Acid / Base

- pH control via acid and base addition with peristaltic pumps
- Measurement range pH 2 – 12

1 x Analog pH Measurement

- Display of measured pH value in the display
- Calibration of the probe
- Re-calibration

Acid

1 x Integrated Pump WM114, 44 rpm

- Fixed speed (on/off controlled)

1 x Storage bottle 250 ml

Art. no. BB-8823600

Autoclavable

Consist of:

- glass bottle
- head piece with two hose connectors for 3.2 x 1.6 mm tubing
- screw cap with silicone gasket
- aeration filter 0.2 µm
- PTFE-tubing

Base

1 x Integrated Pump WM114, 44 rpm

- Fixed speed (on/off controlled)

1 x Storage bottle 250 ml

Art. no. BB-8823600

Autoclavable

Consist of:

- glass bottle
- head piece with two hose connectors for 3.2 x 1.6 mm tubing
- screw cap with silicone gasket
- aeration filter 0.2 µm
- PTFE-tubing

Feed 1

1 x Substrate Addition via pump

- Substrate controller
- Addition via speed controlled peristaltic pump
- Totalizer
- Time-based setpoint profiles for substrate controller
- Rotation speed of pump is entered in % based on controller output

1 x Integrated pump WM114, 0.15-5 rpm

- speed controlled

1 x Storage bottle 250 ml

Art. no. BB-8823600

Autoclavable

Consist of:

- glass bottle
- head piece with two hose connectors for 3.2 x 1.6 mm tubing
- screw cap with silicone gasket
- aeration filter 0.2 µm
- PTFE-tubing

Antifoam control

1 x Anti-Foam Control via sensor

- Measurement and control via conductive anti-foam sensor
- Addition of anti-foam agent via peristaltic pump

1 x Integrated Pump WM114, 5 rpm

- Fixed speed (on/off controlled)

1 x Storage bottle 250 ml

Art. no. BB-8823600

Autoclavable

Consist of:

- glass bottle
- head piece with two hose connectors for 3.2 x 1.6 mm tubing
- screw cap with silicone gasket
- aeration filter 0.2 µm
- PTFE-tubing

Tempering

1 x Temperature module for UniVessel®

- Thermostat system with recirculation pump
- 600 Watt
- Connections for double-wall UniVessel® Glass | UniVessel® SU water-jacket
- Connections for exhaust cooler

Mixing

1 x Agitation Motor Direct Coupling

- Agitation Drive with integrated controller
- * Maintenance free
- * 200 Watt
- for culture vessel with direct coupling

External Signals

1 x Two External Signal Inputs 0-10V

- For connection of external measurement devices
- Range 0-100%
- Display of signal in controller menu

1 x Two External Signal Inputs 4-20mA

- For connection of external measurement devices
- Range 0-100%
- Display of signal in controller menu

Cultivation chamber

1 x left: UniVessel® Glass 1L DW



The shown picture is just a product example.

The autoclavable UniVessel® Glass is available as a stirred tank bioreactor vessel in a choice of working volumes of 1, 2, 5 and 10 L.

Each UniVessel® Glass can be equipped with a range of options and accessories to meet your individual requirements.

General

1 x UniVessel® 1 L, double wall

Art. no. UNIVESSEL-00083

- Max. working volume 1 L, total volume 1.6 L
- Double wall glass vessel with round bottom
- Stainless steel top plate
- Stainless steel stand

1 x Stirrer shaft UniVessel® 1 L

Art. no. 1000118918

- Stirrer shaft with single mechanical seal
- Dishwasher proof in combination with direct coupling or magnetic coupling

1 x Standard coupling

Art. no. 1000011219

- Coupling between stirrer shaft and motor
- Rubber sleeve for direct connection

2 x 6-blade disc impeller, UniVessel® 1 L

Art. no. BB-8846359

- Stirrer diameter: 45 mm

1 x Handle for installation on the head plate

Art. no. UNIVESSEL-00044

1 x Fixation of 1 L reaction vessel during cleaning

Art. no. UNIVESSEL-00095

- When the head plate is demounted, the fixations hold the reaction vessel securely in place
- Easy cleaning of the UniVessel® Glass
- Reduces risk of damaging during cleaning

