



BIOSTAT® CultiBag STR Plus 50L



Flow range [L/min]*:

	Rotameter	Mass Flow Controller**
Air Sparger	0.53 – 5.3	0.1 – 5.0
Air Overlay	0.53 – 5.3	0.1 – 5.0
CO ₂ Sparger	0.53 – 5.3	0.1 – 5.0
CO ₂ Overlay	0.53 – 5.3	0.1 – 5.0
N ₂	0.53 – 5.3	0.1 – 5.0
O ₂	0.53 – 5.3	0.1 – 5.0

* Other flow ranges are available on request

** Must be ordered separately

Pumps

- 3 × integrated digital peristaltic pumps per side
- Configurable to pH or substrate controller
- 2 additional integrated or external feed pumps per side available on request

Temperature

Choice between heating only or heating | cooling:

Heating Only

- 1 × 1.000 W and 2 × 500 W heating blankets around bag holder
- Temperature range: ambient - 40°C
- Automatic safety shutdown for prevention of overheating
- Filter Heater on exhaust filter

Heating | Cooling

- Jacketed vessel for cooling water
- Electrical heater 3.000 W
- Cooling water control valve
- Circulation pump
- Quick coupling connectors for the jacket of the bagholder
- Temperature range: 8°C above cooling water to 40°C
- Automatic safety shutdown for prevention of overheating
- Filter Heater on exhaust filter

Agitation System

- Magnetic drive
- Speed range from 20 up to 150 rpm
- Quiet operation
- Stirrer pre-installed inside disposable CultiBag STR

Packages

The BIOSTAT® CultiBag STR Plus 50L disposable bioreactor packages are specially configured for cell culture applications. The integrated, automatically-controlled gas mixing system provides advanced sparger and overlay aeration. Air and CO₂ are routed to Overlay. Air, N₂, O₂ and CO₂ are routed to Sparger. Control happens automatically via a DO and pH controller. Optional soft buttons the N₂ and O₂ can be used to redirect gases to overlay or sparger via manual selection.

Six rotameters are available for control of Air (2×), N₂, CO₂ (2×) and O₂. Up to 6 mass flow controllers may be added as options for individual flow rate adjustments of Air (2×), N₂, CO₂ (2×) and O₂.

BIOSTAT® STR Plus 50L Control Tower

- For measurement & control hardware, pumps & gassing system
- Available as single and twin configuration for control of up to two disposable CultiBag STR cultivation vessels
- Installed on separate skid

Digital Control

- Graphical user interface with colour display and touch screen operation
- Integrated amplifiers for temperature, pressure, disposable DO and pH sensors
- Additional amplifiers for reusable DO & pH sensor available
- Integrated control loops for temperature, DO, pH, agitation, gas flow and substrate
- Multi-stage DO cascade control
- Calibration of DO and pH sensors
- In-process DO and pH recalibration
- Trend display for up to 6 process values
- Up to 2 direct balance connections

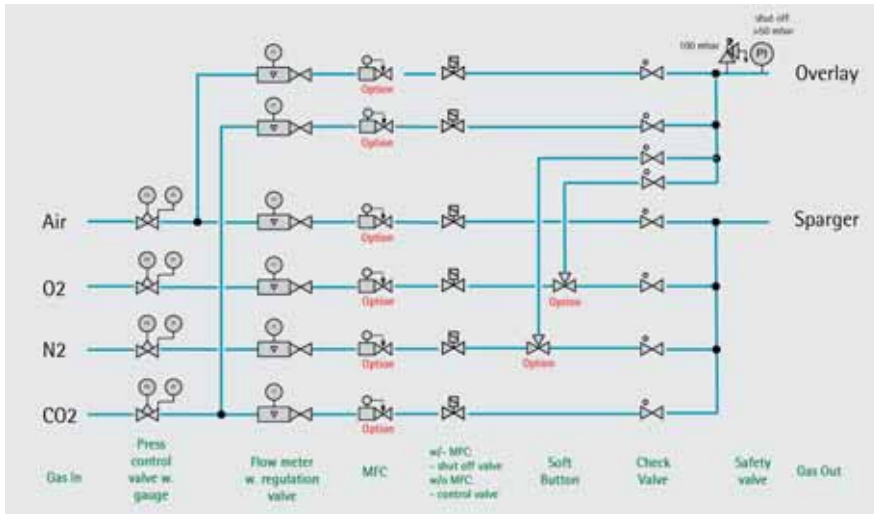
Gassing Module

- 1 × Sparger outlet
- 1 × Overlay outlet
- 4-fold gasmixing of Air, N₂, O₂ and CO₂ for Sparger gassing
- Air and CO₂ for Overlay gassing
- Optional soft buttons allow for change of gassing direction for N₂ and O₂ from Sparger to Overlay
- Solenoid valves for Air (2×), N₂(1×), O₂ (1×) and CO₂ (2×)
- Rotameters for Air (2×), N₂ (1×), O₂ (1×) and CO₂ (2×)
- Up to 6 optional Massflow Controllers* for Air (2×), N₂(1×), O₂ (1×) and CO₂ (2×)
- Control via pH/DO controller

