



# Cultivation Systems From Discovery to Production



Engineering for Life

# MiniBioreactors | Real Small... Real Bioreactors

- Generate more data in less time
- Easy set up and operation
- Less medium used during cultivation
- Little bench space required

The miniBio range of bioreactors (250 mL, 500 mL and 1000 mL total volume) is a true scale down of the laboratory scale bioreactor. The miniBio systems have the same flexibility as the laboratory scale bioreactors. This means that the miniBio systems can be customized to fit the demands of any process. The small volume reduces media costs and maximizes bench space, which is normally at a premium.

## Applications

- Screening studies
- Media optimization
- Process optimization
- Microbial and cell culture
- Batch, Fed-Batch, Perfusion and Continuous cultivation

## Features

- Small size bioreactors
- Generate scalable results

## Related products

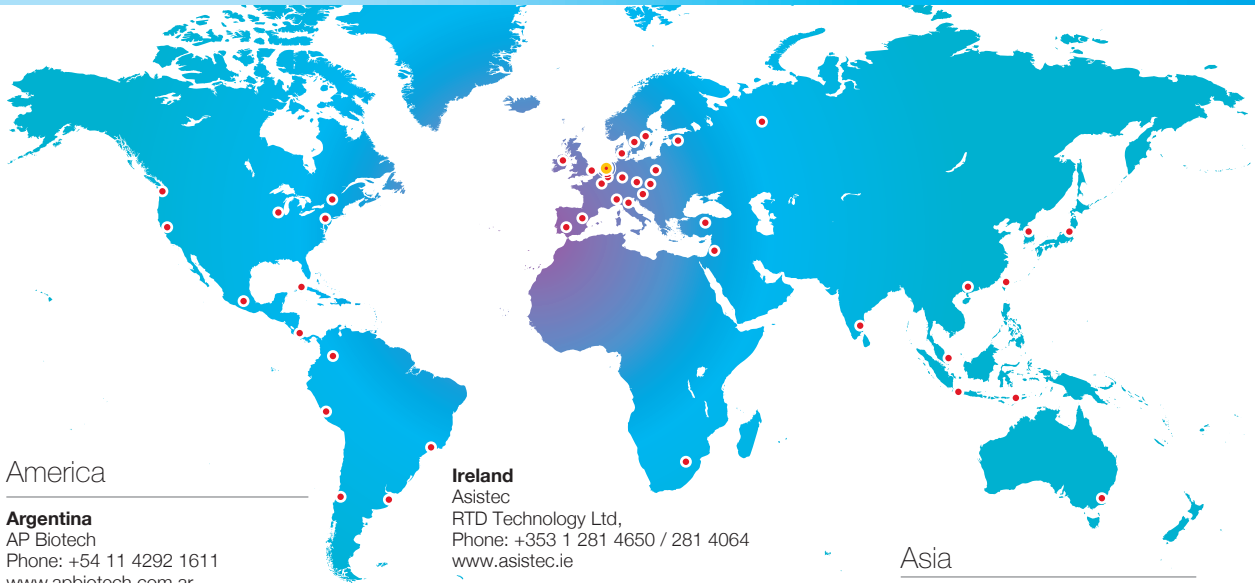
- Bottle holder
- LumiSens Optical DO<sub>2</sub> sensor
- pH sensor
- Lucillus software
- V-Control software