1 x Bottle support UniVessel® 1 | 2 L for 250 mL bottles

Art. no. UNIVESSEL-00019

- Holder for up to 3 bottles
- For installation at UniVessel® 1 L | 2 L stand

2 x Air inlet/ Exhaust filter, Midisart® 2000

Art. no. BB-8810079

For culture vessels and storage bottles

- for up to 20 autoclave cycles at 121°C
- hose connectors for tubing on both sides from di = 3.2 mm and up

1 x Manual sampler

Art. no. UNIVESSEL-00115

Autoclavable, allows for simple and sterile sampling

Consists of:

- sampling tube, volume: 15 ml
- syringe
- sterile filter
- holder for installation at culture vessel
- 1 m silicone tubing 3.2 x 1.6 mm
- 1x tubing clamp

6 mm port accessories

1 x Foam Sensor, 80/6-Clip

Art. no. BB-8844463

- Conductive Foam Sensor
- for 6 mm top plate port
- Sensor length: 80 mm
- Sensor connector: Clip, bushing

1 x Foam sensor connection cable Clip-M12 - 1 m

Art. no. BB-8848683

- Connectors: Clip-bushing/M12
- Cable length: 1 m

1 x Pt100 with thermowell (pocket), 151/6-M12-1m

Art. no. BB-8848648

- Pt100 temperature sensor with pocket
- Sensor length: 151 mm
- Connector: M12
- Connection cable: 1 m

1 x Ring sparger UniVessel® 1 L

Art. no. BB-8846383

- Aeration tube with sparger ring
- Hose connector for tubing, Di = 3.2 mm
- Holes facing upwards

1 x Inoculation port 6 mm

Art. no. BB-8844631

- Fitting incl. diaphragm

1 x Dip tube UniVessel® 1 L; straight, height-adjustable, ID 4 mm

Art. no. BB-8848637

- Hose barb for tubing, ID = 3.2 mm
- Straight, height-adjustable version with ID = 4 mm

1 x Baffle cage UniVessel® 1 L

Art. no. BB-8846375

- 4 baffles

6 x Blind plug 6 mm

Art. no. BB-8807957

12 mm port accessories

1 x Standard pH sensor, Hamilton EasyFerm Plus, 160 mm

Art. no. BB-8848655

- Communication: measurement raw signal
- Manufacturer: Hamilton
- Sensor length: 160 mm
- Sensor connector: VP

1 x pH sensor connection cable, VP8-VP8, 1 m

Art. no. BB-8848681

- Connectors: Double-sided VP8-bushing
- Cable length: 1 m

1 x Standard DO sensor, optical, Hamilton VisiFerm DO, 160 mm (Arc and analog)

Art. no. BB-8848669

- Optical oxygen sensor
- Communication: digital (Arc standard) and simulated measurement raw signal (ECS)
- Manufacturer: Hamilton
- Sensor length: 160 mm
- Sensor connector: VP

1 x DO sensor connection cable, VP8-VP8, 1 m

Art. no. BB-8848685

- Connectors: Double-sided VP8-bushing
- Cable length: 1 m

2 x Blind plug 12 mm
Art. no. BB-8807949

19 mm port accessories

1 x Exhaust cooler 1 L/2 L Biostat® B, B-DCU
Art. no. UNIVESSEL-00093

- Silicone tubing with quick couplings

1 x 4-way addition fitting (M 26x1)
Art. no. BB-8844313

- Hose connector for tubing, Di = 1.6 mm

3 x Blind plug 19 mm
Art. no. BB-8807930

Accessories

1 x Tool-/ and accessory kit UniVessel® 1 L
Art. no. UNIVESSEL-00045

1 x Buffer solution pH 9, 250 ml bottle
Art. no. BB-34090366

1 x Buffer solution pH 7, 250 ml bottle
Art. no. BB-34090368

1 x Buffer solution pH 4, 250 ml bottle
Art. no. BB-34090367

Materials

1 x Main materials in contact with product

- Stainless steel AISI 316L, 316Ti, 316
- Borosilicate glass
- EPDM (FDA)

Documentation/Qualification

1 x Documentation package Biostat® B (Level 0)

Documentation binder, containing one hard copy each of:

- Operating Manual
- CE Declaration of Conformity / NRTL certificate
- Quality Assurance Certificate
- Consumable list

Electronic documentation (on CD/DVD), comprising

- Operating Manual
- CE Declaration of Conformity
- Quality assurance certificate
- Consumable list

Utility requirements and power supply

1 x Mains Connection 230V

for BIOSTAT® B

1 x Gasses: regulated 1,5 barg (oil- and particle- free, dry)

1 x Water: regulated 2 - 4 barg (12 dH), gravity drain at ambient pressure

Advanced Services

1 x Advanced Order Execution for 1 Biostat® B

Advanced order execution service with dedicated project coordinator as primary contact person for internal organization, coordination, scheduling, monitoring and commercial handling.

Advanced Order Execution

1 x Advanced Order Execution Service - on request

Advanced Order Execution is not included in delivery. On request, we would be glad to submit a separate offer. Please address to your sales representative.

Frequently requested optional extras for Biostat® B Single MO - UniVessel® Glass 1L 230V

A demonstration or trial is available upon request.
Please contact your local account manager for more details.

<https://www.sartorius.com/en/products/process-analytical-technology/sensors-analyzers>



Automated Glucose feed control

Measurement & control of key nutrients during microbial growth (fermentation)



Advanced Metabolic respiration control

Measurement & control of cell activity based on exhaust gas analysis



Academic software packages

Discounted price for Universities on Chemometrics packages for higher process understanding

Pos 2 1 x Installation in Italy for 1 Biostat® B

The reliability and the service life of your equipment significantly depend on its installation and configuration according to the specifications. Installation and commissioning by our service professionals will ensure that your system successfully operates right from the start.

Pos 2.1 Scope without optional functions

Installation

1 x Installation, Biostat® B

Art. no. S8713INSTP

Installation by a qualified technician

Scope of service:

Unpacking and Verification of Contents

System assembly and utilities connection

Start-up test

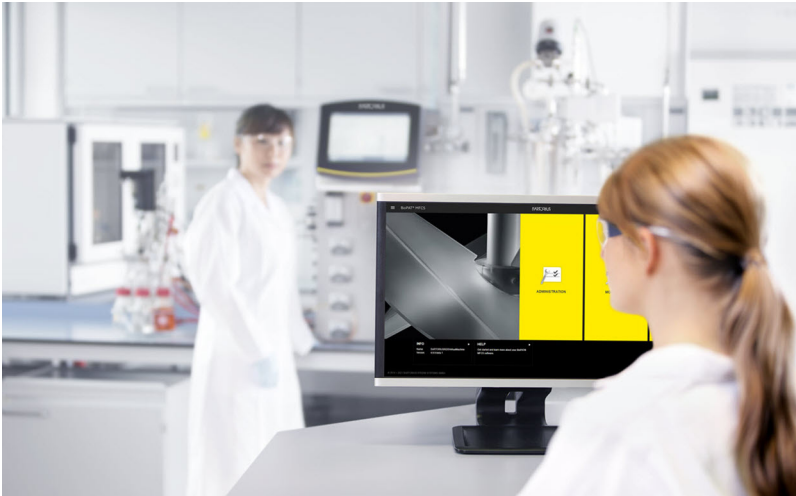
Brief operator instruction

Note:

Package Price, all expenses e.g. for travelling and charges are included.

With several units the package price is valid only if the systems are installed at the same time and at a common site.

Pos 3 1 x BioPAT® MFCS 4



The shown picture is just a product example.

BioPAT® MFCS enables you to incorporate and benefit from new standards in bioprocess data management. Its reliable data acquisition and effective trend monitoring make it an ideal tool for practically any upstream and downstream process, no matter whether you prefer single-use or reusable systems. BioPAT® MFCS is your solution for efficient processes - all backed by our expertise since 1986.

Standard BioPAT® MFCS delivery includes:

- Delivery of software, manuals and end user license agreement on USB stick
- Delivery of activation keys via e-mail

It will be necessary for you to register using the provided serial number after installing the software. Once you have successfully registered your software, you will then receive your activation keys.

The following details provided by you has been taken into account for the quotation. We will have the right to correct the price if this given information is not valid.

