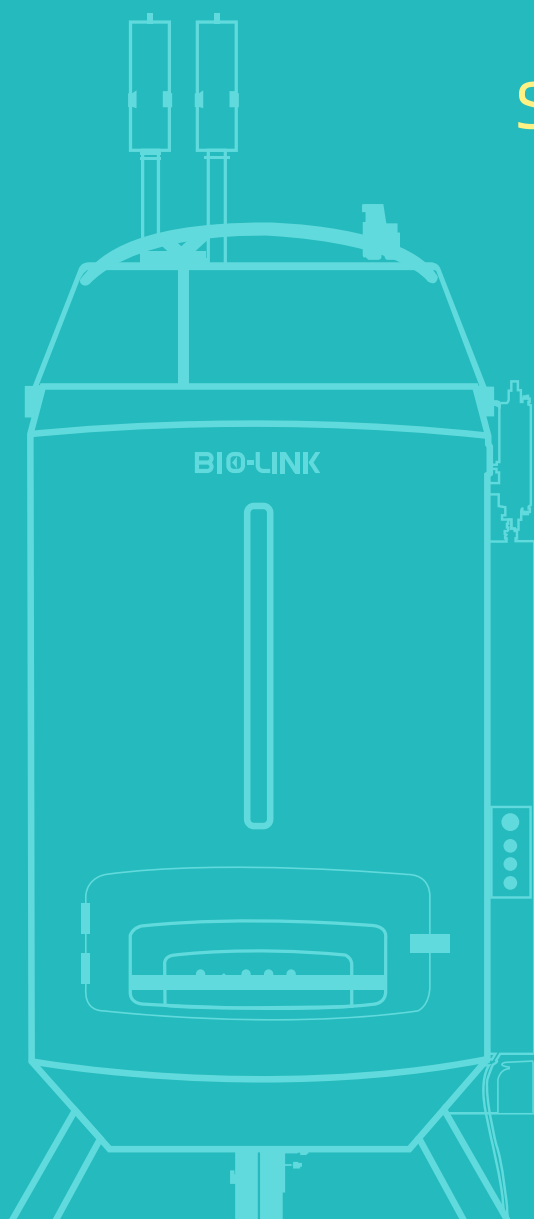




CytoLinX[®] BR

10–2000 L
Single-use Bioreactors



CytoLinX® BR 10-2000 L Single-use Bioreactor

CytoLinX® BR 10-2000 L Single-use Bioreactors come standard with working volumes of 10 L, 50 L, 200 L, 500 L, 1000 L, and 2000 L. Including a vessel, a controller and a temperature control unit (TCU), they are used for culturing mammalian cells, insect cells, and other low shear-rate needed cells.



Figure 4. CytoLinX® BR 10-2000 L Single-use Bioreactors

CytoLinX® BR Controller—The Controller of Single-use Bioreactor

CytoLinX® BR controller consists of control hardware and underlying hardware modules. The 10 L model uses the same controller as the glass bioreactor, while the 50-2000 L models are built on the PCS 7 architecture, meeting the automation requirements from research to production, as well as from single system to enterprise-wide solution. The software fits ISA 88 control standard and 21 CFR Part 11.

Hardware control units are all built with international famous brands to ensure robust and reliable performance. Also, a choice of PAT tools can be configured flexibly to meet different customer needs and applications.

One CytoLinX® BR 50-2000 L controller can control different types of BioLink Single-use bioreactor vessels at the same time. We can also use CytoLinX® BR controller as an integrated control center to realize upstream centralized control by controlling several Single-use bioreactors vessels simultaneously.

CytoLinX® BR Vessel—The Vessel of Single-use Bioreactor

CytoLinX® BR vessel operates with bottom-drive agitators. It has a patented sparge design that supports flexible combinations of micro, medium and macro sparge sizes, helping to optimize the culture process, enhance the cell density, and maintain cell viability.

For the operation of CytoLinX® BR, two types (air-cooled and water-cooled) of temperature control units (TCU) are available to meet customers' specific needs in different applications.

