eppendorf



BioFlo® 120 bioprocess control station



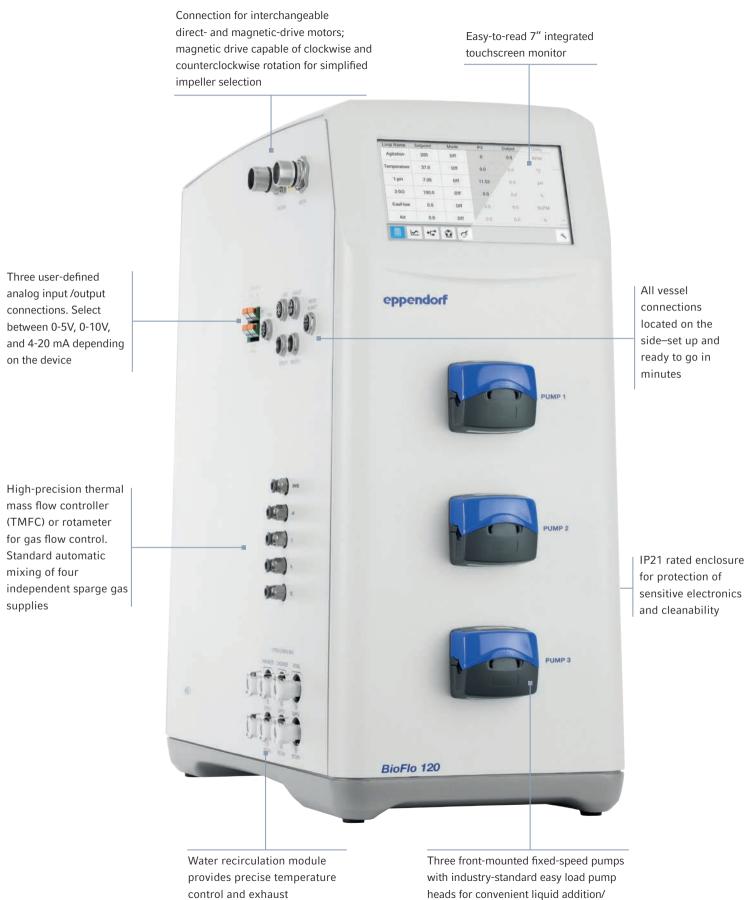
»Performance meets value.«

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



condensing

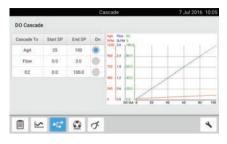
heads for convenient liquid addition/ removal

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 installationsConsistent 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 or easily scan the QR code beside.



Eppendorf Handling Solutions

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**

Liquid Handling Cell Handling Sample Handling



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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.

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 available. Corresponding detection systems are offered for subsequent analysis.

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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.



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



■ New Brunswick[™] S41i

The only CO_2 incubator with an Eppendorf shaker inside.

- > Precise control of temperature, shaking speed and CO₂ for stable culture conditions
- > Easy-to-clean chamber design and 120°C disinfection cycle saves time and effectively eliminates contamination



Centrifuge 5920 R

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

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



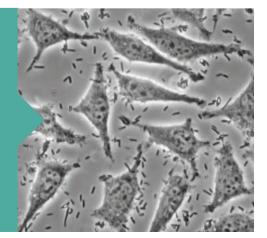
epMotion[®] 5075m

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



Autoclavable vessels							
Vessel	1 L	2 L	5 L	10 L			
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						
Impellers							
Direct drive or magnetic drive	Rushton-type, pitched blade, marine or spin filter						
Autoclave dimensions							
Heat-blanketed							
Outer diameter (OD)	20.3 cm	20.3 cm	29.8 cm	29.8 cm			
	8.0 in	8.0 in	11.7 in	11.7 in			
Height (without exhaust filter)	54.0 cm	54.0 cm	61.0 cm	68.0 cm			
	21.3 in	21.3 in	24.0 in	26.9 in			
Water-jacketed							
Outer diameter (OD)	24.1 cm	24.1 cm	29.8 cm	29.8 cm			
	9.5 in	9.5 in	11.7 in	11.7 in			
Height (without exhaust filter)	48.9 cm	56.5 cm	64.8 cm	76.8 cm			
	19.3 in	22.3 in	25.5 in	30.3 in			
Number of head plate ports							
6 mm	1	6	7	7			
12 mm	9	7	8	8			
19 mm	0	0	1	1			
Total	10	13	16	16			
Recommended sensor lengths (mm)							
Sensor							
pH (analog) ¹	200	225	325	425			
pH/redox (digital) ¹	225	225	325	425			
DO (analog) ¹	160	220	320	420			
DO (digital/optical) ¹	220	220	320	420			
Redox (analog) ¹	200	325	325	425			
CO ₂ (digital) ¹	220	320	320	320			

