

SOLIDABIOTECH.COM



INNOVATIVE  
BIOPROCESS  
EQUIPMENT



## SOLIDA BIOTECH

We are a dynamic company that specialises in engineering, developing, and manufacturing innovative bioprocess equipment.

The company was founded by a management team with over 20 years' experience in the fields of fermentation, cell culture, sterile processing, software and automation technologies, with the aim of meeting the challenges of producing and supplying leading industrial and institutional customers with a new generation of bioreactors and fermenters for research and production, as well as scientific instruments.

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**All our equipment  
meets the standards for  
worldwide distribution.**



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Solida Biotech is the  
ideal bioprocess partner  
to find the solution that  
suits your specific needs



## THE IDEAL BIOPROCESS PARTNER

Thanks to the abilities of our skilled team, we can offer flexible and custom made solutions to deal with multiple requirements in the world of green, red and white biotechnologies.

Solida offers a wide range of compact and modular bioreactors and fermenters from 50ml to 50 cubic metre pilot and industrial plants and integrated turn-key solutions.

# BIOPROCESS SOLUTIONS

We manufacture a wide range of bioreactors, fermenters, at-line analysers, CIP/SIP systems and process vessels for research, development, and production, suitable for fermentation, cell culture, stem cells, renewable technologies, algae, biomass, biofuel, hydrolysis and more.



## COMPACT BIOREACTORS

A compact laboratory bioreactor solution characterised by great performance and ease of use, the perfect way to get started.

Versatile bioconsole for autoclavable Bioreactors from 50mL to 30 litres working volume and Disposable from 250mL to 75 litres w/v.

## MODULAR BIOREACTORS

Latest generation Modular Bioreactors, developed with industrial automation to provide greater speed, power and expandability for laboratory, pilot, and industrial scale up processes. Versatile modular system for autoclavable Bioreactors from 50mL to 30 Litres w/v, Disposable from 250mL to 75 liters w/v and in Stainless Steel from 1L to 100 Litres w/v.

## PARALLEL BIOREACTORS

Parallel bioreactor systems for advanced bioprocess control and highly efficient process development.

Configurable solutions for microbial, phototrophic, mammalian and human cells, stem cell applications, and biofuel and biopolymer processes.

Parallel operation of up to 36 re-usable and single-use bioreactors from 50ml to 75 litre w/v.

## PHOTO BIOREACTORS

Laboratory, pilot and open field large scale photo-bioreactors. Customisable PBR systems are available in three different configurations: round type, air lift and flat panel.

## LABORATORY SIP BIOREACTORS

Modular Laboratory SIP stainless steel in situ sterilisable bioreactors, from 1 litre up to 50 litre w/v as well as custom fit solutions.

## PILOT & INDUSTRIAL SIP BIOREACTORS

SIP stainless steel in situ sterilisable and CIPable bioreactors, from 20 litres up to 50 cubic metres, custom fit and turn-key integrated solutions.

## CIP SYSTEMS AND PROCESS TANKS

Cleaning in place systems, sterilization units, sanitary vessels and process vessels.

## DISPOSABLE SYSTEMS

Single-use Bioprocess Bags, Bioreactors, Containers and Mixing Systems 50 mL to 2.000 L volume.

## AUTOMATION & SOFTWARE

Industrial automation platforms and software solutions for basic and advanced R&D applications and production.

## QUALITY & CERTIFICATIONS

We provide a full set of documentation complying to international standards for GLP and cGMP equipment, DQ, IQ, OQ and PQ protocols.

## SERVICE & SUPPORT

We provide worldwide service & support.





LABORATORY  
BIOREACTORS



**Single wall bioreactors with heating blanket and cold finger from 50ml to 30 litres w/v**



**Water jacketed bioreactors from 100ml to 30 litres w/v**



**Disposable jacketed and single wall bioreactors from 250ml to 75 Litres w/v**

## COMPACT BIOREACTOR FOR CELL CULTURE AND FERMENTATION

Compact Bioreactors is a line of latest generation bioreactors that can be used for basic educational applications, but also for advanced bioprocessing and development.