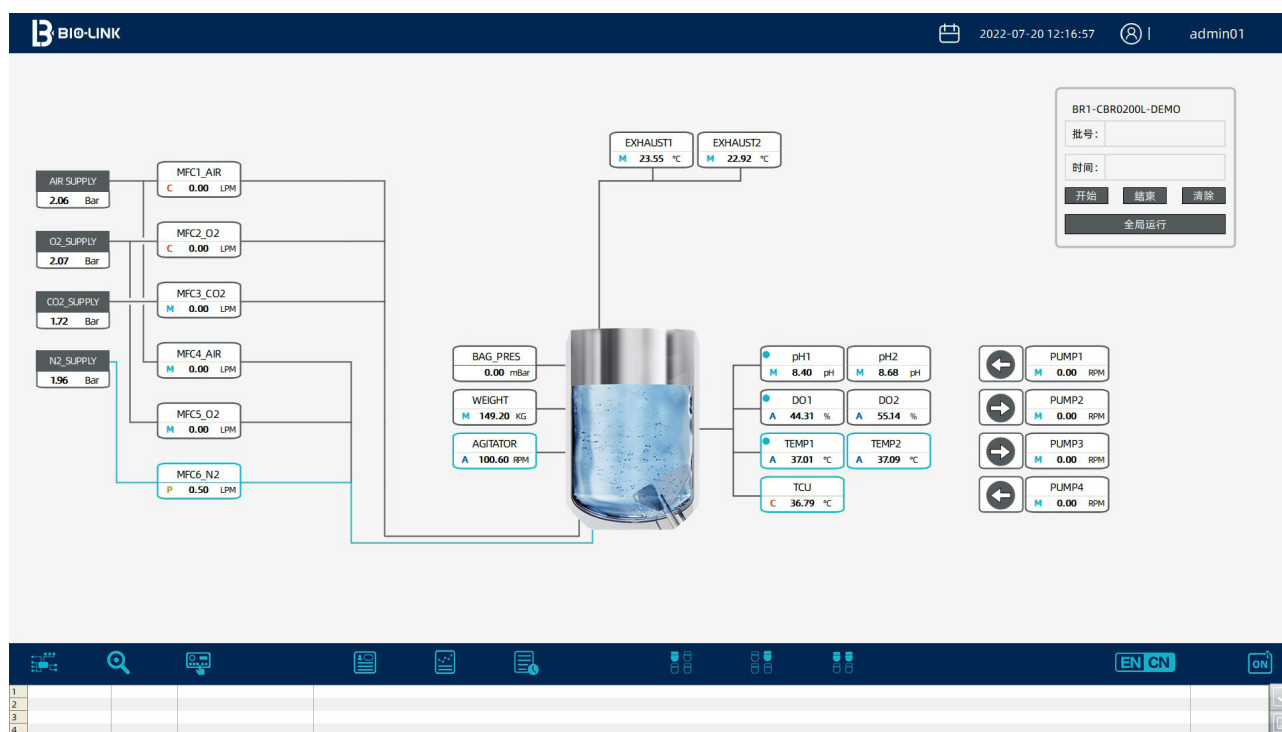
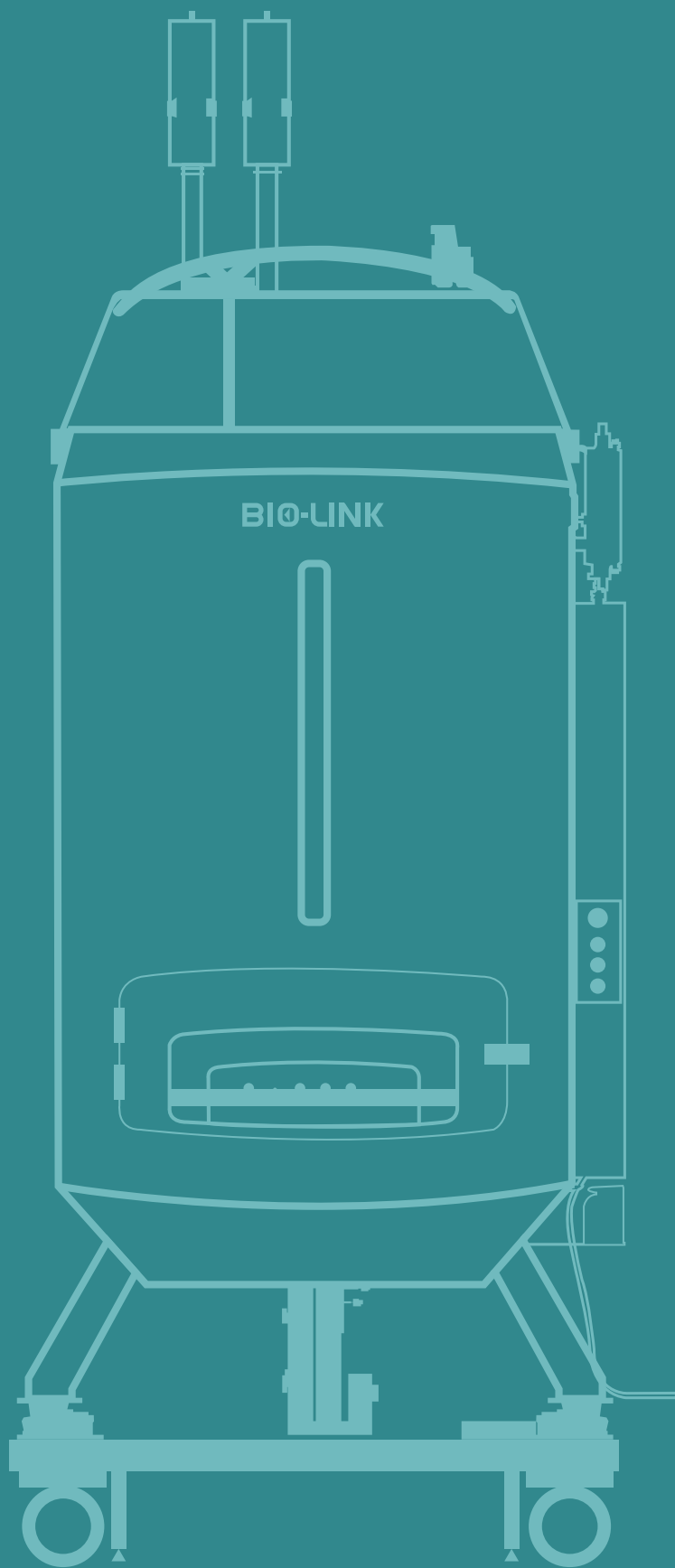
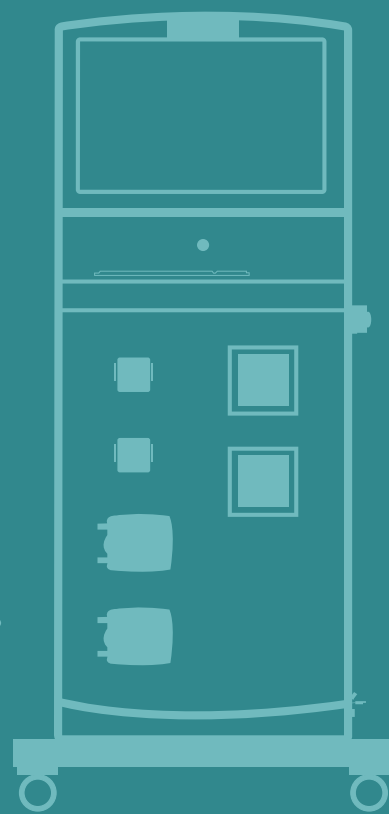


Figure 5. Main operating interface of CytoLinX® BR Controller

Product Features

- A single controller supports the control of multiple vessels by plugging and unplugging, which contributes to significant cost reduction;
- 50-2000 L Reliable PCS 7 system that meets ISA 88 standard, applicable for whole-plant control;
- The software is designed with user-friendly interface in compliance with 21 CFR Part 11;
- Flexible configurations, partly customizable upon customer requirements;
- The main parts are all high-end brands and passed the inspection before leaving the factory to ensure normal operation;
- The sparge provides micro, medium, and macro sparge size options to meet various processing needs;
- Complete FAT, SAT, and IQOQ documents/services are available;
- Rich application and operation support, and high-speed response speed.





