

# Keep Growing

BioFlo® 120 bioprocess control station



# »Performance meets value.«

The Eppendorf BioFlo 120 offers simplicity and ease of use, without sacrificing capability. No matter if you are in an academic, governmental or industrial research setting, or working with bacteria, yeast, fungi, mammalian, insect or plant cells, the BioFlo 120 is an attractive solution to meet your needs—all at an affordable price.

## **Feature-packed and future-proof**

- > Scale-up from 250 mL to 40 L on a wide variety of autoclavable and Eppendorf BioBLU® Single-Use Vessels
- > New Auto Culture modes offer process control for microbial and cell culture applications at the touch of a button
- > Ready for process. Unbox and install in minutes
- > Save critical lab space with a minimal footprint
- > Universal connections for digital Mettler Toledo® ISM sensors or analog sensors offer unsurpassed flexibility
- > User-defined DO cascades offer process flexibility
- > Automatic gas mixing algorithms for simplified control
- > View your entire process with expanded trend screen
- > Access your data from anywhere with Eppendorf SCADA platforms, IP network, and remote monitoring capabilities

Connection for interchangeable direct- and magnetic-drive motors; magnetic drive capable of clockwise and counterclockwise rotation for simplified impeller selection

Easy-to-read 7" integrated touchscreen monitor



Three user-defined analog input/output connections. Select between 0-5V, 0-10V, and 4-20 mA depending on the device

All vessel connections located on the side—set up and ready to go in minutes

High-precision thermal mass flow controller (TMFC) or rotameter for gas flow control. Standard automatic mixing of four independent sparge gas supplies

IP21 rated enclosure for protection of sensitive electronics and cleanability.

Water recirculation module provides precise temperature control and exhaust condensing

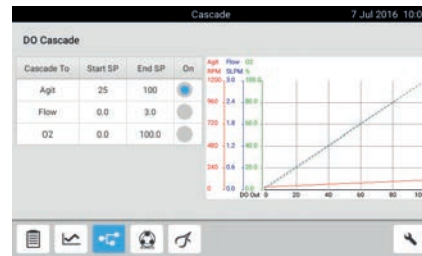
Three front-mounted fixed-speed pumps with industry-standard easy load pump heads for convenient liquid addition/removal

## BioBLU® single-use advantage



- > The rigid-walled design advantage:
  - > Sets up in minutes, no inflation necessary
  - > No more tears, pits, or folds as seen in bag installations
  - > Consistent leachables and extractables profile with single-layer molded polymer vs. multi-layer bag design
- > Scale from 250 mL to 40 L with BioBLU Single-Use Vessels
- > BioBLU f vessels designed for high density fermentation
- > Eppendorf exclusive BioBLU 5p with Fibra-Cel® Disks for continuous and perfusion processes

## Sophisticated software



- > Eppendorf Bioprocess Control Software offers real time, local process control with integrated touchscreen
- > Optional Eppendorf SCADA platforms (BioCommand®, DASware®) provide high level process control capabilities, and secure database management
- > IP networking provides remote access through PC or mobile device

## Scalable solutions



- > Perfectly suited for research and development
- > Scale-up and scale-down modeling
- > Growth of seed to pilot-scale cultures in a working volume range of 250 mL to 40 L
- > Blends into the Eppendorf bioreactor and fermentor portfolio covering working volumes of 65 mL to 2,400 L, for comprehensive scalability

## Unlimited applications



- > Grow any cell type you can think of: Microbial, insect, plant, fungal, mammalian, and stem cells
- > Unlimited process flexibility: Batch, fed-batch, continuous, or perfusion; supports high-density, micro-aerobic, and anaerobic fermentation, secreted products production, and process development for cell and gene therapies



Find more detailed information, including video presentations, an online configurator and a 360° product show on our website. Visit [www.eppendorf.com/BioFlo120](http://www.eppendorf.com/BioFlo120) or easily scan the QR code beside.