Information about new BioPAT® MFCS installation

Number process units: 1

Device 1

Product: Biostat® B

Process units: 1

Product serial: new_system

DCU configuration: new_system

DCU firmware version: new_system

Pos 3.1 Scope without optional functions

Software

1 x BioPAT® MFCS 4 Software

Software for bioprocess data acquisition, monitoring, control and automation

- Configuration of up to 32 process units
- Applicable for shakers, bioreactors, crossflow- and FlexAct®-systems
- User-friendly and intuitive graphical user interface
- Opportunity of working in international teams by dynamic language switch
- Unit grouping enables clear process comparisons and universal actions
- Trend-splitview allows synchronization on process events
- User specific templates ensure comfortable and effective working
- Multi-monitoring displays the application on multiple screens
- Event based or equidistant process data storage
- Alarm management according to the ANSI-18.2 standard
- Easy and flexible data exporting as csv-file
- Comprehensive search and filter possibilities with favorite function
- List printouts for system documentation and configuration
- Generate random process values with a simulation device
- Transfer of controller setpoints enables remote operation of devices
- Direct print of charts
- Expanded functionality with additional modules

1 x BioPAT® MFCS 4 Factory Configuration

- System configuration for connected process unit(s)
- Configuration of variables and I/O lists

Additional Software Modules

1 x BioPAT® MFCS 4 Charting Module

Charting Module for advanced data visualization and inspection

- Common visualization of running and completed processes in one chart
 - Auto-refresh updates the chart content without the need for user intervention
 - Plot up to 12 individually configurable curves in a single chart
 - Adding comments to selectable data points improves process documentation
 - Multifunctional chart legend helps in identifying and editing data series
 - Rectangle zoom for faster inspection of interesting areas
 - Load and save templates for fast and simple chart configuration
 - Multi-monitoring function shows charts & tables on different screens
 - 'Link & synchronize' feature enables easy process comparisons in split-view mode
 - Straight-line representation of exponential data curves in semi-log charts
 - Horizontal and vertical crosshair for detailed readings of measurement values
 - Quick and simple chart design by drag & drop as well as grouping of y-axes
 - Change grid spacing that helps to better visualize and interpret curve characteristics
-
- Requires the latest BioPAT® MFCS 4 software
 - Delivery of activation keys via e-mail to activate Charting Module

3rd party modules

1 x Microsoft® SQL Server 2019 Standard Runtime

Microsoft® SQL Server 2019 Standard (Runtime) license for SQL database management system for use with BioPAT® MFCS 4 software.

- Including 1 device CAL (Client Access License)
- Applicable only for BioPAT® MFCS 4 applications

Server Hardware

1 x Computer and further hardware, provided by customer

Minimum System Requirements:

Without Multi-user Option (Standalone System)

- 8-core processor 3 GHz
- 32 GB memory (RAM)
- 500 GB hard disk space
- 1x RJ-45 Ethernet card
- 1x LAN adapter
- DirectX, 1GB RAM graphic card
- DVD-ROM drive or USB port
- 15.6" monitor (1366 x 768 pixel)
- Mouse and keyboard
- Uninterruptable power supply

Supported Operating Systems (64-bit): Windows® 10 and 11

With Multi-user Option

Client

- 6-core processor 3 GHz
- 16 GB memory (RAM)
- 50 GB hard disk space
- 1x RJ-45 Ethernet card
- 1x LAN adapter
- DirectX, 1GB RAM graphic card
- 15.6" monitor (1366 x 768 pixel)
- Mouse and keyboard
- Uninterruptable power supply

Supported Operating Systems (64-bit): Windows® 10 and 11

Server

- 6-core processor 3 GHz
- 32 GB memory (RAM)
- 500 GB hard disk space
- 1x RJ-45 Ethernet card
- 1x LAN adapter
- DirectX, 1GB RAM graphic card
- DVD-ROM drive or USB port
- 15.6" monitor (1366 x 768 pixel)
- Mouse and keyboard
- Uninterruptable power supply

Supported Operating Systems (64 bit): Windows® Server 2022, 2019 and 2016

(Necessary modifications are subject to change without further notice.)