Standard Configuration

Volume	Options	CLX BR-10	CLX BR-50	CLX BR-200	CLX BR-500	CLX BR-1000	CLX BR-2000
System parameters							
Working volume (L)		4.5-10	20 - 50	40 - 200	100 - 500	200 - 1000	400 - 2000
Height to diameter ratio (H/D)		1.5:1	2.3:1 or 1.5:1	1.5:1	1.5:1	1.5:1	1.5:1
Bag lifting device and installation ladder						√	√
Accessory parameters							
pH traditional electrodes	Single-use/ Arc electrodes	1	1-3	2-3	2-3	2-3	2-3
DO optical traditional electrodes		1	1-3	2-3	2-3	2-3	2-3
PAT tools	pCO ₂ , cell density, conductivity	0-2	0-2	0-2	0-2	0-2	0-2
Gas mass flow controller (MFC)	Optional gas and range	4-6	4-6	4-6	4-6	4-6	4-6
Integrated pump unit	Series 1, 3, and 5	2-4	2-4	2-4	2-4	2-4	2-4
Reserved port for external pump unit	Series 5, 6, and 7	0-4	0-4	0-4	0-4	0-4	0-4
Weighing module		0	1	1	1	1	1
Vent filter heating jacket	Optional size	1	2-4	2-4	2-4	2-4	2-4
Reserved port for external weighing							
Temperature control unit (TCU) (KW)	Air-cooled or water-cooled	NA (Heating blanket temperature control)	5	5	5	10	10
Control unit							
Hardware		SIEMENS PLC	SIEMENS PCS 7 (DCS, compliant with ISA 88)				
Display		22 "external computer	19" touch screen display, mouse and keyboard conforming to appropriate protection class, and built-in UPS				
Compliance		Compliant with 21 CFR PART 11					
Consumables							
Sparger	Micro, medium, and macro sparge size options available	Micro + macro sparge	Micro+ macro or medium + macro sparge design for standard products				
Tubing	Customizable tubing length	The tubing length in the standard product is sufficient for post-installation welding requirements					
Vent filter (inch)	Optional size	3	5	7	7	10	10

The vessel can be customized according to user requirements. For special specifications, please contact local technical support.

OPC DA/OPC UA Communication Protocol Overview

Features	OPC DA	OPC UA	Configuration requirements for BioLink bioreactor
Support Data Types	Real-time data only	Real - time data + historical data + alarms information	<ul style="list-style-type: none"> ✓ OPC DA is free of charge ✓ OPC UA requires license fees
Typical Applications	Integrate with third-party SCADA and monitoring systems	Integrate with SCADA, monitoring, I o T, and cloud systems	<ul style="list-style-type: none"> ✓ OPC DA and OPC UA requires no hardware configuration changes

CytoLinX® MBR 50 L Single-use Microbial Bioreactor

CytoLinX® MBR 50 L Microbial Bioreactor is a fermenter system specially designed for microbial culture. It consists of a vessel, a controller, and a temperature control unit (TCU). With disposable matching consumables, this Microbial Bioreactor is a cost-effective industrial tool with no risk of cross-contamination. It is easy to operate with minimal water consumption and short batch-to-batch turnover time. The Bioreactors can be used for both microbial culture and cell culture. The culture of CHO cells, Vero cells, and MDCK cells is supported.

CytoLinX® MBR Controller - The Controller of Single-use Microbial Bioreactor

CLX-MBR controller consists of control hardware and underlying hardware modules. CLX-MBR's controller is built with the control hardware of SIEMENS PCS 7 which meets the automation requirements from research to production, as well as from single system to enterprise-wide solution. The software fits ISA 88 control standard and 21 CFR Part 11 requirements.

Hardware control units are all built with international famous brands to ensure robust and reliable performance. Also, a choice of PAT tools can be configured flexibly to meet different customer needs and applications.

CytoLinX® MBR Vessel - The Vessel of Single-use Microbial Bioreactor

CLX-MBR vessel operates with bottom-driven agitators. It has a patented sparge design that supports flexible combinations of micro, medium and macro sparge sizes, helping to optimize the culture process and increase the yield.

The vessel is designed with 3 removable vortex plates, 1 degassing condenser, and 2 vent filter heating jackets. The vortex plates can enhance mixing for better mixing results. The degassing condenser returns the water that may be entrained in the vent gas due to the rapid gas flow.

Product Features

- A single controller supports the control of multiple vessels by plugging and unplugging, which contributes to significant cost reduction
- Reliable PCS 7 system that meets ISA 88 standard, applicable for whole-plant control
- User-friendly interface in compliance with 21 CFR Part 11
- Powerful magnetic bottom-driven device for effective mixing to realize a uniform mixing result
- Two-stage impellers for high oxygen transfer speed
- Micro, medium, and macro sparge size options for various processing needs
- Dimple jackets for heat transfer to support efficient cooling and heating
- Flexible configurations, partly customizable upon customer requirements



Standard Configuration

Item	Options	CLX MBR-50
System parameters		
Working volume (L)		25-50 L
Height to diameter ratio (H/D)		2.3:1
Accessory parameters		
pH traditional electrodes	Single-use / Arc electrodes	1-3
DO optical traditional electrodes		1-3
PAT toolsp	pCO ₂ 、 cell density, conductivity	0-2
Gas mass flow controller (MFC)	Optional gas and range	2-3
Integrated pump unit	Series 1, 3, and 5	2-4
Reserved port for external pump unit	Series 5, 6, and 7	0-4
Weighing module		1
Vent filter heating jacket	Optional size	2-4
Vortex plate		3
Degassing condenser		1
Temperature control unit (TCU)	Air-cooled or water-cooled	5 KW
Control unit		
Hardware	SIEMENS PCS 7 (DCS, compliant with ISA 88)	
Display	19" touch screen display, mouse and keyboard conforming to appropriate protection class, and built-in UPS	
Compliance	Compliant with 21 CFR PART 11	
Consumables		
Sparger	Medium, and macro sparge available	Medium sparge in the standard product
Tubing	Customizable tubing length	The tubing length in the standard product is sufficient for post-installation welding requirements
Vent filter	Optional	5inch、7inch、10inch

OPC DA/OPC UA Communication Protocol Overview

Features	OPC DA	OPC UA	Configuration requirements for BioLink bioreactor
Support Data Types	Real-time data only	Real - time data + historical data + alarms information	<ul style="list-style-type: none"> ✓ OPC DA is free of charge ✓ OPC UA requires license fees
Typical Applications	Integrate with third-party SCADA and monitoring systems	Integrate with SCADA, monitoring, I o T, and cloud systems	<ul style="list-style-type: none"> ✓ OPC DA and OPC UA requires no hardware configuration changes

