Biopex A Bioreactor | Fermenter

Technical Data Sheet

Biopex A Bioreactor | Fermenter is a laboratory equipment for microbial fermentations and cell culture applications.

Unopex offers different configurations:

- **Biopex A**
  Single configuration with one culture vessel and one control tower.

- **Biopex A twin**
  Twin configuration with two culture vessels and one control tower.

- **Biopex A poly**
  Poly configuration with up to 6 culture vessels, one supply tower per vessel and one control tower.

Standard Instrument

Code	Instrument
A50122	Biopex A
A52145	Biopex A twin
A55450	Biopex A poly

Instruments are delivered ready to use.

Configuration

Component	Biopex A	Biopex A twin	Biopex A poly
Operation with one culture vessel	√		
Independent operation of two culture vessels		√	
Independent operation of up to six culture vessels			√
Culture vessel options single-wall or double-wall 1 L | 2 L | 5 L | 10 L	√	√	√
Control tower with touch screen operating panel	√	√	√
User-friendly software for monitoring and operating the entire process	√	√	√
Supply tower			√
pH sensor	√	√	√
pO_2 sensor	√	√	√
Level/foam sensor	√	√	√
Peristaltic pump	√	√	√
Stirrer with servo motor	√	√	√
6-blade Rushton impeller	√	√	√
3-blade segment impeller	√	√	√
Exhaust cooler	√	√	√
Inlet/exhaust gas filters	√	√	√
Triple/quadruple port	√	√	√
Heating blanket	√	√	√
Cooling finger	√	√	√
Mass flow controllers	√	√	√
Ring sparger	√	√	√
Micro sparger	√	√	√
Removable baffle	√	√	√
Reagent bottles	√	√	√
Vessel stand	√	√	√
Adjustable dip tube	√	√	√
Resterilizable sampler	√	√	√
Operation & Maintenance Manual	√	√	√

Scope of supply might change according to specific offers, microbial or cell culture applications.

Principle of Operation

Fully-automated touch screen operating panel with smart process control software ensures Biopex A bioreactor | fermenter to be operated in the required process **conditions**.

- Stirrer operates with the energy it receives from the motor.
- Gassing is carried out by sparger into the culture medium;
  - individual gas flow paths
  - mix of gas types
- pH is controlled by acid and base pumps.
- pO_2 is controlled by multiple cascade system (air, O_2, N_2, stirrer speed, feed).
- Level/foam is controlled by peristaltic pump AFoam/Level.
- Feed is controlled by Feed/Harvest pump.
- Temperature is controlled by heating blanket & cooling finger (for single-wall vessel) or thermal circulator (for double-wall vessel)

Technical Data

Working volume	1 L 2 L 5 L 10 L	0,3 .... 1 L 0,6 .... 2 L 0,8 .... 5 L 1,4 .... 10 L
Pumps	Acid, Base, AFoam/Level, Feed/Harvest	
Operating panel	Touchscreen	
Range of speed	1 L 2 L 5 L 10 L	0 .... 2000 rpm 0 .... 2000 rpm 0 .... 1500 rpm 0 .... 1500 rpm
Impeller type	6-blade Rushton impeller for microbial version 3-blade segment impeller for cell culture version	
Gas control	Mass flow controllers with valves for Air, O2 for microbial version Air, O2, N2, CO2, head space gassing for cell culture version	
Connections	Quick connect couplings	
Sensors	pH | temperature - pO_2 | level-foam	
Temperature control range	20 .... 60 °C for double wall culture vessels (20 .... 80 °C is available as an option)	
Computer connection Data transfer	Ethernet / usb	
Connection voltage	220 V - 50 Hz	
Material of construction for product contact parts	Heat resistant borosilicate glass, Stainless steel AISI 316L, Silicone, PTFE/EPDM	
Culture vessel size in autoclave (W x D x H)	1 L 2 L 5 L 10 L	170 x 190 x 265 mm 270 x 210 x 305 mm 295 x 245 x 405 mm 325 x 310 x 560 mm

Options & Accessories

Component
Integrated thermal circulator for temperature control
Additional mass flow controllers/rotameters
External pumps
Desktop computer & printer
Automatic weight control
Gravimetric flow control
Gravimetric level control
Tangential flow filtration (TFF)
Turbidity sensor
Conductivity sensor
ORP measurement
IQ/OQ documentation