



# Single-Use Simplicity

BioBLU® c and BioBLU p Single-Use Bioreactors for cell culture

# »Proven stirred-tank design meets single-use technology.«

## **Reliable performance and ease-of-use**

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 c Single-Use Bioreactors allow scalable cell culture from research to pilot/production scale. These rigid-wall stirred-tank single-use bioreactors have been specifically designed and optimized for cultivation of mammalian cells.

The BioBLU 5p bioreactor is a packed-bed bioreactor perfectly suited for adherent cells and perfusion culture. Pre-loaded with Fibra-Cel® disks, it provides a solid support growth matrix, e.g. for production of secreted proteins.

The BioBLU 0.3sc bioreactor was optimized for slow stirring and cell aggregate formation, to suit the special needs of stem cells.

## **How BioBLU single-use technology benefits you:**

- > Reduced costs for cleaning and sterilization qualification
- > Reduced turnaround, more runs, more productivity
- > Reduced handling and cross contamination
- > Simplify installation with rigid-wall design, no risk for damages due to folding of bioreactor bags
- > Scale-up your process. BioBLU bioreactors utilize an industry standard stirred-tank design
- > Reduce the amount of lost runs due to sensor failure with non-invasive sensor options
- > Reduce capital investment, use your existing equipment. BioBLU bioreactors are compatible with a variety of Eppendorf benchtop bioprocess systems

## Scalable single-use design from 100 mL to 40 L: The BioBLU® Single-Use Bioreactors.\*



### Effective exhaust treatment

Liquid-free exhaust condensation (Peltier) or electric heater band



### Industrial head plate

Integration of standard sensors, liquid addition and sampling ports. Enclosed magnetic drive reduces contamination risk (BioBLU 0.3c shown)



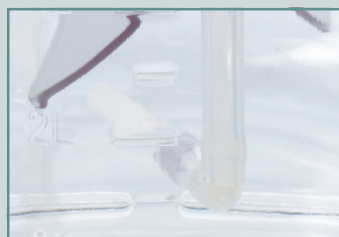
### Non-invasive sensors

Non-invasive standard DO and optical pH sensor ports remove sensor failure concerns



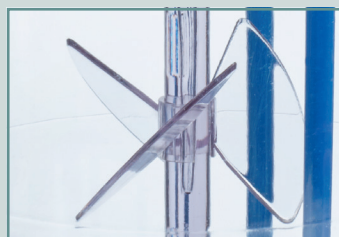
### Weldable or easy-to-connect tubing

In-field flexibility and ease-of-use



### Flexible gassing

Overlay and submerged gassing; multiple sparge options available to best suit your application



### Industry standard design

Standard impeller size and bioreactor dimensions for efficient mixing and mass transfer, and scalable results



\*BioBLU 1c shown





#### **Design advantage – scalable design from 100 mL – 40 L**

The BioBLU rigid-wall stirred-tank bioreactor concept simplifies technology transfer and scalability by mimicking the performance and design of traditional glass and stainless steel bioreactors. Bioreactors are individually pressure-tested to ensure bioreactor integrity.

With industry standard dimensions the BioBLU family supports effective mixing and mass transfer as well as reproducible cultivation conditions from research and process development up to pilot and production.

#### **Polymer expertise by Eppendorf**

Decades of experience in the field of sophisticated polymer products is key to the development of BioBLU Single-Use Bioreactors. Our experts did address the widely discussed questions associated with leachables and extractables (L&E) and help to make your laboratory more efficient and safe:

- > Bioreactor body and head plate comprised of single layer injection molded plastic: no additives such as softeners
- > Virgin raw materials: no risk from use of recycled materials
- > No middle man: Eppendorf sources all raw material directly
- >  $\beta$ -irradiated sterilization: avoids degradation of polymer layers associated with  $\gamma$ -ray-based sterilization

**Leachables and extractables** are defined as substances that can either be extracted from plastic materials under harsh conditions (e.g. extreme temperatures, presence of solvent) or released spontaneously under standard conditions. They may originate from compounds used in polymer manufacturing such as softeners, stabilizers, and antioxidants. Especially cytotoxic effects and altered product characteristics cause safety concerns in biopharmaceutical manufacturing which is why validation and testing of materials is of utmost importance for a reliable drug production process.

# Scalable Solutions

The comprehensive portfolio of BioBLU bioreactors provide a headstart for users looking to scale-up their process. Every effort was made to ensure that each bioreactor design promoted consistency across the product line. Bioreactor geometries, process capabilities, and materials of construction all working together to create a harmonized portfolio perfect for scale-up processes.

	BioBLU 0.3c	BioBLU 1c	BioBLU 3c	BioBLU 10c	BioBLU 50c
Ratio $H_i/D_i$ = Bioreactor height : Bioreactor ID	1.8	2.0	2.0	2.0	2.0
Ratio $h_{vmax}/D_i$ = Max. liquid height : Bioreactor ID	1.2	1.5	1.5	1.5	1.3
Number of impellers	1	1 or 2	1 or 2	1	1
Ratio $d/D_i$ = Impeller OD : Bioreactor ID	0.5	0.5	0.5	0.5	0.5

ID = inner diameter, OD = outer diameter

## Packed to Improve

### BioBLU p Single-Use Packed-Bed Bioreactor

Achieve maximum cell densities and product yields while your cells savor minimized shear forces and uniform nutrient and oxygen supply. BioBLU p bioreactors apply our proprietary Eppendorf packed-bed impeller system to ready-to-use single-use bioreactors. They are pre-loaded with Fibra-Cel® Disks, providing significant advantages over traditional cell culture systems and supporting continuous and perfusion cultivations. BioBLU p are perfectly suited for anchorage-dependent and suspension cell lines, for the production of secreted proteins.



