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Bacteria Welcome

BioBLU® f Single-Use Bioreactors for microbial cultures

»Defining single-use fermentation«

Simplifying fermentation

Combine the benefits of single-use bioreactor technology with the reliable performance of conventional glass or stainless steel bioreactors – Discover the Eppendorf BioBLU product line.

BioBLU f Single-Use Bioreactors for microbial applications were developed as true replacements for existing fermentation bioreactors. Utilizing an industrial standard, rigid-wall design, BioBLU f Single-Use Bioreactors allow microbial process development at the highest level. Covering working volumes from 65 mL to 3.75 L the BioBLU f portfolio supports you in process development and scale-up.

How BioBLU[®] single-use fermentation technology benefits you:

- > Reduced costs for cleaning and sterilization qualification
- > Reduce capital investment by using your existing equipment
- > Increased productivity with reduced turnaround time between runs
- > Simplified handling reduces cross contamination
- > Reliable scalability through industrial design
- > Simplify installation with rigid-wall design, reduced potential for bioreactor damage
- > Bioreactor body and head plate comprised of single layer injection molded plastic not containing softeners

Scalable single-use design: The Eppendorf BioBLU® f bioreactors.



Innovative accessories Tri-port, septum, and compression fitting adaptors for Pg 13.5 ports



Industrial head plate Multiple Pg 13.5 ports for sensor flexibility, integrated liquid addition and sampling ports. Enclosed magnetic drive reduces contamination risk. (BioBLU 0.3f shown)



Industry standard design Standard impeller size and bioreactor dimensions for efficient mixing and mass transfer with scalable results eppendorf



Effective exhaust treatment Water-cooled or liquid-free (Peltier) exhaust condensation



Baffles

Interior baffles aid mixing and mass transfer. The baffles of the BioBLU 1f additionally provide efficient heat removal through active cooling. (BioBLU 3f shown)



High-performance impellers Powerful magnetic overhead drives featuring Rushton-type impellers for optimum mass transfer (BioBLU 0.3f shown)



Suitable for high cell density

Compared to cell culture applications, fermentation processes have much higher mass transfer and heat removal requirements. Proven stirred-tank design, powerful overhead drives featuring Rushton-type impellers, and smart solutions for cooling make it possible for the BioBLU f bioreactors to achieve these demands.

	BioBLU [®] 0.3f	BioBLU [®] 1f	BioBLU [®] 3f
Stirring	up to 2,000 rpm	up to 1,500 rpm	up to 1,200 rpm
Heat transfer	> 50 W/L	> 50 W/L	> 50 W/L
Gassing	up to 2 vvm	up to 2 vvm	up to 1.5 vvm

Premium solutions for microbiology

The Eppendorf BioBLU f Single-Use Bioreactors fully address the specific needs of fermentation.

- > Sealed magnetic overhead drives with Rushton-type impellers for excellent mixing
- > High-performance mass and heat transfer suitable for highcell density fermentation
- > Minimal set-up times and simplified handling
- > Water-cooled or liquid-free (Peltier) exhaust condensation available



> Are you looking for more information, including application data? Visit our website by scanning the QR code or going to <u>www.eppendorf.group/biobluf</u>

As Good as Glass

When making the decision to move to a single-use process, the bioreactor should fit your process, not the other way around. BioBLU bioreactors for microbial applications are designed as drop-in replacements for your existing autoclavable bioreactors. From bioreactor geometries to process capabilities, BioBLU bioreactors make the switch to single-use easy.

	BioBLU [®] 0.3f	BioBLU [®] 1f	BioBLU [®] 3f	
Ratio H ₂ /D ₂ = Bioreactor height :	1.8	2.0	2.0	_
Bioreactor ID				
Ratio h _{vwmax} /D _i = Max. liquid height : Bioreactor ID	1.2	1.5	1.5	
Number of impellers	2	2 or 3	3	
Ratio d/D _i = Impeller OD : Bioreactor ID	0.4	0.4	0.4	
ID = inner diameter, OD = outer diameter				_



A high-cell density fed-batch cultivation of *E. coli* K12 in 3 L glass bioreactor and BioBLU 3f Single-Use Bioreactor, respectively, resulted in outstanding 200 OD₆₀₀ and highly similar growth curves—proving the excellent comparability of the bioreactor designs.