Single-use vessels						
Vessel	BioBLU 1c/f	BioBLU 3c/f	BioBLU 5c	BioBLU 5p	BioBLU 14c	BioBLU 50c
Total volume	1.8 L	5 L	5 L	5 L	14 L	50 L
Working volume	0.25 – 1.25 L ²	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					
Impellers						
Magnetic drive	BioBLU c: pitched blade/BioBLU p: packed-bed/BioBLU f: Rushton-type					
Recommended sense	or lengths (mm)					
pH (EC) ³	220	225	225	120	425	625
DO ³	220	225	225	120	355	526
Redox ³	220	225	225	120	425	625
CO ₂ ³	220	220	220	120	320	N/A

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

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

³ Installation may require compression fitting for optimal fit and depth (1386010200).

Specifications subject to change.

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BioFlo 120 Specifications

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) Ethernet (SCADA, IP Network) 100 - 120/208 - 240 (± 10 %) V, 50/60 Hz, 10 A, Single Phase Vater Quick connect 100 - 120/208 - 240 (± 10 %) V, 50/60 Hz, 10 A, Single Phase Vater Quick connect fittings accept 1/4 in Autocalvable Single-use Gas supply (air, 0 _x , N _x , C0 _y) Push-connect fittings accept 1/4 in Autocalvable Single-use Operating conditions 10 - 30°C, up to 80 % RH, non-conderus Autocalvable Single-use Altitude limit 2000 m Autocalvable Single-use Agitation 31, 51, 10, 12 S - 1,200 rpm Autocalvable Single-use Magnetic drive (single-use vessels) BioBLU 15, S - 500 rpm Single-use Single-use BioBLU 16, 51 S op rpm BioBLU 15, S - 500 rpm Single-use Single-use BioBLU 15, S - 500 rpm BioBLU 15, S - 500 rpm Single-use Single-use BioBLU 15, S - 500 rpm	Control Station						
Touchscreen 7 in projected capacitive touchscreen Communication 2 x USB (software updates, serial communication) 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) AutoClavable Single-use Eshaust 0.5 psig (0.035 barg) AutoClavable Single-use Operating conditions 10 - 30°C, up to 80 % RH, non-condensing AutoClavable Single-use Agitation 2000 m 3 L, 5 L, 10 L: 25 - 1,200 rpm Single-use Single-use Magnetic drive (autoclavable vessels) 1 L, 3 L, or 5 L: 5 - 500 rpm Single-use vessels) Single-use vessels) BioBLU 16: 5 - 1500 rpm BioBLU 16: 5 - 100 rpm BioBLU 16: 5 - 500 rpm Single-use vessels) Magnetic drive (single-use vessels) BioBLU 16: 5 - 100 rpm BioBLU 30: 5 - 510 rpm Single-use vessels) BioBLU 16: Si S - 1,200 rpm BioBLU 16: Si S - 1,200 rpm Single-use vessels) Single-use vessels) BioBLU 16: Si S - 1,200 rpm BioBLU 16: Si S - 1,200 rpm Single-	Dimensions (W x D x H)	24.7 x 55.9 x 62.9 cm (9.7 x 22 x 24.8 in)					