Ordering Information

Cat. No.	Name	Configuration					Auxiliary Packing Device	Culture Volume (L)
		System	Vessel	Controller	TCU	Ladder		
CBR0010LA-001	CytoLinX® BR 10 L Single-use Bioreactor	PLC	√	√				4.5-10 L
CBR0050LA-001	CytoLinX® BR 50 L Single-use Bioreactor	PCS7	√	√	√			15-50 L
CBR0200LA-001	CytoLinX® BR 200 L Single-use Bioreactor	PCS7	√	√	√			40-200 L
CBR0500LA-001	CytoLinX® BR 500 L Single-use Bioreactor	PCS7	√	√	√			100-500 L
CBR1000LB-001	CytoLinX® BR 1000 L Single-use Bioreactor	PCS7	√	√	√	√	√	200-1000 L
CBR2000LB-001	CytoLinX® BR 2000 L Single-use Bioreactor	PCS7	√	√	√	√	√	400-2000 L
CBR0050LC-001	CytoLinX® BR 50 L Single-use Bioreactor	PCS7	√	√				15-50 L
CBR0200LC-001	CytoLinX® BR 200 L Single-use Bioreactor	PCS7	√	√				40-200 L
CBR0500LC-001	CytoLinX® BR 500 L Single-use Bioreactor	PCS7	√	√				100-500 L
CBR1000LC-001	CytoLinX® BR 1000 L Single-use Bioreactor	PCS7	√	√			√	200-1000 L
CBR2000LC-001	CytoLinX® BR 2000 L Single-use Bioreactor	PCS7	√	√			√	400-2000 L
CBR0050LD-001	CytoLinX® BR 50 L Single-use Bioreactor	PLC	√	√	√			15-50 L
CBR0200LD-001	CytoLinX® BR 200 L Single-use Bioreactor	PLC	√	√	√			40-200 L
CBR0500LD-001	CytoLinX® BR 500 L Single-use Bioreactor	PLC	√	√	√			100-500 L
CBR1000LD-001	CytoLinX® BR 1000 L Single-use Bioreactor	PLC	√	√	√		√	200-1000 L
CBR2000LD-001	CytoLinX® BR 2000 L Single-use Bioreactor	PLC	√	√	√		√	400-2000 L
MBR0050LA-001	CytoLinX® MBR 50 L Single-use Microbial Bioreactor	PCS7	√	√	√			25-50 L
MBR0050LC-001	CytoLinX® MBR 50 L Single-use Microbial Bioreactor	PCS7	√	√				25-50 L
MBR0050LD-001	CytoLinX® MBR 50 L Single-use Microbial Bioreactor	PLC	√	√	√			25-50 L

• Product sequence: 001 is the standard configuration, while other numbers are customized.

The standard configuration of CBR0010LA-001 does not include a TCU, and the heating method is a heating blanket.

Validation Services

Service Name	Service Code	Cat. No.
BR (Single-use Bioreactor) Standard Factory Acceptance Test (FAT)	11.59.81.01.0001	CBRFAT01
BR (Single-use Bioreactor) Standard Site Acceptance Test (SAT)	11.59.81.01.0003	CBRSAT01
BR (Single-use Bioreactor) Standard Installation and Operational Qualification (IQOQ)	11.59.81.01.0005	CBRIQOQ01
BR (Single-use Bioreactor) Standard Installation and Operational Qualification (IQOQ) (Including Test Bag)	11.59.81.01.0006	CBRIQOQ02
BR (Single-use Bioreactor) Standard Design Qualification (DQ)	11.59.81.01.0010	BRDQ02
BR (Single-use Bioreactor) Standard Risk Assessment (RA)	11.59.81.01.0012	BRRA02
BR (Single-use Bioreactor) Standard Computerized Systems Validation (CSV)	11.59.81.01.0014	BRCSV02

The table shows standard validation services. For customized services, please contact local technical support.

CytoLinX® BRCF Single-use Bottom-driven Bioreactor Bag

CytoLinX® BRCF Single-use Bottom-driven Bioreactor Bag is designed to match Single-use bottom-driven magnetic coupling bioreactor used in biopharmaceuticals. The product can be used for scientific research, process development and commercial production of CHO, Vero, and MDCK cells.

- With FirmaX® S32 multi-layer co-extrusion films, the fluid contact layer is ultra-low density polyethylene (ULDPE), which has good biocompatibility and chemical compatibility and contributes to a low level of extractable
- The ventilation tray contains 6 ventilation dial components, and the ventilation aperture is available in 20 µm, 300 µm, 0.5 mm, and 1 mm, with good aperture uniformity. Free combinations of micro, medium, and macro spargers are supported to meet different process requirements
- The impeller of 2000 L Bioreactor bags are made of engineering-grade plastic Peek for high hardness. The M40E design has a lower shear force and a shorter mixing time
- Standard imported filters to ensure the integrity of bags
- Customized tubings
- Comprehensive validations with completed validation reports



Figure 6. CytoLinX® BR Single-use Bioreactor (2000 L) and Controller

Standard Configuration

Volume	Version	Cat. No.	Configuration
<p>10 L</p>	Micro + Macro sparge	BRCF-0010-P221	<ul style="list-style-type: none"> Min. working volume: 4.5 L Max. working volume: 10 L Impeller: M40e, 3 blades, diameter: 137.2 mm, angle: 40°, bottom-center stirring a, b (inlet/feed): 8 cm 1/4" x 7/16" TPE thermoplastic tubing+155 cm 1/8" x 1/4" TPE thermoplastic tubing+30 cm 1/8" x 1/4" PharMed BPT pump tubing+8 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug d (inlet/feed): 8 cm 1/4" x 7/16" TPE thermoplastic tubing+8 cm 1/8" x 1/4" TPE thermoplastic tubing, Y-connector, 92 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), hose plug (x2) c (vent filter): 10 cm 3/8" x 5/8" TPE thermoplastic tubing, T-connector, tubing 1: 46 cm 3/8" x 5/8" TPE thermoplastic tubing, CPC AseptiQuik G aseptic connector; tubing 2: 10 cm 3/8" x 5/8" TPE thermoplastic tubing+8 cm 1/4" x 7/16" TPE thermoplastic tubing, ESG02MGSTKG12 (Saint-Gobain) e (overlay): pressure sensor, ESG02G25EEGM2 (Saint-Gobain), 16 cm 1/4" x 7/16" TPE thermoplastic tubing+15 cm 1/8" x 1/4" TPE thermoplastic tubing f (sampling): 8 cm 1/4" x 7/16" TPE thermoplastic tubing + 8 cm 1/8" x 1/4" TPE thermoplastic tubing, T-connector, tubing 1: 46 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug; tubing 2: 8 cm 1/8" x 1/4" TPE thermoplastic tubing, check valve, needless sampling g, h (sensor): female Kleenpak™ aseptic connector, 1/2"HB i (sensor): thermowell, ID 3.5 mm 2, 5 (harvest tubing): 30 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), Y-connector, 30 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug 3, 4 (sparger): 60 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), Y-connector, 30 cm 1/8" x 1/4" TPE thermoplastic tubing, ESG02G25EEGM2 (Saint-Gobain) (micro sparge) 1, 6 (sparger): 60 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), Y-connector, 30 cm 1/8" x 1/4" TPE thermoplastic tubing, ESG02G25EEGM2 (Saint-Gobain) (macro sparge)
	Medium + Macro sparge	BRCF-0050-P121 BRCF-0050-P123	<ul style="list-style-type: none"> Min. working volume: 15 L Max. working volume: 50 L Impeller: M40e, 3 blades, diameter: 216 mm, angle: 40°, bottom-center stirring e, c (inlet): 205 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug
<p>50 L</p>	Micro + Macro sparge	BRCF-0050-P221 BRCF-0050-P223	<ul style="list-style-type: none"> a (inlet): 60 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug d, g, h (small feed): 205 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug f (vent filter): ESG02MGSHHG12 (Saint-Gobain), T-connector, tubing 1: 60 cm 1/2" x 3/4" TPE thermoplastic tubing, hose plug; tubing 2: 28 cm 1/2" x 3/4" TPE thermoplastic tubing
	Macro sparge	BRCF-0050-P321 BRCF-0050-P323	<ul style="list-style-type: none"> b (overlay): pressure sensor, ESG02MGSHHG12 (Saint-Gobain), 45 cm 1/2" x 3/4" TPE thermoplastic tubing + 16 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing i (sampling): check valve, Y-connector, tubing 1: 30 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling; tubing 2: 50 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling
	Medium sparge	BRCF-0050-P421	<ul style="list-style-type: none"> j, k (sensor): female Kleenpak™ connector, 1/2" HB l (sensor): thermowell, ID 3.5 mm 1, 3, 5 (harvest tubing): 128 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug, OD 1/8"-OD 1" pinch valve 2, 4, 6 (sparger): ESG02MGSHHG12 (Saint-Gobain), 153 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing (only one filter is available for macro sparge and medium sparge)