# Eppendorf Handling Solutions

Liquid Handling  
Cell Handling  
Sample Handling

To make your job in the lab easier and more efficient – with this goal in mind we are developing products and solutions in the areas of Liquid Handling, Cell Handling, and Sample Handling. Visit the Eppendorf Handling Solutions online sphere and dive into the area of your choice, learn new things, and have fun as well: [www.eppendorf.com/handling-solutions](http://www.eppendorf.com/handling-solutions)



## Liquid Handling

In 1961, Eppendorf launched the first piston-stroke pipette. Today, our broad product offerings in Liquid Handling range from manual pipettes to electronic pipettes, dispensers and burettes to automated pipetting systems.



### ■ Eppendorf Easypet® 3

Experience a new dimension of electronic pipetting with complete speed control and the utmost precision.

- > Intuitive and convenient speed adjustment simply done with the tips of your fingers
- > Lightweight, well-balanced and ergonomic design that allows for fatigue-free pipetting

## Cell Handling

For handling cells, in addition to manipulators and injectors, incubators and consumables for cultivation as well as complete bioreactor systems for cell culture applications are also available. Corresponding detection systems are offered for subsequent analysis.



### ■ New Brunswick™ S41i

The only CO<sub>2</sub> incubator with an Eppendorf shaker inside.

- > Precise control of temperature, shaking speed and CO<sub>2</sub> for stable culture conditions
- > Easy-to-clean chamber design and 120°C disinfection cycle saves time and effectively eliminates contamination

## Sample Handling

Sample Handling encompasses many different work processes and steps: centrifugation, heating, freezing, mixing, amplification, and analysis of samples. Eppendorf offers the devices and consumables needed for each of these steps.



### ■ Centrifuge 5920 R

Experience extraordinary high capacity in a very compact and ergonomic product design.

- > Swing-bucket rotors and adapters accommodate tubes and bottles from 0.2 mL to 1,000 mL
- > Fixed-angle rotors and plate rotor options



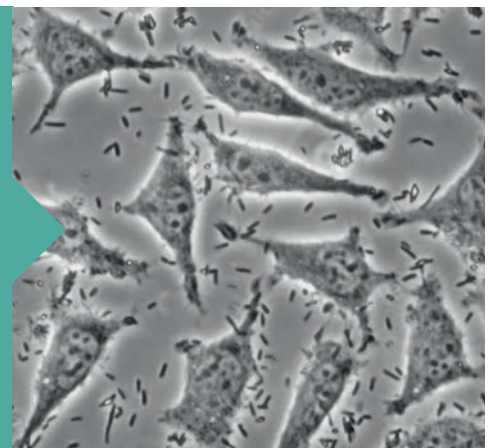
### ■ epMotion® 5075m

The most flexible member of our family of automated liquid handling systems.

- > Mixing, temperature control and magnetic bead separation abilities
- > Optical sensor verifies labware, tips and volumes before the run

## Concerned about Bacteria in Cell Culture?

Find useful tips on  
[www.eppendorf.com/cellexperts](http://www.eppendorf.com/cellexperts)