Communication 2 x USB (software updates, serial communication) 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 pig (0.69 barg) 10 pig (0.69 barg) Gas supply (air, 0 _y , N _y , CO _y) Push-connect fittings accept 1/4 in tubing or hose barb fitting 10 pig (0.69 barg) 6 psig (0.44 barg) Operating conditions 10 – 30°C, up to 80 % RH, non-condensing 10 psig (0.69 barg) 6 psig (0.44 barg) Attitude limit 2000 m 3 L, 5 L, 10 L: 25 – 1,200 rpm 10 psig (0.69 barg) 10 psig (0.69 barg) Magnetic drive (autoclavable vessels) 1 L, 3 L, or 5 L: 5 – 500 rpm 10 psig (0.69 barg) 10 psig (0.69 barg) Magnetic drive (single-use vessels) BioBLU 1f 6 31: 5 – 1,200 rpm 10 psig (0.69 barg) 10 psig (0.69 barg) Magnetic drive (single-use vessels) BioBLU 1: 5 – 500 rpm 10 psig (0.69 barg) 10 psig (0.69 barg) Magnetic drive (single-use vessels) BioBLU 5 (5 ps 1 Adc: 5 – 200 rpm 10 psig (0.69 barg) 10 psig (0.69 barg) BioBLU 5 (ps 2 barg) Ext 2 barge 10 L: 8 – 150 rpm 10 L: 8 – 150 rpm 10 psig (0.69 barg)<	Net weight	14.8 kg (32.7 lb)					
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) Single-use Gas supply (air, O _y , N _y , CO _y) Push-connect fittings accept 1/4 in Ubing or hose barb fitting Autoclavable Single-use Exhaust 0.5 psig (0.035 barg) 0 psig (0.69 barg) 6 psig (0.44 barg) Operating conditions 10 - 30°C, up to 80 % RH, non-condensing 4utoclavable 5 psig (0.44 barg) Altitude linititi 2000 m 000 m 5 psig (0.65 barg) Altitude linititi 1 L: 25 - 1,200 rpm 5 psig (0.15 b r 500 rpm Single-use vesselsi 1 L; 3 L, or 5 L; 5 - 500 rpm 5 psig (0.5 psig fits 5 - 1,200 rpm Magnetic drive fautoclavable vesselsi 1 L; 5 - 1,200 rpm BioBLU 16 us, 5 c, 5 p 6 14c; 5 - 200 rpm BioBLU 16 us, 5 c, 5 p 6 14c; 5 - 200 rpm BioBLU 16 us, 5	Touchscreen	7 in projected capacitive touchscreen					
UtilityConnectionRequirementElectricalIEc-C14 (with regional plug types)100 - 120/2028 - 240 (± 10 %) V, 50/60 Hz, 10 A, Single PhaseWaterQuick-connect10 psig (0.289 - 240 (± 10 %) V, 50/60 Hz, 10 A, Single PhaseGas supply (air, O ₂ , N ₂ , CO ₂)Push-connect fittings accept 1/4 in tubing or hose barb fittingAutoclavableSingle-useExhaust0.5 psig (0.035 barg)0.5 psig (0.69 barg)6 psig (0.44 barg)Operating conditions10 - 30°C, up to 80 % RH, non-condensing0.4 toclavableAltitude limit2000 mAgitation3 L, 5 L, 10 L: 25 - 1,200 rpmDirect drive1 L: 25 - 1,500 rpmMagnetic drive (autoclavable vessels)BioBLU 11 6 3f: 5 - 1,200 rpmBioBLU 11 6 3f: 5 or pmBioBLU 11 6 3f: 5 - 1,200 rpmBioBLU 11 6: 5 - 1500 rpmBioBLU 11 6: 5 - 500 rpmBioBLU 11 6: 5 - 150 rpmBioBLU 11 6: 5 - 500 rpmBioBLU 10 6: 5 - 150 rpmBioBLU 11 6: 5 - 500 rpmBioBLU 10 6: 5 - 150 rpmBioBLU 11 6: 5 - 500 rpmBioBLU 10 6: 5 - 150 rpmBioBLU 11 6: 5 - 500 rpmBioBLU 10 0: 5 - 50 content to 40°C <td>Communication</td> <td colspan="5">2 x USB (software updates, serial communication)</td>	Communication	2 x USB (software updates, serial communication)					