Single-Use Now



BioBLU® Single-Use Bioreactor Adaptor Kits & Single-Use Bioreactor Bundles BioBLU bioreactors are designed for use with the Eppendorf DASbox[®] and DASGIP[®] Parallel Bioreactor Systems, SciVario[®] twin, BioFlo[®] 120, and BioFlo 320. A range of adaptor kits is offered as well, enabling your existing bioreactor system for single-use operation without the expense of replacing the whole system.

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BioBLU Single-Use Bioreactor Bundles provide you with highest flexibility. They ease up to switch your bioreactor system from single-use to reusable vessel usage, back and forth.

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Technical data*

	BioBLU® 0.3f BioBLU® 1f		BioBLU [®] 3f	
Working volume (total)	65 – 250 mL (380 mL)	65 – 250 mL (380 mL) 250 mL – 1.25 L (1.8 L)		
Material	Bioreactor: polystyrene (PS), polycarbonate (PC)	Bioreactor: polystyrene (PS), polycarbonate (PC)	Bioreactor: polycarbonate (PC)	
	Tubing: silicone	Tubing: silicone	Tubing: silicone	
Sterilization	Irradiated by > 15 kGy (β) or > 25 k irradiated BioBLU [®] S	Irradiated by > 15 kGy (β) or > 25 kGy (X-ray). SAL-level 10 ⁻⁶ for X-ray irradiated BioBLU [®] Single-Use Bioreactors		
Autoclavable	No	No No		
Max. operating temperature	45 °C	45 °C 45 °C		
Head plate ports				
Pg 13.5	2x	3x	4x	
Liquid addition	1x submerged, 2x overlay	2x submerged, 3x overlay	1x submerged, 3x overlay	
DO sensor port	1x (permeable gas membrane)	1x (permeable gas membrane)	1x (Pg 13.5)	
Gas sparge				
Exhaust				
Harvest tube				
Thermowell				
Baffles		4x	4x	
Drive				
Impellers	2 Rushton-type impellers (6 blades)	2 or 3 Rushton-type impellers (6 blades)	3 Rushton-type impellers (6 blades)	
Recommended	20 – 2,000 rpm	100 – 1,500 rpm	25 – 1,200 rpm	
agitation speed**				
Exhaust	Liquid-free (Peltier)	Liquid-free (Peltier)/water-cooled	Water-cooled	
condensation***				
Cooling	Peltier-based	Baffles with integrated cooling	Cooling finger	
Sensors***	Dissolved Oxygen: polarographic	Dissolved Oxygen: polarographic	Dissolved Oxygen: polarographic or	
	(DASGIP DO Sensor, 162/4.7 mm)	(DASGIP DO Sensor, 278/4.7 mm)	optical (225/12 mm)	
	Temperature: Pt100 - RTD	Temperature: Pt100 - RTD	Iemperature: Pt100 - RTD	
	pH: standard 120/12 mm glass sensor	pH: standard 220/12 mm glass sensor	pH: standard 225/12 mm glass sensor	

Ordering information	on			
Bioreactor	Impellers	Quantity	Order number	Order number
			(X-ray irradiated)	(β-irradiated)
BioBLU [®] 0.3f	2 x Rushton-type	4-pack	1386101100	1386100100
BioBLU [®] 1f	2 x Rushton-type	4-pack	1386113000	1386110200
	3 x Rushton-type	4-pack	1386113100	1386110300
BioBLU [®] 3f	3 x Rushton-type	1-pack	1386000900 (no pre-sterilization)	

* Technical specifications are subject to change without notice. ** Agitation speed range may be limited by capabilities of controller. *** Specifications apply to the operation with DASbox Mini Bioreactor System, DASGIP Parallel Bioreactor Systems, SciVario twin, and BioFlo controllers, respectively. These accessory parts are separate items.

Your local distributor: www.eppendorf.com/contact Eppendorf SE · Barkhausenweg 1 · 22339 Hamburg · Germany eppendorf@eppendorf.com · www.eppendorf.com

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