**Vessel Specifications**

| <b>Autoclavable vessels</b>            |  |                    |                    |                    |
|--|--|--------------------|--------------------|--------------------|
| <b>Vessel</b>                          | <b>1 L</b>   | <b>2 L</b>         | <b>5 L</b>         | <b>10 L</b>        |
| Total volume                           | 1.3 L  | 3.0 L              | 7.5 L              | 14.0 L             |
| Working volume                         | 0.4 – 1.0 L  | 0.8 – 2.2 L        | 2.0 – 5.6 L        | 4.0 – 10.5 L       |
| Vessel type                            | Water-jacketed or heat-blanketed                   |                    |                    |                    |
| Material                               | Borosilicate glass, 316L stainless steel           |                    |                    |                    |
| <b>Impellers</b>                       |  |                    |                    |                    |
| Direct drive or magnetic drive         | Rushton-type, pitched blade, marine or spin filter |                    |                    |                    |
| <b>Autoclave dimensions</b>            |  |                    |                    |                    |
| <b>Heat-blanketed</b>                  |  |                    |                    |                    |
| Outer diameter (OD)                    | 20.3 cm<br>8.0 in                                  | 20.3 cm<br>8.0 in  | 29.8 cm<br>11.7 in | 29.8 cm<br>11.7 in |
| Height (without exhaust filter)        | 54.0 cm<br>21.3 in                                 | 54.0 cm<br>21.3 in | 61.0 cm<br>24.0 in | 68.0 cm<br>26.9 in |
| <b>Water-jacketed</b>                  |  |                    |                    |                    |
| Outer diameter (OD)                    | 24.1 cm<br>9.5 in                                  | 24.1 cm<br>9.5 in  | 29.8 cm<br>11.7 in | 29.8 cm<br>11.7 in |
| Height (without exhaust filter)        | 48.9 cm<br>19.3 in                                 | 56.5 cm<br>22.3 in | 64.8 cm<br>25.5 in | 76.8 cm<br>30.3 in |
| <b>Number of head plate ports</b>      |  |                    |                    |                    |
| 6 mm                                   | 1  | 6                  | 7                  | 7                  |
| 12 mm                                  | 9  | 7                  | 8                  | 8                  |
| 19 mm                                  | 0  | 0                  | 1                  | 1                  |
| Total                                  | 10   | 13                 | 16                 | 16                 |
| <b>Recommended sensor lengths (mm)</b> |  |                    |                    |                    |
| <b>Sensor</b>                          |  |                    |                    |                    |
| pH (analog) <sup>1</sup>               | 200  | 225                | 325                | 425                |
| pH/redox (digital) <sup>1</sup>        | 225  | 225                | 325                | 425                |
| DO (analog) <sup>1</sup>               | 160  | 220                | 320                | 420                |
| DO (digital/optical) <sup>1</sup>      | 220  | 220                | 320                | 420                |
| Redox (analog) <sup>1</sup>            | 200  | 325                | 325                | 425                |
| CO <sub>2</sub> (digital) <sup>1</sup> | 220  | 320                | 320                | 320                |

| <b>Single-use vessels</b>              |   |                    |                  |                  |                   |                   |
|--|---|--------------------|------------------|------------------|-------------------|-------------------|
| <b>Vessel</b>                          | <b>BioBLU 1c/f</b>  | <b>BioBLU 3c/f</b> | <b>BioBLU 5c</b> | <b>BioBLU 5p</b> | <b>BioBLU 14c</b> | <b>BioBLU 50c</b> |
| Total volume                           | 1.8 L   | 5 L                | 5 L              | 5 L              | 14 L              | 50 L              |
| Working volume                         | 0.25 – 1.25 L <sup>2</sup>  | 1.25 – 3.75 L      | 1.25 – 3.75 L    | 3.75 L           | 3.5 – 10.5 L      | 18 – 40 L         |
| Vessel type                            | Rigid-walled, stirred-tank  |                    |                  |                  |                   |                   |
| <b>Impellers</b>                       |   |                    |                  |                  |                   |                   |
| Magnetic drive                         | BioBLU c: pitched blade/BioBLU p: packed-bed/BioBLU f: Rushton-type |                    |                  |                  |                   |                   |
| <b>Recommended sensor lengths (mm)</b> |   |                    |                  |                  |                   |                   |
| pH (EC) <sup>3</sup>                   | 220   | 225                | 225              | 100              | 425               | 625               |
| DO <sup>3</sup>                        | 220   | 225                | 225              | 120              | 355               | 526               |
| Redox <sup>3</sup>                     | 220   | 225                | 225              | 120              | 425               | 625               |
| CO <sub>2</sub> <sup>3</sup>           | 220   | 220                | 220              | 120              | 320               | N/A               |

<sup>1</sup> Installation may require compression fitting for optimal fit and depth (M1273-5040), 2 x included with Vessel Connection Kit.