Documentation/Qualification

1 x Level 0: Documentation BioPAT® MFCS

BioPAT® MFCS User Manual

Pos 4 1 x Installation in Italy for 1 BioPAT® MFCS 4

The reliability and the service life of your equipment significantly depend on its installation and configuration according to the specifications. Installation and commissioning by our service professionals will ensure that your system successfully operates right from the start.

Pos 4.1 Scope without optional functions

Installation

1 x On-Site Installation Service for BioPAT® MFCS 4

Art. no. S874MINSTLP

Installation of BioPAT® MFCS 4 with up to 4 process units

BioPAT® MFCS 4 commissioning:

- Installation
- Connection to process units in a prepared IT environment
- Introduction of system functions for the customer
- If additional process units are to be added at a later date - please request an offer from the local Service Organization. On-site installation service does not include connection of non-Sartorius equipment

Prices

1 Biostat® B Single MO - UniVessel® Glass 1L 230V

1.1 1 x Scope without optional functions 45.608,20 EUR

Price for 1 x Biostat® B Single MO - UniVessel® Glass 1L 230V 45.608,20 EUR

2 Installation in Italy for 1 Biostat® B

2.1 1 x Scope without optional functions 2.819,00 EUR

Price for 1 x Installation in Italy for 1 Biostat® B 2.819,00 EUR

3 BioPAT® MFCS 4

3.1 1 x Scope without optional functions 4.592,00 EUR

Price for 1 x BioPAT® MFCS 4 4.592,00 EUR

4 Installation in Italy for 1 BioPAT® MFCS 4

4.1 1 x Scope without optional functions 2.379,00 EUR

Price for 1 x Installation in Italy for 1 BioPAT® MFCS 4 2.379,00 EUR

Total

Total Price, net 55.398,20 EUR

Delivery costs 1.400,00 EUR

Commercial Conditions

Prices & Incoterms

The prices are net excluding the sales tax and any fees.

If costs for packing, shipping, insurance, commissioning (possibly shown as Incoterm costs), installation and training are not expressly offered they are not part of delivery.

Shipments will be DAP (Delivered At Place) Italy according to Incoterms 2020.

The prices are firm for the duration of the contract and not subject to any escalation.

The prices are given based on the current alloy factors for stainless steel. We reserve the right to adjust the prices at the time of order.

Terms of payment

100% after delivery, 30 days due net

Approx. time of delivery ex works (working weeks):

Product	Standard	Qualification Level 1 - 3	Add-ons	Total
Biostat® B Single MO - UniVessel® Glass 1L 230V	8 week(s)			8 week(s)
Installation in Italy for 1 Biostat® B	on request			on request
BioPAT® MFCS 4	8 week(s)			8 week(s)
Installation in Italy for 1 BioPAT® MFCS 4	on request			on request

General information

Delivery times for Accessories are globally defined for 5 weeks, however they can vary individually. More detailed information will be provided case by case on request, or with the order confirmation.

The above mentioned delivery time is an approximate value after receipt of order and based on the current availability of the sub components and raw material and internal capacity.

Standard components (e.g. safety valves, addition valves, bottom valves and stirrers) have been considered for the evaluation of the delivery time.

In case deviating components will be used, especially such to be welded in at the vessel, the delivery time will be extended.

The final delivery time will be checked at the date of the order again and will be confirmed with our order confirmation.

Please note, the delivery might be done via other Sartorius group companies.

Validity of offer

Valid until: December 31, 2024.

Pricing will be confirmed upon order confirmation.

Scope of supply

The scope of supply only includes the described items. If installation, commissioning and training are not expressly offered they are not part of delivery.

Order Reference Code

- Our Product Configurator assigns a unique Order Reference Code (ORC) that is specific to a unique product configuration.
- Any change initiated by customers within the capabilities of our Product Configurator will lead to a new Order Reference Code
- Any change initiated by Sartorius Stedim Biotech will be notified according to our change notification policy

Export control

We explicitly draw your attention to the fact that our products may be subject to international and national export restrictions (e.g. EC Dual-Use regulation No. 428/2009 including latest updates, German Ausfuhrliste, UK Strategic Export Control List, Swiss Güterkontrollverordnung, Indian SCOMET regulation, Singapore Strategic Goods Control List, US Export Administration Regulations (EAR) and US Re-Export regulations according to the EAR. Acceptance and delivery of the order will be done in strict compliance with the appropriate legal provisions and embargo regulations.

