Ambr® 250 High Throughput

Fully Automated for Accelerated Process Development

Simplifying Progress

SARTORIUS

Ambr® 250 High Throughput

A Fully Automated Bioreactor System for Parallel Fermentation or Cell Culture

Ambr® 250 High Throughput is a enhanced parallel microbial or cell culture system using 100-250 mL single-use bioreactors with a fully automated liquid handling platform. The system provides a high precision environment that supports the demands of microbial fermentation and mammalian cultures. Ambr® 250 High Throughput provides an efficient and rapid scale-down system to explore a wide range of conditions and strains with scalability to both bench top and larger stirred tank bioreactors.

Productivity
Ambr® 250 High Throughput dramatically improves productivity and enables full DoE experiments to be performed at a fraction of the cost and with higher throughput than can be done in traditional bench top reactors.

Wide Range of Cell | Strain Conditions and Performance
Ambr® 250 High Throughput provides a highly parallel system to rapidly develop processes for clones or strains in bioreactors that have full individual control of culture conditions.

Scalability
Because the bioreactor vessels are geometrically similar to larger bioreactors, all processes on the system correlate empirically to those of larger bioreactors making for optimum scalability.

Convenience
With a fully automated liquid handler together with single-use bioreactors that are fully integrated to sensors, users no longer need to spend long hours in the lab, manipulating, cleaning or setting up.

For more information, please visit
www.sartorius.com/en/products/fermentation-bioreactors/ambr-multi-parallel-bioreactors/ambr-250-high-throughput

System Features

Ambr® 250 High Throughput System Combines 12 or 24 “Easy Connect“ Single-Use Bioreactors, Fully Automated Platform, Bioreactor Controller and Flexible System Control Software

Ambr® 250 High Throughput platform
Integrates bioreactor stations, sensor readers, pumps and a liquid handler resulting in an efficient, high throughput scale-down model for process development and optimization.

01
Automated liquid handler
Fully automated liquid handler, for all liquid samples and additions, significantly reducing manual operator interactions.

02
Bioreactor station array
12 or 24 bioreactor stations in parallel with full individual process control, offers convenient set-up and simplifies running of full DOE experiments.

03
Integrated biological safety cabinet
A class II biological safety cabinet designed to maintain an aseptic environment even during robot manipulation of bioreactors, significantly reducing any risk of vessel contamination

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Single-Use Bioreactor Vessels

Each bioreactor is equipped with impellers for stirring, a pH and DO sensor and ports to connect to the system's liquid and gas lines. The single-use technology means there is no need to clean bioreactors and sensors between runs.

Mammalian or microbial vessels

- 100-250 mL working volume with baffles
- Dual 20 mm pitched-blade or Rushton impeller
- Spot based DO sensor
- Spot based pCO_2 sensor (mammalian vessel)
- Disposable pH electrode
- Integrated gas and liquid inlet filters
- Robotic compatible cap for sampling
- Sparge and overlay gassing options
- Integrated condenser for output to exhaust gas analysis (OUR | CER)

01
Septum cap
Allows for rapid liquid additions with a syringe.

02
Gas tube
Gases can either be delivered into the headspace or sparged into the media. These delivery systems are independent and can function in parallel.

03
Integrated pH, DO and pCO_2 sensors
Vessel design incorporates disposable sensors to simplify the process of system preparation.

04
Double impeller–Rushton or pitch–blade
For microbial or mammalian vessels respectively.

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Functions

Ambr® 250 High Throughput Automatically Controls, Feeds and Samples 12 or 24 Bioreactor | Fermenter Vessels in Parallel

Bioreactor controller

- Three gasses per bioreactor with mass flow sensor:
- Mammalian
  - O_2
  - CO_2
  - N_2 | air
- Microbial
  - O_2
  - Air
  - N_2
- Four positive displacement liquid pumps per bioreactor for high precision at low flow rates
- Individual bioreactor temperature control with heating or cooling
- Individual impeller speed control per bioreactor
- Optional exhaust gas analysis for OUR | CER
- Integrated CIP | SIP for pumps and liquid lines.

Control software

- Fully flexible set up and control interface with simple, dialogue based interaction for quick and easy process creation
- Fine tuning options including programmable PID control loops and other advanced features
- Ambr® 250 High Throughput software is fully integrated with Umetrics MODDE Design of Experiment (DoE) application, enabling streamlined operation in execution of large DoE studies.

Applications

Ambr® 250 High Throughput is configurable for microbial fermentation or mammalian cell culture and able to model a wide range of requirements in a variety of applications across biopharm as well as industrial biotech.

- Process optimization
- Process characterization
- Process robustness experimentation in support of QbD studies
- Process scale-down model

Scalability

Single-Use from Cell Line and Process Development to Production Scale

- Geometrical similarity of vessel design
- Consistent mixing and gassing strategies
- High performance gas transfer and mixing
- Reliable single-use platforms

BioPAT® Process Insights
Included with the Ambr® 250 High Throughput system is a one year license of BioPAT® Process Insights software application.

BioPAT® Process Insights enables predictive scale conversion and low risk process transfer between supported Sartorius bioreactors: Ambr® 15 and 250, Univessel® SU and Glass and Biostat STR® 50-2000 L.

BioPAT® Process Insights is a standalone, on-premise software application. Each license permits up to 10 concurrent seats. A renewal license (not included) is required after one year to continue usage of the software. Please check the technical specification for minimum computer hardware and software requirements.

Ambr® 250
High Throughput

Biostat® B-DCU with
Univessel® Glass
1-10 L

Biostat® D-DCU
10-200 L

Also scalable to multi-use technologies

Ambr® 250
High Throughput

Biostat® B
Univessel® SU 2L

Biostat STR® 50

Biostat STR® 200

Biostat STR® 500

Biostat STR® 1000

Biostat STR® 2000

Similar geometry and sensors - scaling up from 0.25 L to 1000 L

Process development and characterization

Production

For more information, please visit
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