Volume	Version	Cat. No.	Configuration
200 L	Medium + Macro sparge	BRCF-0200-P121	<ul style="list-style-type: none"> • Impeller: M40e, 3 blades, diameter: 216 mm, angle: 40° , bottom eccentric stirring • a, b (small feed): 305 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug • c, g (inlet): 305 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug • d, f (inlet): 60 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug
	Micro + Macro sparge	BRCF-0200-P221 BRCF-0200-P223	<ul style="list-style-type: none"> • e (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 75 cm 1/2" x 3/4" TPE thermoplastic tubing + 16 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing • o (vent filter): ESG02MGETTG12 (Saint-Gobain), T-connector, tubing 1: 25 cm 3/4" x 1" TPE thermoplastic tubing, hose plug tubing 2: 60 cm 1/2" x 3/4" TPE thermoplastic tubing
	Macro sparge	BRCF-0200-P321 BRCF-0200-P323	<ul style="list-style-type: none"> • h (sampling): 50 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), needleless sampling (x2) • i, j, k, l (sensor): female Kleenpak™ aseptic connector, 1/2" HB • m (sensor): thermowell, ID 3.5 mm
	Medium sparge	BRCF-0200-P421	<ul style="list-style-type: none"> • n (harvest tubing): 90 cm 1/2" x 3/4" TPE thermoplastic tubing, hose plug, OD 1/8"-OD 1" pinch valve • 1, 2, 3, 4, 5, 6 (sparger): ESG02MGSTKG12 (Saint-Gobain), 233 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing
500 L	Medium + Macro sparge	BRCF-0500-P121	<ul style="list-style-type: none"> • Min. working volume: 100 L • Max. working volume: 500 L • Impeller: M40e, 3 blades, diameter: 266 mm, angle: 40° , bottom eccentric stirring • a, b (small feed): 320 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug • c, g (inlet): 320 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug • d, f (inlet): 60 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug
	Micro + Macro sparge	BRCF-0500-P221 BRCF-0500-P223	<ul style="list-style-type: none"> • e (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 85 cm 1/2" x 3/4" TPE thermoplastic tubing + 16 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing • o (vent filter): ESG02MGETTG12 (Saint-Gobain), T-connector, tubing 1: 30 cm 3/4" x 1" TPE thermoplastic tubing, hose plug, tubing 2: 60 cm 1/2" x 3/4" TPE thermoplastic tubing
	Macro sparge	BRCF-0500-P321 BRCF-0500-P323	<ul style="list-style-type: none"> • h (sampling): 50 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), needleless sampling (x2) • i, j, k, l (sensor): female Kleenpak™ aseptic connector, 1/2" HB • m (sensor): thermowell, ID 3.5 mm
	Medium sparge	BRCF-0500-P421	<ul style="list-style-type: none"> • n (harvest tubing): 90 cm 1/2" x 3/4" TPE thermoplastic tubing, hose plug, OD 1/8"-OD 1" pinch valve • 1, 2, 3, 4, 5, 6 (sparger): ESG02MGSTKG12 (Saint-Gobain), 263 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing

