

BioReactors

HEL BioXplorer 400

The Mini-Bioreactor System For Parallel Bioprocessing & Optimisation



**Obtain a greater understanding of all process parameters at
working volumes from 50 ml to 400 ml**

BioXplorer 400

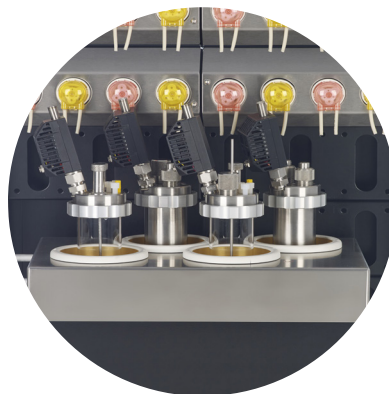
The BioXplorer 400 provides the ideal platform for bioprocess development and optimisation using 4 or 8 reactors in parallel with fermentation working volumes from 50ml to 400ml.

This volume range provides high quality data for reliable prediction of large scale performance over a wide range of conditions.

The system is highly flexible allows interchangeable use of smaller vessels with working volumes of just 20ml. The smaller vessels are highly suitable for data rich screening campaigns.

The modular design and extensive list of options means the BioXplorer 400 can be adapted to any application including microbial fermentation, C1 Gas fermentation and mammalian cell culture.

- | Most versatile bioprocessing platform for bioprocess development and optimisation
- | High information content and excellent scalability to large scale bioreactors
- | Reduce media costs and optimise the use of bench space
- | Optional elevated pressure design to 10 bar



Features

System

- | Parallel processing of 4 to 8 independent reactors with any size of bioreactor to 500ml
- | Individual temperature and agitation control
- | Proprietary mechanical drive or optional overhead drive stirring
- | Integrated individual liquid and gas feeds with options for gas mixing.
- | Control of all parameters including pH, DO, and options for OD, foam detection and level.
- | Optional Integrated exhaust gas analysis (OUR/CER)



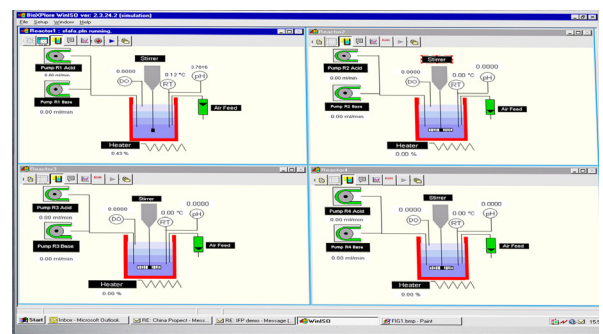
Bioreactors

- | Reusable glass or stainless steel reactors for standard or elevated pressure fermentations.
- | Standard or customised head plates to accommodate all probes and resources used at larger scale
- | Working volumes from 50 ml to 400 ml thereby significantly reducing reagent costs, but allowing continued sampling and downstream processing
- | 20ml to 150ml reactors can also be used interchangeably



Software

- | Multi reactor control software with unlimited step recipe planning. Plans can be changed online at any time without process interruption
- | Start and stop reactors individually or simultaneously
- | Manage which parameters are logged and recorded with customisable tabular and graphical displays
- | Export data functions and integration with in-house electronic lab notebooks and record keeping systems
- | DoE and QbD package integration



Specifications

	BioXplorer 100	BioXplorer 400
Parallel Bioreactors	8 or more	4 or more
Vessels	Glass Stainless Steel	Glass Stainless Steel
Working Volumes	20 to 150 ml	20 to 150 ml 50 to 400 ml
Stirring Speed	50 - 1000 RPM*	50 - 1500 RPM*
Impellers	Ruston Marine Pitched	Ruston Marine Pitched
Stirring Drive	Magnetic drive	Magnetic drive Overhead drive
Temp. Range	-20 to 200 °C**	-20 to 200 °C**
Temp. Control	Integrated, individual electrical heating in the block, software controlled	Integrated, individual electrical heating in the block, software controlled
Applications	Mammalian Microbial Gas Fermentation	Mammalian Microbial Gas Fermentation
pH Control	Acid/base liquid feed; Gas addition	Acid/base liquid feed; Gas addition
Liquid Feeds	Optional anti-foam; substrate feeds	Optional anti-foam; substrate feeds
OD Measurement	Optional	Optional
Gas Mixing	Air, N ₂ , O ₂ , CO, CH ₄ and CO ₂	Air, N ₂ , O ₂ , CO, CH ₄ and CO ₂
Max Pressure	Up to 10 Bar with stainless steel vessels	Up to 10 Bar with stainless steel vessels

*Speeds depend on stirrer drive, media properties and aeration rate.

**Sub-ambient cooling requires optional cooling module.

About HEL

HEL is an international company that specialises in chemical reactors, bioreactors and related data/logging tools for process R&D in the pharmaceutical, fine chemical, biotechnology and petrochemical industries. Established in 1987 and with the clients worldwide our key strengths are:

Knowledgeable staff – highly qualified and experienced chemical engineers and chemists

Quality – underpinned by ISO9001 certification for over 16 years

Service – choice of service contracts backed by an established culture of unmatched client support

Range of products – both of-the-shelf and custom designs, manual and fully automated controls, low and high pressure/temperature applications, single and parallel/multi-vessel products

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