## Single-Use Now



### BioBLU Single-Use Bioreactor Adaptor Kits & Single-Use Bioreactor Bundles

BioBLU Single-Use 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.

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



For more detailed information and ordering numbers please refer to our bioprocess product catalog, or contact your local Eppendorf sales representative.

[www.eppendorf.com/catalog](http://www.eppendorf.com/catalog)

## Technical data<sup>1</sup>

	BioBLU® 0.3c BioBLU® 0.3sc	BioBLU® 1c	BioBLU® 3c	BioBLU® 5p	BioBLU® 10c	BioBLU® 50c
Working volume (total)	100 – 250 mL (380 mL)	320 mL – 1.25 L (1.8 L)	1.25 – 3.75 L (5 L)	3.75 L (5 L)	3.3 – 10 L (13.3 L)	18 – 40 L (50 L)
Material; Sterilization	Bioreactor: PS, PC, tubing: silicone, C-Flex; 15 kGy $\beta$ -irradiated					
Head plate ports						
Pg 13.5	2x	3x	4x	1x	4x	1x
Liquid addition	1x submerged, 1x overlay	2x submerged, 2x overlay	1x submerged, 3x overlay	3x overlay	1x submerged, 3x overlay	3x overlay
DO sensor port	1x (permeable gas membrane)	1x (permeable gas membrane)	1x (permeable gas membrane) <sup>2</sup>	1x (permeable gas membrane)	1x (permeable gas membrane) <sup>2</sup>	1x (permeable gas membrane)
Optical pH sensor port	■ <sup>2</sup>	■ <sup>2</sup>	■ <sup>2</sup>	■	■ <sup>2</sup>	■
Gas sparge	■	■	■	■	■	■
Gas overlay	■	■	■	■	■	■
Exhaust	■	■	■	■	■	■
Harvest tube	■	■	■	■	■	■
Thermowell	■	■	■	■	■	■
Drive	Magnetic overhead drive					
Fibra-Cel® disks	–	–	–	150 g	–	–
Recommended agitation speed	20 – 500 rpm (BioBLU 0.3c) 20 – 200 rpm (BioBLU 0.3sc)	30 – 600 rpm	25 – 200 rpm	25 – 200 rpm	25 – 200 rpm	25 – 150 rpm
Exhaust treatment <sup>3</sup>	Liquid-free (Peltier)	Liquid-free (Peltier) or water-cooled	Electric heater band or Peltier	Electric heater band or Peltier	Electric heater band	Electric heater band

## Ordering information

Description	Application	Working volume	Sparger	Impeller	pH	Quantity	Order no.
BioBLU® 0.3c	Cell culture	100 – 250 mL	Open pipe	1x pitched blade	Standard	4-pack	1386100000
BioBLU® 0.3c	Cell culture	100 – 250 mL	Open pipe	1x pitched blade	Optical	4-pack	1386100200
BioBLU® 0.3sc	Cell culture	100 – 250 mL	Open pipe	1x 8-blade	Standard	4-pack	1386100600
BioBLU® 1c	Cell culture	320 mL – 1.25 L	Open pipe	1x pitched blade	Standard	4-pack	1386110000
BioBLU® 1c	Cell culture	320 mL – 1.25 L	Open pipe	1x pitched blade	Optical	4-pack	1386110400
BioBLU® 1c	Cell culture	320 mL – 1.25 L	Open pipe	2x pitched blade	Standard	4-pack	1386110100
BioBLU® 1c	Cell culture	320 mL – 1.25 L	Open pipe	2x pitched blade	Optical	4-pack	1386110500
BioBLU® 3c	Cell culture	1.25 L – 3.75 L	Microsparger	1x pitched blade	Optical	1-pack	1386000100
BioBLU® 3c	Cell culture	1.25 L – 3.75 L	Macrosparger	1x pitched blade	Optical	1-pack	1386000300
BioBLU® 3c	Cell culture	1.25 L – 3.75 L	Microsparger	2x pitched blade	Optical	1-pack	1386120000
BioBLU® 3c	Cell culture	1.25 L – 3.75 L	Macrosparger	2x pitched blade	Optical	1-pack	1386121000
BioBLU® 5p	Cell culture	3.75 L	Microsparger	Packed bed	Optical	1-pack	M1363-0119
BioBLU® 5p	Cell culture	3.75 L	Macrosparger	Packed bed	Optical	1-pack	M1363-0133
BioBLU® 10c	Cell culture	3.3 L – 10 L	Microsparger	1x pitched blade	Optical	1-pack	1386140000
BioBLU® 10c	Cell culture	3.3 L – 10 L	Macrosparger	1x pitched blade	Optical	1-pack	1386141000
BioBLU® 50c	Cell culture	18 L – 40 L	Microsparger	1x pitched blade	Optical	1-pack	M1363-0131
BioBLU® 50c	Cell culture	18 L – 40 L	Macrosparger	1x pitched blade	Optical	1-pack	M1363-0129

<sup>1</sup> Technical specifications are subject to change without notice. <sup>2</sup> Utilizes 1x Pg 13.5 port. <sup>3</sup> These accessory parts are separate order items.

Your local distributor: [www.eppendorf.com/contact](http://www.eppendorf.com/contact)

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