<sup>2</sup> BioBLU 1c: 425 mL minimal working volume when used with vessel stand and heat blanket

<sup>3</sup> Installation may require compression fitting for optimal fit and depth (1386010200).

Specifications subject to change.

## BioFlo 120 Specifications

| Control Station  |   |  |
|--|---|--|
| Dimensions (W x D x H)   | 24.7 x 55.9 x 62.9 cm (9.7 x 22 x 24.8 in)  |  |
| Net weight   | 14.8 kg (32.7 lb)   |  |
| Touchscreen  | 7 in projected capacitive touchscreen   |  |
| Communication  | 2 x USB (software updates, serial communication)<br>Ethernet (SCADA, IP Network)  |  |
| Utility  | Connection  | Requirement  |
| Electrical   | IEC-C14 (with regional plug types)  | 100 – 120/208 – 240 (± 10 %) V, 50/60 Hz, 10 A, Single Phase                 |
| Water  | Quick-connect   | 10 psig (0.69 barg)  |
| Gas supply (air, O <sub>2</sub> , N <sub>2</sub> , CO <sub>2</sub> ) | Push-connect fittings accept 1/4 in tubing or hose barb fitting   | <b>Autoclavable</b> 10 psig (0.69 barg) <b>Single-use</b> 6 psig (0.44 barg) |
| Exhaust  | 0.5 psig (0.035 barg)   |  |
| Operating conditions   | 10 – 30°C, up to 80 % RH, non-condensing  |  |
| Altitude limit   | 2000 m  |  |
| Agitation  |   |  |
| Direct drive   | 1 L: 25 – 1,500 rpm<br>3 L, 5 L, 10 L: 25 – 1,200 rpm   |  |
| Magnetic drive (autoclavable vessels)                                | 1 L, 3 L, or 5 L: 5 – 500 rpm<br>10 L: 5 – 150 rpm  |  |
| Magnetic drive (single-use vessels)                                  | BioBLU 1f & 3f: 5 – 1,200 rpm<br>BioBLU 1c: 5 – 500 rpm<br>BioBLU 3c, 5c, 5p & 14c: 5 – 200 rpm<br>BioBLU 50c: 5 – 150 rpm  |  |
| Temperature  |   |  |
| Autoclavable   | 1, 2, 5 L: 8°C above coolant to 45°C above ambient (0°C – 70°C absolute) <sup>1</sup><br>10 L: 8°C above coolant to 40°C above ambient (0°C – 65°C absolute) <sup>1</sup> |  |
| BioBLU Single-Use Vessels  | BioBLU c vessels: 5°C above ambient to 40°C <sup>1</sup><br>BioBLU f vessels: 5°C above coolant to 45°C <sup>1</sup>  |  |
| Sensor type  | Pt100   |  |
| Gas supply   |   |  |
| Sparge   | 1 TMFC (0.04 – 20 SLPM) or 1 rotameter (multiple options available); ring or microsparger   |  |
| Sensors  | Communication   | Control range  |
| pH   | Analog or digital Mettler Toledo ISM  | 2 – 12   |
| DO   | Analog or digital Mettler Toledo ISM  | 0 – 200 % (air saturation)   |
| Optical DO   | Digital Mettler Toledo ISM  | 0 – 200 % (air saturation)   |
| Redox  | Analog or digital Mettler Toledo ISM  | (-)2000 mV – (+)2000 mV  |
| CO <sub>2</sub>  | Digital Mettler Toledo ISM  | 0 – 100 %  |
| Pumps  | Pump head   | Fixed speed  |
| Pumps 1, 2, & 3  | Watson-Marlow 114DV   | 30 rpm (0 – 100 % duty cycle)  |

<sup>1</sup> Requires 115/230 V line voltage. Specifications cannot be guaranteed with operation at alternative line voltages.

Specifications subject to change.

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

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