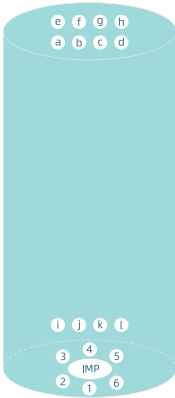
Volume	Version	Cat. No.	Configuration
1000 L	Medium + Macro sparge	BRCF-1000-P121	<ul style="list-style-type: none"> Min. working volume: 200 L Max. working volume: 1000 L Impeller: M40e, 3 blades, diameter: 317 mm, angle: 40° , bottom eccentric stirring
	Micro + Macro sparge	BRCF-1000-P221 BRCF-1000-P223	<ul style="list-style-type: none"> a, b (small feed): 340 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug c, d, f, g (inlet): 340 cm 1/2" x 3/4" TPE thermoplastic tubing, hose plug e (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 75 cm 1/2" x 3/4" TPE thermoplastic tubing + 16 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing o (vent filter): ESG02MGETTG12 (Saint-Gobain), T-connector, tubing 1: 30 cm 3/4" x 1" TPE thermoplastic tubing, hose plug; tubing 2: 60 cm 1/2" x 3/4" TPE thermoplastic tubing
	Macro sparge	BRCF-1000-P321 BRCF-1000-P323	<ul style="list-style-type: none"> h (sampling): 50 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), needleless sampling (x2) i, j, k, l (sensor): female Kleenpak™ aseptic connector, 1/2" HB m (sensor): thermowell, ID 3.5 mm
	Medium sparge	BRCF-1000-P421	<ul style="list-style-type: none"> n (harvest tubing): 90 cm 1" x 1-3/8" TPE thermoplastic tubing, hose plug, OD 1-3/8", WALL 3/16" 1, 2, 3, 4, 5, 6 (sparger): ESG02MGSHHG12 (Saint-Gobain), 288 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing
2000 L	Medium + Macro sparge	BRCF-2000-P121	<ul style="list-style-type: none"> Min. working volume: 400 L Max. working volume: 2000 L Impeller: M40e, 4 blades, diameter: 419 mm, angle: 40° , bottom eccentric stirring
	Micro + Macro sparge	BRCF-2000-P221 BRCF-2000-P223	<ul style="list-style-type: none"> a, b (small feed): 380 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug c, d, f, g (inlet): 380 cm 1/2" x 3/4" TPE thermoplastic tubing, hose plug e (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 150 cm 1/2" x 3/4" TPE thermoplastic tubing + 20 cm 1/4" x 7/16" TPE thermoplastic tubing, 6# quick plug for gas tubing o (vent filter): ESG02MGETTG12 (Saint-Gobain), Y-connector, tubing 1: 35 cm 3/4" x 1" TPE thermoplastic tubing, hose plug; tubing 2: 60 cm 3/4" x 1" TPE thermoplastic tubing
	Macro sparge	BRCF-2000-P321 BRCF-2000-P323	<ul style="list-style-type: none"> h (sampling): 50 cm 1/8" x 1/4" TPE thermoplastic tubing (x2), needleless sampling (x2) i, j, k, l (sensor): female Kleenpak™ aseptic connector, 1/2" HB m (sensor): thermowell, ID 3.5 mm
	Medium sparge	BRCF-2000-P421	<ul style="list-style-type: none"> n (harvest tubing): 90 cm 1" x 1-3/8" TPE thermoplastic tubing, hose plug, OD 1-3/8", WALL 3/16" 1, 2, 3, 4, 5, 6 (sparger): ESG02MGSHHG12 (Saint-Gobain), 318 cm 1/2" x 3/4" TPE thermoplastic tubing, 6# quick plug for gas tubing

Product Features

The core of the CytoLinX® BRCF 50 L microbial fermentation system is the single-use microbial bioreactor bag designed to meet the stringent requirements of microbial fermentation. It is used for cultivating various organisms, including E-coli, pseudomonas, and yeast. The Single-use microbial bioreactor bag is based on the proven design and materials of the CytoLinX® BRCF Single-use Bottom-driven Bag for mammalian cell culture.

- FirmaX® S32 multilayer co-extruded film, ULDPE liquid contact layer, offering excellent biocompatibility and chemical compatibility while ensuring low levels of extractable content
- The dual impeller design enables vigorous mixing of the culture, and the bottom magnetic coupling eliminates external shafts, minimizing the risk of leakage
- All Single-use microbial bioreactor bags are equipped with pressure sensors to maintain bag integrity during demanding fermentation processes
- The vent filter is equipped with a condensation bag at the front end to integrate condensation, returning water vapor from the gas back into the bag, ensuring the ventfilter remains unclogged

Standard Configuration

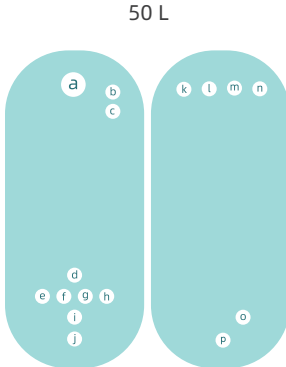
Volume	Version	Cat. No.	Configuration
50 L	Medium sparge	BRCF-0050-P424	<div></div> <ul style="list-style-type: none">• Min. working volume: 15 L• Max. working volume: 50 L• Impeller: double-layer, 6-blade Rushton impeller, pitched blades at the top, axial flow impeller, diameter: 195 mm, bottom-centered stir-ring• a, b, e, f (feed): 205 cm 1/8" x 1/4" TPE thermoplastic tubing, hose plug• c (pressure monitoring): pressure sensor, 16 cm 1/2" x 3/4" TPE thermoplastic tubing, hose plug• d (vent filter+condensation bag+backup vent filter port): 30 cm 1" x 1-3/8" TPE thermoplastic tubing, condensation bag, 20 cm 1" x 1-3/8" TPE thermoplastic tubing, ESG02MGETTG12 (Saint-Gobain), 15 cm 1" x 1-3/8" TPE thermoplastic tubing, AseptiQuik® L aseptic connector;• g (inlet): 205 cm 1/4" x 7/16" TPE thermoplastic tubing, hose plug;• h (inlet): 205 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug• i (vent filter): Y-connector, tubing 1: 30cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling; tubing 2: 50 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling• j, k (sensor): female Kleenpak™ aseptic connector• l (sensor): thermowell, ID 3.5 mm• 1, 3, 5 (harvest tubing): 128 cm 3/8" x 5/8" TPE thermoplastic tubing, hose plug, OD 1/8"-OD 1" pinch valve• 2, 4, 6 (bottom gas): ESG02MGSHHG12 (Saint-Gobain), 168 cm 1/4"x 7/16" TPE thermoplastic tubing, 6 # quick plug for gas tubing (only one filter for medium sparger)

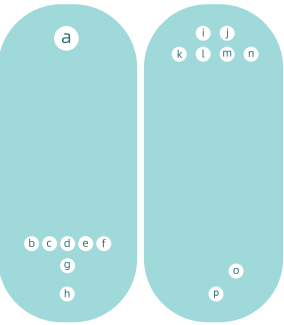
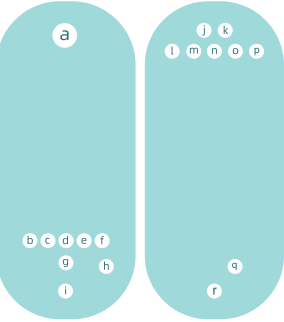
CytoLinX® BRTF Single-use Top-driven Bioreactor Bag

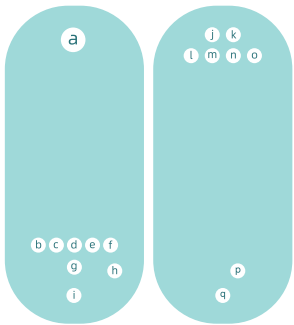
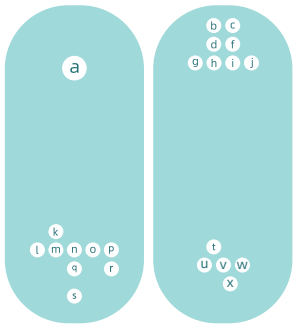
CytoLinX® BRTF Single-use Top-driven Bioreactor Bag is designed to match Single-use top mechanical coupling bioreactor used in biopharmaceuticals. The product can be used for scientific research, process development and commercial production of CHO, Vero, and MDCK cells, etc.