ElectricalIEC-C14 (with regional plug types)100 - 120/208 - 240 (\pm 10 %) V, 50/60 Hz, 10 A, Single PhaseWaterQuick-connect10 psig (0.69 barg)Gas supply (air, O_2 , N_2 , CO_2)Push-connect fittings accept 1/4 in tubin or hose barb fittingAutoclavableSingle-useSingle-useAutoclavableSingle-useAutoclavableSingle-useAutitude limit2000 mAgitation1 L: 25 - 1,500 rpmMagnetic drive (single-use vessels)1 L: 25 - 1,200 rpmMagnetic drive (single-use vessels)3 L, 5 L, 10 L: 25 - 1,200 rpmBioBLU 1 ft 5 : 5 - 500 rpm1 L: 3 L, or 5 L: 5 - 500 rpmBioBLU 1 ft 5 : 5 - 500 rpm1 L: 25 - 500 rpmBioBLU 1 ft 5 : 5 - 500 rpmBioBLU 1 ft 5 : 5 - 500 rpmBioBLU 3 c, 5 L, 5 P & 14c: 5 - 200 rpmBioBLU 3 c, 5 L, 5 % C above coolant to 45°C above ambient 0°°C - 70°C absolute)'BioBLU 3 c, 5 L: 8°C above coolant to 45°C above ambient 0°°C - 65°C absolute)'BioBLU 1 vessels: 5°C above coolant to 45°C'Sensor typeP100Gas supplySparge1 TMFC (0.04 - 20 SLPM) or 1 rotameter (multiple options available); ring or microspargerSparge1 TMFC (0.04 - 20 SLPM) or 1 rotameterPHAnalog or digital Mettler Toledo ISMOp0 - 200 % (air saturation)Optical DODigital Mettler Toledo ISMOptical DODigital Mettler Toledo ISMOptical DODigital Mettler Toledo ISMOptical DODigital Mettler Toledo ISMOptical DODigital Mettler Toledo ISMOpt		Ethernet (SCADA, IP Network)					
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Gas supply (air, O ₂ , N ₂ , CO ₂) Push-connect fittings accept 1/4 in tubing or hose barb fitting Autoclavable Single-use Exhaust 0.5 psig (0.035 barg) 0 psig (0.69 barg) 6 psig (0.44 barg) Operating conditions 10 - 30°C, up to 80 % RH, non-condensing 6 psig (0.44 barg) Altitude limit 2000 m 7 Agitation 7 7 Direct drive 1 L: 25 - 1,500 rpm 7 Magnetic drive (autoclavable vessels) 1 L, 3 L, or 5 L: 5 - 500 rpm 7 Magnetic drive (single-use vessels) BioBLU 16 5 3: 5 - 1,200 rpm 8 BioBLU 16 5 3: 5 - 1,200 rpm 8 8 8 BioBLU 16 5 3: 5 - 1,200 rpm 8 8 8 Magnetic drive (single-use vessels) 8 10 L: 5 - 500 rpm 8 BioBLU 16 5 3: 5 - 1,200 rpm 8 8 10 L: 5 - 500 rpm BioBLU 16 5 3: 5 - 1,500 rpm 8 10 L: 3°C above coolant to 45°C above ambient (0°C - 70°C absolute)' 10 L: 8°C above coolant to 45°C above ambient (0°C - 70°C absolute)' 10 L: 8°C above coolant to 45°C bave ambient (0°C - 65°C absolute)' BioBLU 10 vessels: 5°C above ambient to 40°C 8 8 8 BioBLU 10 vesse	Electrical	IEC-C14 (with regional plug types)	100 – 120/208 – 240 (± 10 %) V, 50/60 Hz, 10 A, Single Phase				
tubing or hose barb fitting10 psig (0.69 barg)6 psig (0.44 barg)Exhaust0.5 psig (0.035 barg)Operating conditions10 – 30°C, up to 80 % RH, non-condensingAltitude limit2000 mAgitationDirect drive1 L: 25 – 1,500 rpmMagnetic drive (autoclavable vessels)1 L, 3 L, or 5 L: 5 – 500 rpmMagnetic drive (autoclavable vessels)10 L: 5 – 1,200 rpmBioBLU 16 3f: 5 – 1,200 rpm10 L: 5 – 150 rpmBioBLU 16 3f: 5 – 1,200 rpmBioBLU 3c, 5c, 5p 6 14c: 5 – 200 rpmBioBLU 16 3f: 5 – 1,200 rpmBioBLU 3c, 5c, 5p 6 14c: 5 – 200 