Applications include cell culture, stem cells, fermentation of bacteria, fungus, yeasts, photo-sensitive organisms such as plants and algae and more.

## VOLUMES

Autoclavable vessels: 300 mL, 500 mL, 1-2-3-5-7-10-15-20-30 Litres

SUB Disposable vessels: 250 mL, 500 mL, 1-3-5-7-10-15-20-30-50-75 Litres

## STRONG POINTS

- Its small dimensions, which take up small footprint in the lab
- A Control Unit with the latest generation, powerful and reliable PLC - 'Programmable Logic Controller'
- An HMI-PC digital control interface that supports the functions of a normal PC Touch control with a 15.6" wide screen
- Bioflex™ Software included in the standard management, supervision, and data acquisition package. No additional external data recording and data processing devices are required

## FLEXIBILITY

The Compact line allows you to alternate over 30 types of autoclavable vessels from 50mL up to 30L volumes in single and / or double wall versions and also Disposable Bioreactors from 250ml to 75 w/v.

## ALL-IN

The Compact Bioreactor supports standard 4 fixed and/or variable peristals pumps, 4 flowmeters and/or Massflow controllers, sensors for PH, PO<sub>2</sub>, Temperature, Level, Foam, Biomass, Gas Analyser, Glucose Analyser and more.

Powerful mechanical and/or magnetic mixing system with variable range from 0 to 2000 rpm for liquid, semi-solid and solid bioprocesses.

## SPACE RESTRICTION

Compact is one of the most compact bioreactors on the market, occupying a truly reduced space of 280x400mm WxD to meet the needs of any lab.

## RICH CONNECTIVITY

Another winning element of the Compact unit is its industrial connectivity with PCs and external networks, in addition to modern portable devices such as iPads and mobile phones via real-time Ethernet and USB data communication ports.

## ADVANTAGES

- Simplicity of installation, programming and maintenance
- Accuracy and reliability
- Certified for GLP and GMP classified environments
- Integrated temperature compensation
- Compact design
- HMI-PC with Integrated Data Management and Data Acquisition Software
- IP66 protection class
- SensorFlash® - full-feature functionality with removable memory (Micro SD Card)
- Saving of operative data on non-volatile memory

The only utility connections you need to operate the Compact Bioreactor are electricity and gas supply.

## BIOFLEX™ SOFTWARE

The entire bioreactor system is driven by BIOFLEX™ software, with an intelligent interface that is easily accessible, even for beginners. Thanks to the intuitive user interface, Bioflex is simple to operate, with reduced operator errors and reduced training needs. Bioflex software can be installed on a laptop PC, tablet or smartphone, and enables you to monitor and control your bioreactor at any time: in the laboratory, in the office or even at home.







**Single, Twin, Quad and Parallel configuration with interchangeable re-usable and single-use vessels from 50ml to 75 litres. Industrial connectivity portable modules**

## ADVANCED MODULAR BIOREACTOR

Our advanced modular bioreactor series represents the latest advancements in automation, software and mechanical engineering applied to the bioprocess industry. Industrial standard technologies, high-flexibility, modularity, easy upgrades and replacements, guaranteed long-term spare part availability and after-sales service distinguish our modular bioreactors from the competition.

### SMART DESIGN

The modularity and flexibility of our control unit offer you the unique advantage of being able to start with 1 bioreactor that can then be upgraded to 2-4-6-12-24 and up to 36 bioreactors working online with the same or different vessel size and typology.