The buyer shall comply with all applicable national and international laws and regulations, in particular the applicable export control regulations, embargo regulations and sanction programs. The buyer also agrees not to export, re-export or transfer any hardware, software or technology developed with or using information, software or technology offered by Sartorius, in violation of any applicable laws or regulations of the competent authorities. Further, the buyer shall neither use any products, information, software and technology offered by Sartorius in or in connection with nuclear technology or weapons of mass destruction (nuclear, biological or chemical) and carriers thereof nor supply military consignees. Acceptance and execution of orders for products requiring approval is subject to the issue of an export license by the Federal Export Office of Economics and Export Control (BAFA), or the relevant authorities of other countries, respectively. In case products require approval, Sartorius requires an appropriate End-Use(r) Certificate from the end user stating the precise use of the products and including an informative company profile.

Our products will be supplied exclusively for civil and peaceful purposes. With the purchase order, the buyer agrees to comply with all applicable laws and to provide all requested information and data in a timely manner to obtain the necessary documents.

As the timely approval of the export license is out of control of Sartorius any delay in shipment due to the pending or rejected approval cannot be seen as a subject to any penalty requirements by the buyer.

No re-export to Russia

(1) The [Importer/Buyer] shall not sell, export or re-export, directly or indirectly, to the Russian Federation or for use in the Russian Federation any goods supplied under or in connection with this Agreement that fall under the scope of Article 12g of Council Regulation (EU) No 833/2014.

(2) The [Importer/Buyer] shall undertake its best efforts to ensure that the purpose of paragraph (1) is not frustrated by any third parties further down the commercial chain, including by possible resellers.

(3) The [Importer/Buyer] shall set up and maintain an adequate monitoring mechanism to detect conduct by any third parties further down the commercial chain, including by possible resellers, that would frustrate the purpose of paragraph (1).

(4) Any violation of paragraphs (1), (2) or (3) shall constitute a material breach of an essential element of this Agreement, and the [Exporter/Seller] shall be entitled to seek appropriate remedies, including, but not limited to: (i) termination of this Agreement; and (ii) a penalty of 10% of the total value of this Agreement or price of the goods exported, whichever is higher.

(5) The [Importer/Buyer] shall immediately inform the [Exporter/Seller] about any problems in applying paragraphs (1), (2) or (3), including any relevant activities by third parties that could frustrate the purpose of paragraph (1). The [Importer/Buyer] shall make available to the [Exporter/Seller] information concerning compliance with the obligations under paragraph (1), (2) and (3) within two weeks of the simple request of such information.

Alterations

We reserve the right to incorporate alterations or additions in this specification, if during the manufacturing time of the above items, new technology becomes available, i.e. some parts might be replaced by parts having at least the identical or better operation efficiency.

TERMS AND CONDITIONS OF SALE

This transaction is expressly subject to the Sartorius Terms and Conditions of Sale (Italy), relating to the sale of Goods and Services which can be found at <https://www.sartorius.com/download/618592/3/gtc-sale-final-italy-pdf-data.pdf>.

Such General Terms and Conditions of Sale along with this Quote constitute a legally binding contract ("Contract") between Sartorius and the customer (the "Customer"). These Terms and Conditions shall govern Sartorius' sale to Customer of the products or services specified in the Quote and shall apply to all quotations and any subsequent order, notwithstanding any terms or conditions on any order form, purchase order or other document. Customer shall be deemed to have accepted Sartorius Terms and Conditions of Sale by acceptance of the Quote, or any other performance which, under applicable law, constitutes acceptance, including Customer's failure to object in writing to these Sartorius Terms and Conditions of Sale. Any different, contrary or supplementary terms and conditions which may be presented by the Customer are hereby expressly rejected and deemed excluded and will not be deemed to form part of any contract, even in the event such terms are not excluded by Sartorius in an individual instance.

Please ensure that our quotation number is shown prominently on your purchase order. This helps us to carry out your order promptly and correctly.

If you have questions or require additional information please contact us.

Yours sincerely

Sartorius Stedim Italy S.r.l.

Giacomo.Marino

Valeria Citarella