rpmBioBLU 3c, 5c, 5p 6 14c: 5 – 200 rpmBioBLU 3c, 5c, 5p 6 14c: 5 – 200 rpmBioBLU 3c, 5c, 5p 6 14c: 5 – 200 rpmBioBLU 3c, 5c, 5p 6 14c: 5 – 200 rpmBioBLU 10: 8°C above coolant to 45°C above ambient (0°C – 70°C absolute)'Autoclavable1, 2, 5 L: 8°C above coolant to 45°C above ambient (0°C – 65°C absolute)'BioBLU 5 vesselsBioBLU c vessels: 5°C above ambient to 40°C'BioBLU 10 vessels: 5°C above coolant to 45°C'Sensor typePt100Gas supplySparge1 TMFC (0.04 – 20 SLPM) or 1 rotameter (multiple options available); ring or microspargerCommunicationControl rangeDOAnalog or digital Mettler Toledo ISM0 – 200 % (air saturation)Optical DODigital Mettler Toledo ISM0 – 200 % (air saturation)Optical DODigital Mettler Toledo ISM0 – 200 % (air saturation)Optical DO	Water	Quick-connect	10 psig (0.69 barg)				
Exhaust 0.5 psig (0.035 barg) Operating conditions 10 - 30°C, up to 80 % RH, non-condensing Altitude limit 2000 m Agitation 11, 25 - 1,500 rpm Direct drive 1 L; 25 - 1,200 rpm Magnetic drive (autoclavable vessels) 1 L, 3 L, or 5 L; 5 - 500 rpm Magnetic drive (single-use vessels) BioBLU 1f 6 3f; 5 - 1,200 rpm BioBLU 1; 5 - 500 rpm 10 L; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 1; 5 - 500 rpm BioBLU 0; 5, c, 5, 6 14c; 5 - 200 rpm BioBLU 1; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 150 rpm BioBLU 5; 5, c, 5, 6 14c; 5 - 200 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 1; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 5 00 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm BioBLU 5; 5 - 500 rpm	Gas supply (air, O_2 , N_2 , CO_2)	Push-connect fittings accept 1/4 in	Autoclavable Single-use				
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Altitude limit 2000 m Agitation	Exhaust	0.5 psig (0.035 barg)					
Agitation Direct drive 1 L: 25 – 1,500 rpm Magnetic drive (autoclavable vessels) 1 L, 3 L, or 5 L: 5 – 500 rpm Magnetic drive (single-use vessels) 10 L: 5 – 150 rpm BioBLU 1c: 5 – 500 rpm BioBLU 1c: 5 – 500 rpm BioBLU 1c: 5 – 500 rpm BioBLU 1c: 5 – 500 rpm BioBLU 3c, 5c, 5p & 14c: 5 – 200 rpm BioBLU 5c: 5 – 150 rpm BioBLU 5c: 5 – 100 rpm BioBLU 5c: 5 – 100 rpm BioBLU 5c: 5 – 150 rpm BioBLU 5c: 5 – 150 rpm Temperature 10 L: 8°C above coolant to 45°C above ambient (0°C – 70°C absolute)' 10 L: 8°C above coolant to 40°C above ambient (0°C – 65°C absolute)' BioBLU 5 vessels: 5°C above coolant to 45°C' BioBLU 1 vessels: 5°C above coolant to 45°C' 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 0 – 200 % (air saturation) Optical DO Digital Mettler Toledo ISM 0 – 200 % (air saturation) Origital Mettler Toledo ISM 0 – 200 % (air saturation) (-)200 mV (-)200 mV CQ_0 Digital Mett	Operating conditions	10 – 30°C, up to 80 % RH, non-condensing					