По вопросам продаж и поддержки обращайтесь:

Астана+7(7172)727-132, Волгоград(844)278-03-48, Воронеж(473)204-51-73, Екатеринбург(343)384-55-89,
Казань(843)206-01-48, Краснодар(861)203-40-90, Красноярск(391)204-63-61, Москва(495)268-04-70,
Нижний Новгород(831)429-08-12, Новосибирск(383)227-86-73, Ростов-на-Дону(863)308-18-15, Самара(846)206-03-16,
Санкт-Петербург(812)309-46-40, Саратов(845)249-38-78, Уфа(347)229-48-12

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Bag Holder

- Installed on separate skid to the control tower; for easy connection and disconnection as required.
- Stainless Steel housing
- Electropolished
- Mobile
- 2 side windows for side ports
- Viewing window
- Double door for installation of bags

Sensors

- Disposable optical chemical sensors for pH and DO are pre-installed in every bag
- Range: pH: 5.5 – 8.5
DO: 0 – 100%
- PT100 reusable sensor for temperature measurement installed in a sleeve

Disposable Cultivation Chamber: CultiBag STR 50L

- Total volume: 50 L
- Working volume: 12.5 L–50 L
- Aspect Ratio (H:D) 2:1
- Stirrer pre-installed inside bag
- 2 × impellers
- Choice between 6-blade and 3-blade impellers
- Overlay and Sparger line
- Choice between ring and microsparger
- Dip tube
- Side Ports:
 - 1 × DO sensor
 - 1 × pH sensor
 - 1 × PT100
 - 1 × Needleless sampling device
- Bottom Drain Port
- Top Ports:
 - 2 × Gas IN, 1 × Gas OUT, including sterile filters
 - 6 × Feeding/Inoculation lines
- USP Class VI

SCADA Software BioPAT® MFCS/DA

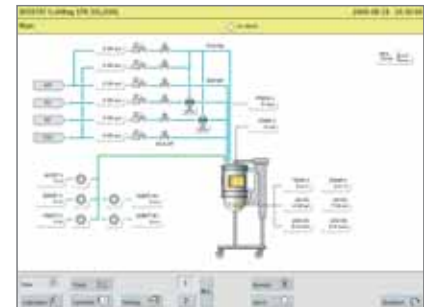
- Plug and Play configuration
- Online data acquisition
- Sample data management
- Enhanced Plotting
- Export functions
- Easy to use programming interface
- Upgrade to advanced BioPAT® MFCS/Win control software possible

Applications

- Cell culture of insect and mammalian cells
- Cell mass, protein, Mab & vaccine production
- Industrial and academic research
- Process development
- Process optimization
- Up- and down-scale studies
- Seed culture cultivation
- Large scale production up to 50 L

Features & Benefits

- Single & Twin configuration
- Disposable Bioreactor in traditional reusable vessel design
- Large working volume range
- Flexible gassing system
- Individual gas flow adjustments via rotameters and optional mass flow controllers
- Disposable DO and pH sensors
- First completely disposable and scalable bioreactor on the market
- Bag holder design allows fast turn around from one cultivation to another
- Pressure safety control
- Advanced multi-stage cascaded DO control
- Intuitive touch screen interface for easy operation
- Traditional impeller and sparger types
- Convenient bag installation via double door
- Small footprint
- Supervisory Process Control software (BioPAT® MFCS/DA) included



Technical Specifications

Description	Hardware BIOSTAT® CultiBag STR Plus 50L
Volume	
Total Volume	70 L
Minimum Working Volume	12.5 L
Maximum Working Volume	50 L
Power Supply	
208 VAC	×
400 VAC	×
Bag Holder	
Installed on skid	×
Electro-polished	×
Hemispherical doors	2
Holder for Air filters	×
Temperature control	Heating Only or Heating Cooling
Viewing window	×
Opening for sideports	×
pT 100 probe	1
Sensor Clamps	×
Filter Heater	1
Top drive motor	1
Control Tower	
Version	Single & Twin
Installed on skid	×
Temperature Control, Single Wall	Ambient – 40°C
Temperature Control, Double Wall	8°C above cooling water –40°C
Stirrer Speed	20 – 150 rpm
pH control	5.5 – 8.5
DO control	0 – 100%
Amplifiers for:	
– Disposable DO sensor	×
– Disposable pH sensor	×
– Reusable DO sensor	(x)
– Reusable pH sensor	(x)
– Temperature	×
Cascade Control	×
Recalibration function for:	
– Disposable DO sensor	×
– Disposable pH sensor	×