### FEATURES

- BioController module with industry leading PLC hardware, ModBus and Ethernet communication protocols to simplify and accelerate single and parallel bioreactor operations
- Enhanced sensors capability integrating Online Biomass and Gas Analyzers, Automated samplers, HPLC, Mass Spec and others
- Gas mixing module supports 4-8 or more integrated massflow controllers per vessel, automated gas control strategy for cell culture or fermentation applications
- Peristaltic pump module with 4-8 or more fix and variable programmable pumps per vessel with bi-direction flow for high precision dosing
- Thermo module with built-in Chiller in a water saving closed loop. Accurate temperature control for single wall and water jacketed bioreactors



## VOLUMES

Autoclavable vessels: 300 mL, 500 mL, 1-2-3-5-7-10-15-20-30 Litres

SUB Disposable vessels: 250 mL, 500 mL, 1-3-5-7-10-15-20-30-50-75 Litres

## DECISIVE ADVANTAGES

The powerful modular controller allows you to interchange different types of autoclavable vessels from 50 mL to 30 litres, Disposable from 250 mL to 75 litres w/v, and SIP stainless steel from 1 litre to 100 litres w/v.

Each module (controller, gas mixing, pumps, thermo loop) can be upgraded, exchanged and replaced at any time without the need for an expert technician.

The communication between the various modules via fieldbus. This industrial measuring technique allows the measured values to be provided quickly and securely to the central controller that automates the machine.

The system also offers great benefits in terms of the reliability of the machine and fast installation.

A modern operating concept with Bioflex Advanced SCADA Software.

Each Advanced system features an innovative web server, which not only allows the system status and measurement data to be displayed, but the command and configuration at the same time as well.

The user can also rely on another big advantage: since the user interface is web-based, no additional software is required. All that is needed is a normal PC or laptop with an installed browser. In this way, mobile applications and remote control commands can also be implemented, reducing start-up and maintenance times and, as a result, costs.

The modular Controller's key aspects are:

- **Expandability of individual modules for managing from 1 to 36 bioreactors in parallel**
- **Interchangeability of modules, easy testing of modules**
- **Simplified interfaces through which the modules communicate with each other**
- **Minimum waiting times for replacement and/or maintenance.**



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**Solida's parallel system has a unique characteristic that enables you to interchange re-usable and disposable single-use vessels from 50 ml to 75 litres.**

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**Market-leading master controller technology for advanced data-logging and embedded monitoring applications.**

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**Unlimited series I/O modules for custom analogue input, analogue output, digital I/O, counter/timer, and CAN measurement and logging system.**

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**Modules are available for a variety of sensor measurements.**

## PARALLEL BIOREACTOR AUTOCLAVABLE & DISPOSABLE

Solida Biotech parallel bioreactors offer advanced controller functionalities designed to meet demanding requirements in both research and process development, as well as for media optimisation and screening studies.

A wide choice of interchangeable Autoclavable and Disposable vessels from 50mL to 75 Litres volume. Our newly engineered control system takes many of our well-proven design features into a new era, offering unprecedented benefits to process development laboratories around the world, including unrivalled capabilities for downscale and upscale modelling of various culture processes and the provision of new levels of power and flexibility.

The PARALLEL system features a POWERFUL master control tower with satellite Module for pumps, gas mixing, temperature control and chillers. Thanks to its high flexibility the parallel system can be configured with up to 36 bioreactors, each providing independent control of the applicable culture vessel.





# SUPERIOR PERFORMANCE

Built-in optical pH and dissolved oxygen sensors for improved accuracy and durability.

Integrated MFCS massflow controllers for cell culture and microbial fermentation strategies.

Variable speed pumps with bi-directional flow for precise addition of liquids.

Magnetic coupler guarantees absolutely contamination free cultures.

The modular design of our systems offers flexible solutions for bioprocess developments with mammalian, insect and human cells, as well as stem cells and microbial cultures at a laboratory scale.

Our parallel systems are characterised by parallel operations, accurate controls, and comprehensive information management.

They support the seamless integration of external analysers (PAT), control units and software.

Superior BIOFLEX™ control software supports sophisticated process control, comprehensive data and information management and Design of Experiments (DoE).

Integrated measurement of online sensors such as biomass, optical density, gas analyser, glucose analyser, alcohol analyser, pCO<sub>2</sub> analyser, HPLCs, auto sampler and others.

Immediate module replacement with zero downtime.

Online maintenance service and support with remote diagnostics.