- FirmaX® S32 multilayer co-extruded film, ULDPE fluid contact layer, offering excellent biocompatibility and chemical compatibility while ensuring low levels of extractable content
- The porous-frit microsparge column is designed from ultra-high molecular weight polyethylene (UHMW-PE), with pore sizes ranging from 20-40 µm. The generated bubbles possess a high surface area ratio and good oxygen transfer. UHMW-PE exhibits outstanding impact resistance, wear resistance, chemical corrosion resistance, physiological inertness, adaptability, and hydrophobicity
- The macro-perforated microporous membrane is a dispersed aeration disc based on film. Laser-drilled to maintain uniform pore size, various specifications such as 0.178mm, 0.233mm, 0.368mm, 0.445mm, 0.582mm are available, tailored with specific apertures and quantities for each bag specification
- Equipped with imported filters to ensure bag integrity
- All pipelines can be flexibly customized
- Fully validated, complete validation reports can be provided

Standard Configuration

Volume	Version	Cat. No.	Configuration
 <p>50 L</p>	DHS+Frit 5:1	BRTF- 0050-C221	<ul style="list-style-type: none"> a (top-driven mixing parts)): 3-blade impeller, diameter: 111.1 mm, angle: 45° b (overlay): pressure sensor, ESG02MGSHHG12 (Saint-Gobain), 20 cm 1/2" x 3/4" TPE thermoplastic tubing + 16 cm 1/4" x 7/16" TPE thermoplastic tubing c (inlet/feed): 150 cm 1/4" x 7/16" TPE thermoplastic tubing, 30 cm 1/8" x 1/4" TPE thermoplastic tubing plug k (inlet/feed): 150 cm 3/8" x 5/8" TPE thermoplastic tubing, Y-connector, tubing 1: 40 cm 3/8" x 5/8" TPE thermoplastic tubing, plug tubing 2: 10 cm 3/8" x 5/8" TPE thermoplastic tubing, 30 cm 1/4" x 7/16" TPE thermoplastic tubing, plug l (inlet): 180 cm 3/8" x 5/8" TPE thermoplastic tubing, plug n (feeding): 15 cm 1/4" x 7/16" TPE thermoplastic tubing, 150 cm 1/8" x 1/4" TPE thermoplastic tubing, plug m (vent filter): 20 cm 1/2" x 3/4" TPE thermoplastic tubing, Y-connector, tubing 1: 25 cm 1/2" x 3/4" TPE thermoplastic tubing, ESG02MGSHHG12 (Saint-Gobain) tubing 2: 15 cm 1/2" x 3/4" TPE thermoplastic tubing, AseptiQuik® G aseptic connector, 1/2"HB
	DHS+Frit 2:1	BRTF- 0050-C222	<ul style="list-style-type: none"> e, f, g, h (sensor): AseptiQuik® G aseptic connector, 1/2"HB i (sampling): thermowell, ID 3.5 mm, tubing 1: 30 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling tubing 2: 80 cm 1/8" x 1/4" TPE thermoplastic tubing, plug
	Open- pipe+Frit 2:1	BRTF- 0050-C223	<ul style="list-style-type: none"> d (sensor) : thermowell, ID3.5 mm j (harvest port) : 100 cm 1/2" x 3/4" TPE thermoplastic tubing, 30 cm 3/8" x 5/8" TPE thermoplastic tubing, plug o, p (bottom gas): 15 cm 1/4" x 7/16" TPE thermoplastic tubing, check valve, 150 cm 1/4" x 7/16" TPE thermoplastic tubing, ESG02MGSHHG12 (Saint-Gobain)

Volume	Version	Cat. No.	Configuration
 <p>250 L</p>	DHS+Frit 5:1	BRTF- 0250-C221	<ul style="list-style-type: none"> a (top-driven mixing parts): 3-blade impeller, diameter: 200 mm, angle: 45° i (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 20 cm 1/2" x 3/4" TPE thermoplastic tubing + 16 cm 1/4" x 7/16" TPE thermoplastic tubing m (feed): 15 cm 1/4" x 7/16" TPE thermoplastic tubing, 180 cm 1/8" x 1/4" TPE thermoplastic tubing, plug k, l (inlet/feed): 150 cm 3/8" x 5/8" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 3/8" x 5/8" TPE thermoplastic tubing, plug tubing 2: 20 cm 3/8" x 5/8" TPE thermoplastic tubing, 40 cm 1/8" x 1/4" TPE thermoplastic tubing, plug n (inlet/feed): 150 cm 1/4" x 7/16" TPE thermoplastic tubing, 50 cm 1/8" x 1/4" TPE thermoplastic tubing, plug j (vent filter): 42 cm 3/4" x 1" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 3/4" x 1" TPE thermoplastic tubing, ESG02MGSHHG12 (Saint-Gobain) tubing 2: 20 cm 3/4" x 1" TPE thermoplastic tubing, AseptiQuik® G aseptic connector, 1/2" HB b, c, d, e (sensor): AseptiQuik® G aseptic connector, 1/2" HB g (sampling): 10 cm 1/8" x 1/4" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling tubing 2: 80 cm 1/8" x 1/4" TPE thermoplastic tubing, plug f (sensor): thermowell, ID 3.5 mm h (harvest): 150 cm 1/2" x 3/4" TPE thermoplastic tubing, plug o, p (sparger): ESG02MGSTKG12 (Saint-Gobain), 15 cm 1/4" x 7/16" TPE thermoplastic tubing, check valve, 150 cm 1/4" x 7/16" TPE thermoplastic tubing
	DHS+Frit 2:1	BRTF- 0250-C222	
	Open- pipe+Frit 2:1	BRTF- 0250-C223	
 <p>500 L</p>	DHS+Frit 5:1	BRTF- 0500-C221	<ul style="list-style-type: none"> a (top-driven mixing parts): 3-blade impeller, diameter: 251 mm, angle: 45° k (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 25 cm 1/2" x 3/4" TPE thermoplastic tubing + 16 cm 1/4" x 7/16" TPE thermoplastic tubing l (feed): 15 cm 1/4" x 7/16" TPE thermoplastic tubing, 230 cm 1/8" x 1/4" TPE thermoplastic tubing, plug m (inlet/feed): 250 cm 1/4" x 7/16" TPE thermoplastic tubing, plug n, o (inlet/feed): 180 cm 3/8" x 5/8" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 3/8" x 5/8" TPE thermoplastic tubing, plug tubing 2: 30 cm 3/8" x 5/8" TPE thermoplastic tubing, 30 cm 1/8" x 1/4" TPE thermoplastic tubing, plug p (inlet/feed): 250 cm 3/8" x 5/8" TPE thermoplastic tubing, plug j (vent filter): 40 cm 3/4" x 1" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 3/4" x 1" TPE thermoplastic tubing, ESG02MGETT12 (Saint-Gobain) tubing 2: 20 cm 3/4" x 1" TPE thermoplastic tubing, AseptiQuik® G aseptic connector, 3/4" HB b, c, d, e, f (sensor): AseptiQuik® G aseptic connector, 1/2" HB g (sampling): 10 cm 1/8" x 1/4" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling tubing 2: 80 cm 1/8" x 1/4" TPE thermoplastic tubing, plug h (sensor): thermowell, ID 3.5 mm i (harvest): 150 cm 1/2" x 3/4" TPE thermoplastic tubing, plug q, r (sparger): ESG02MGSTKG12 (Saint-Gobain), 16 cm 1/4" x 7/16" TPE thermoplastic tubing, check valve, 185 cm 1/4" x 7/16" TPE thermoplastic tubing
	DHS+Frit 2:1	BRTF- 0500-C222	
	Open- pipe+Frit 2:1	BRTF- 0500-C223	