Description	Hardware BIOSTAT® CultiBag STR Plus 50L
Interface	
– Ethernet	×
– RS232	4
– External	4
BioPAT® MFCS/DA	×
Gassing module	
Rotameter [L/min]:	
Sparger Line	
– O ₂	×
– N ₂	×
– CO ₂	×
– Air	×
Overlay Line	
– Air	×
– CO ₂	×
MFC for	
Sparger Line	
– O ₂	(x)*
– N ₂	(x)*
– CO ₂	(x)*
– Air	(x)*
Overlay Line	
– Air	(x)*
– CO ₂	(x)*
Soft Button for	
CO ₂	–
N ₂	(x)
O ₂	(x)
Pumps & Balances	
Peristaltic Pumps	3 per side
Additional Pumps	(up to 2 per side)
Balances	(up to 2 per side)

* For BIOSTAT® CultiBag STR Plus 50L up to 6 MFC can be ordered separately
() optional, must be ordered separately

Hardware	Order Code	Description
Single version, Heating Only	DHP050LOS1B3 4	Package BIOSTAT® CultiBag STR Plus 50L Single – 208VAC 400VAC, Single Wall (SW) – 1 × Skid with BIOSTAT® STR Plus 50L SW Control Tower Single – 1 × Skid with Bag holder 50L SW for installation of single-use CultiBag STR 50L
Single version, Heating Cooling	DHP050LOS1J3 4	Package BIOSTAT® CultiBag STR Plus 50L Single – 208VAC 400VAC, Double Wall (DW) – 1 × Skid with BIOSTAT® STR Plus 50L DW Control Tower Single – 1 × Skid with Bag holder 50L DW for installation of single-use CultiBag STR 50L
Twin Version, Heating Only	DHP050LOS2B3 4	Package BIOSTAT® CultiBag STR Plus 50L 50L Twin – 208VAC 400VAC, Single Wall (SW) – 1 × Skid with BIOSTAT® STR Plus 50L 50L Control Tower Twin – 2 × Skid with Bag holder 50L SW for installation of single-use CultiBag STR 50L
Twin version, Heating Cooling	DHP050LOS2J3 4	Package BIOSTAT® CultiBag STR Plus 50L 50L Twin – 208VAC 400VAC, Double Wall (DW) – 1 × Skid with BIOSTAT® STR Plus 50L 50L Control Tower Twin – 2 × Skid with Bag holder 50L DW for installation of single-use CultiBag STR 50L
Twin Version, Heating Only	DHP250LOS2B3 4	Package BIOSTAT® CultiBag STR Plus 50L 200L Twin – 208VAC 400VAC, Single Wall (SW) – 1 × Skid with BIOSTAT® STR Plus 50L 200L Twin SW Control Tower – 1 × Skid with Bag holder 50L SW for installation of single-use CultiBag STR 50L – 1 × Skid with Bag holder 200L SW for installation of single-use CultiBag STR 200L
Twin version, Heating Cooling	DHP250LOS2J3 4	Package BIOSTAT® CultiBag STR Plus 50L 200L Twin – 208VAC 400VAC, Double Wall (DW) – 1 × Skid with BIOSTAT® STR Plus 50L 200L Twin DW Control Tower – 1 × Skid with Bag holder 50L DW for installation of single-use CultiBag STR 50L – 1 × Skid with Bag holder 200L DW for installation of single-use CultiBag STR 200L

Ordering Information

Basic Hardware

DHP200LOS1B3
DH = Disposable Hardware

Version

– = BIOSTAT® CultiBag STR
P = BIOSTAT® CultiBag STR Plus

Volume

Control Units

L = Units (Example: L = liter)
O = Optical

Mixing Technology

S1 = Stirrer Bar, Single Version
S2 = Stirrer Bar, Twin Version

Special Additions

B = Bag Holder skid with heating blanket
J = Bag Holder skid with jacket for cooling water

Voltage

3 = 208 VAC (50 | 60 Hz)
4 = 400 VAC (50 | 60 Hz)

Accessories	Order Code	Description
Massflow controller Air Overlay	DS050L-SBMAO	Range: 0.1 – 5.0 slpm
Massflow controller Air Sparger	DS050L-SBMAS	Range: 0.1 – 5.0 slpm
Massflow controller CO ₂ Overlay	DS050L-SBMCO	Range: 0.1 – 5.0 slpm
Massflow controller CO ₂ Sparger	DS050L-SBMCS	Range: 0.1 – 5.0 slpm
Massflow controller O ₂	DS050L-SBMOS	Range: 0.1 – 5.0 slpm
Massflow controller N ₂	DS050L-SBMNS	Range: 0.1 – 5.0 slpm
Soft Button O ₂ N ₂	BB-8804099	Soft button for manual re-directing of O ₂ N ₂ to Overlay or Sparger
Amplifiers for classical DO & pH sensor	DS050L-SBAC	Amplifiers for probes based on classical technology for pH and DO
WM 313 pump	8847983	Peristaltic WM 313 internal pump, analogue
WM 323 pump	8843970	Peristaltic WM 323 external pump, analogue

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