Direct drive 1 L: 25 - 1,500 rpm 3 L, 5 L, 10 L: 25 - 1,200 rpm Magnetic drive (autoclavable vessels) 1 L, 3 L, or 5 L: 5 - 500 rpm Magnetic drive (single-use vessels) BioBLU 1f 6 3f: 5 - 1,200 rpm BioBLU 1 f 5 3f: 5 - 1,200 rpm BioBLU 1 f 5 3f: 5 - 1,200 rpm BioBLU 1 f 5 3f: 5 - 1,200 rpm BioBLU 1 f 5 3f: 5 - 1,200 rpm BioBLU 50c: 5 - 500 rpm BioBLU 50c: 5 - 150 rpm BioBLU 50c: 5 - 150 rpm BioBLU 50c: 5 - 150 rpm Temperature Autoclavable Autoclavable 1, 2, 5 L: 8°C above coolant to 45°C above ambient (0°C - 70°C absolute)' 10 L: 8°C above coolant to 40°C above ambient (0°C - 65°C absolute)' BioBLU 50c: 5 - 150 rpm BioBLU 50c: 5 - 50 above coolant to 4	Altitude limit	2000 m					
3 L, 5 L, 10 L: 25 - 1,200 rpm Magnetic drive (autoclavable vessels) 1L, 3 L, or 5 L: 5 - 500 rpm Magnetic drive (single-use vessels) BioBLU 1f 6 3f: 5 - 1,200 rpm BioBLU 1f 5 3f: 5 - 1,200 rpm BioBLU 1c: 5 - 500 rpm BioBLU 1c: 5 - 500 rpm BioBLU 1c: 5 - 500 rpm BioBLU 3c, 5c, 5p 6 14c: 5 - 200 rpm BioBLU 50c: 5 - 150 rpm Temperature Intervent of the second s	Agitation						
Magnetic drive (autoclavable vessels)1 L, 3 L, or 5 L: 5 – 500 rpm 10 L: 5 – 150 rpmMagnetic drive (single-use vessels)BioBLU 1f & 3f: 5 – 1,200 rpm BioBLU 1c: 5 – 500 rpm BioBLU 3c; 5c, 5p & 14c: 5 – 200 rpm BioBLU 50c: 5 – 150 rpmTemperatureAutoclavable1, 2, 5 L: 8°C above coolant to 45°C above ambient (0°C – 70°C absolute)' 10 L: 8°C above coolant to 40°C above ambient (0°C – 65°C absolute)'BioBLU Single-Use VesselsBioBLU t vessels: 5°C above coolant to 40°C above ambient (0°C – 65°C absolute)' BioBLU f vessels: 5°C above coolant to 40°C above ambient (0°C – 65°C absolute)'BioBLU Single-Use VesselsBioBLU t vessels: 5°C above coolant to 40°C above ambient (0°C – 65°C absolute)'BioBLU Single-Use VesselsBioBLU f vessels: 5°C above coolant to 45°C'Sensor typePt100Gas supplySparge1 TMFC (0.04 – 20 SLPM) or 1 rotameter (multiple options available); ring or microspargerDoAnalog or digital Mettler Toledo ISM0 – 200 % (air saturation)Optical DODigital Mettler Toledo ISM0 – 200 % (air saturation)Optical DODigital Mettler Toledo ISMCologDigital Mettler Toledo ISMCOgDigital Mettler Toledo ISM0 – 200 % (air saturation)Optical DODigital Mettler Toledo ISMCOgDigital Mettler Toledo ISMOptical DODigital Mettler Toledo ISMOptical DODigital Mettler Toledo ISMCOgPump headFixed speed	Direct drive	1 L: 25 – 1,500 rpm					
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Pumps Pump head Fixed speed			(-)2000 mV – (+)2000 mV				
	CO ₂	Digital Mettler Toledo ISM	0 - 100 %				
	Pumps	Pump head	Fixed speed				
Pumps 1, 2, & 3 Watson-Marlow 114DV 30 rpm (0 - 100 % duty cycle)	Pumps 1, 2, & 3	Watson-Marlow 114DV	30 rpm (0 – 100 % duty cycle)				

* Requires 115/230 V line voltage. Specifications cannot be guaranteed with operation at alternative line voltages.

Specifications subject to change.

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