Volume	Version	Cat. No.	Configuration
1000 L 	DHS+Frit 5:1	BRTF- 1000-C221	<ul style="list-style-type: none"> a (top-driven mixing parts): 3-blade impeller, diameter: 321 mm, angle: 45° k (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 50 cm 1/2" x 3/4" TPE thermoplastic tubing + 20 cm 1/4" x 7/16" TPE thermoplastic tubing l (feed): 15 cm 1/4" x 7/16" TPE thermoplastic tubing, 250 cm 1/8" x 1/4" TPE thermoplastic tubing, plug m (inlet/feed): 250 cm 1/4" x 7/16" TPE thermoplastic tubing, 30 cm 1/8" x 1/4" TPE thermoplastic tubing, plug n, o (inlet/feed): 250 cm 3/8" x 5/8" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 3/8" x 5/8" TPE thermoplastic tubing, plug tubing 2: 20 cm 3/8" x 5/8" TPE thermoplastic tubing, 35 cm 1/8" x 1/4" TPE thermoplastic tubing, plug
	DHS+Frit 2:1	BRTF- 1000-C222	<ul style="list-style-type: none"> j (vent filter): ESG02MGSTKG12 (Saint-Gobain) x 2, Y-connector, tubing 1: 25 cm 3/4" x 1" TPE thermoplastic tubing tubing 2: 25 cm 3/4" x 1" TPE thermoplastic tubing b, c, d, e, f (sensor): AseptiQuik® G aseptic connector, 1/2"HB g (sampling): 10 cm 1/8" x 1/4" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling tubing 1: 80 cm 1/8" x 1/4" TPE thermoplastic tubing, plug h (sensor): thermowell, ID 3.5 mm i (harvest): 160 cm 1/2" x 3/4" TPE thermoplastic tubing, 30 cm 3/8" x 5/8" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 3/8" x 5/8" TPE thermoplastic tubing, plug tubing 2: 20 cm 3/8" x 5/8" TPE thermoplastic tubing, 35 cm 1/8" x 1/4" TPE thermoplastic tubing, plug p, q (sparger): ESG02MGSTKG12 (Saint-Gobain), 16 cm 1/4" x 7/16" TPE thermoplastic tubing, check valve, 185 cm 1/4" x 7/16" TPE thermoplastic tubing
	Open- pipe+Frit 2:1	BRTF- 1000-C223	
2000 L 	DHS+Frit 5:1	BRTF- 2000-C221	<ul style="list-style-type: none"> a (top-driven mixing parts): 3-blade impeller, diameter: 397 mm, angle: 45° c (overlay): pressure sensor, ESG02MGSTKG12 (Saint-Gobain), 50 cm 1/2" x 3/4" TPE thermoplastic tubing + 30 cm 1/4" x 7/16" TPE thermoplastic tubing f (feed): 50 cm 1/4" x 7/16" TPE thermoplastic tubing, 220 cm 1/8" x 1/4" TPE thermoplastic tubing, plug h, i (inlet/feed): 220 cm 1/2" x 3/4" TPE thermoplastic tubing, 50 cm 3/8" x 5/8" TPE thermoplastic tubing, plug d (inlet/feed): 220 cm 1/4" x 7/16" TPE thermoplastic tubing, 50 cm 1/8" x 1/4" TPE thermoplastic tubing, plug g (inlet): 15 cm 1" x 1 - 3/8" TPE thermoplastic tubing, Y-connector (inner extension tubing), tubing 1: 15 cm 3/4" x 1" TPE thermoplastic tubing, 250 cm 1/2" x 3/4" TPE thermoplastic tubing, plug tubing 2: 15 cm 3/4" x 1" TPE thermoplastic tubing, 250 cm 1/2" x 3/4" TPE thermoplastic tubing, plug b, j (vent filter): ESG02MGSTKG12 (Saint-Gobain)x2, Y-connector, tubing 1: 25 cm 3/4" x 1" TPE thermoplastic tubing tubing 2: 25 cm 3/4" x 1" TPE thermoplastic tubing l, m, n, o, p (sensor): AseptiQuik® G aseptic connector, 1/2"HB q (vent filter): 10 cm 1/8" x 1/4" TPE thermoplastic tubing, Y-connector, tubing 1: 30 cm 1/8" x 1/4" TPE thermoplastic tubing, needless sampling tubing 2: 80 cm 1/8" x 1/4" TPE thermoplastic tubing, plug r (sensor): thermowell, ID 3.5 mm x (harvest): 150 cm 3/4" x 1" TPE thermoplastic tubing, Y-connector, tubing 1: 15cm 3/4" x 1" TPE thermoplastic tubing+60 cm 1/2" x 3/4" TPE thermoplastic tubing, plug tubing 2: 15cm 3/4" x 1" TPE thermoplastic tubing+60 cm 1/2" x 3/4" TPE thermoplastic tubing, plug s, t, u, w (sparger): ESG02MGSTKG12 (Saint-Gobain), 8 cm 1/4" x 7/16" TPE thermoplastic tubing, check valve, 200 cm 1/4" x 7/16" TPE thermoplastic tubing
	DHS+Frit 2:1	BRTF- 2000-C222	
	Open- pipe+Frit 2:1	BRTF- 2000-C223	

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