# Specifications

	<b>MiniBio 250</b>	<b>MiniBio 500</b>	<b>MiniBio 1000</b>
<b>Total volume (ml)</b>	290	550	1000
<b>Working volume (ml)</b>	200	400	800
<b>Minimum working volume (ml)</b>	50	100	200
<b>Aspect ratio total volume</b>	2.3	2.1	2.3
<b>Aspect ratio working volume</b>	1.6	1.5	1.9
<b>Dimensions (dxh)</b>	180 x 400 mm	195 x 400 mm	200 x 550 mm
<b>Dimensions for autoclaving (dxh)</b>	180 x 250 mm	195 x 250 mm	200 x 400 mm
<b>Drive system</b>	Direct drive, lipsealed	Direct drive, lipsealed	Direct drive, lipsealed
<b>Maximum stirrer speed (rpm)</b>	50 - 2000	50 - 1750	50 - 1500
<b>Maximum impeller tip speed (m/s)</b>	2.3	2.0	3.5
<b>Impellers</b>	Choice of Rushton and marine		
<b>Gas sparger</b>	Porous sparger, open pipe sparger or jet sparger		
<b>Gas overlay</b>	Yes		
<b>Exhaust gas</b>	Electrically cooled exhaust gas condenser (evaporation <4% per day at 37°C @ 2vvm)		
<b>Sampling</b>	Fixed sample pipe with optional sampling system		
<b>Draining</b>	Height adjustable drain pipe		
<b>Additions</b>	4 fixed inlet ports and optional micro liquid injectors		
<b>pH</b>	Measurement: 8 mm classic pH sensor Control: via acid pump (variable speed pump) or CO <sub>2</sub> gas in combination with alkali pump (variable speed pump)		
<b>DO<sub>2</sub></b>	Measurement: 8 mm classic polarographic DO <sub>2</sub> sensor, optional LumiSens Optical DO <sub>2</sub> sensor Control: via a combination of N <sub>2</sub> , Air, O <sub>2</sub> (optional MFC) and agitation or nutrient addition (variable speed pump)		
<b>Temperature</b>	Measurement: Pt-100 sensor in thermowell in topplate Control: electrical cooling and heating jacket via bioreactor wall		
<b>Foam</b>	Measurement: Height adjustable conductivity based foam sensor Control: anti-foam addition (variable speed pump)		
<b>Level</b>	Measurement: Height adjustable conductivity based level sensor Control: variable speed pump for liquid addition or removal		
<b>Optional inlets</b>	Septum, chemostat tube, liquid entry system		
<b>Optional sensors</b>	Biomass, Optical Density, O <sub>2</sub> and CO <sub>2</sub> off gas, weight balance		





## America

### Argentina

AP Biotech  
Phone: +54 11 4292 1611  
[www.apbiotech.com.ar](http://www.apbiotech.com.ar)

### Brasil

Lobov Cientifica  
Phone: +55 11 3829-8040  
[www.lobov.com.br](http://www.lobov.com.br)

### Mexico

Applikon Biotechnology Mexico  
Phone: +52 55 5868 7814  
[www.applikon-biotechnology.com](http://www.applikon-biotechnology.com)

### Peru

Applikon Biotechnology Peru  
Phone: +51 1657 1230  
[www.applikon-biotechnology.com](http://www.applikon-biotechnology.com)

## Europe

### Belgium

Applikon Biotechnology BV  
Phone: +31 10 208 3555  
[www.applikon-biotechnology.com](http://www.applikon-biotechnology.com)

### Czech Republic

Vekamaf spol. s.r.o.  
Phone: +421 907 753 338  
[www.vekamaf.cz](http://www.vekamaf.cz)

### Denmark

Holm & Halby A/S  
Phone: +45 432 694 00  
[www.holm-halby.dk](http://www.holm-halby.dk)

### Estonia

Biotecha Eesti OÜ  
Tel. 00372 659 7101

### France

System-c bioprocess  
Phone: +33 475 548 600  
[www.system-c-bioprocess.com](http://www.system-c-bioprocess.com)

### Germany & Austria

I&L Biosystems GmbH  
Phone: +49 222 391 920  
[www.il-biosystems.com](http://www.il-biosystems.com)

### Hungary

Holimex Mérnöki és Kereskedelmi Kft.  
Phone: +36 1 391 44 00  
[www.holimex.hu](http://www.holimex.hu)

### Ireland

Asistec  
RTD Technology Ltd,  
Phone: +353 1 281 4650 / 281 4064  
[www.asistec.ie](http://www.asistec.ie)

### Italy

Steroglass S.r.l.  
Phone: +39 075 609 091  
[www.steroglass.it](http://www.steroglass.it)

### Lithuania

BIOTECHA UAB  
Phone: +370 5 237 6007  
[www.biotecha.lt](http://www.biotecha.lt)

### Poland

Labo Baza  
Phone: +48 61 812 57 45  
[www.labobaza.pl](http://www.labobaza.pl)

### Russia

ABTEK Bioprocess Solutions  
Phone: +7 (495) 723 6497  
[www.abtek.ru](http://www.abtek.ru)

### Slovak Republic

Vekamaf spol. s.r.o.  
Phone: +421 907 753 338  
[www.vekamaf.cz](http://www.vekamaf.cz)

### Spain & Portugal

VERTEX Technics, S.L.  
Phone: +34 93 223 33 33  
[www.vertex.es](http://www.vertex.es)

### Sweden

AB Ninolab  
Phone: +46 8 590 860 70  
[www.ninolab.se](http://www.ninolab.se)

### Switzerland

ReseaChem GmbH  
Phone: +41 344 240 310  
[www.reseachem.ch](http://www.reseachem.ch)

### Turkey

Ant Teknik Cihazlar Ltd. Sti.  
Phone: +90 216 422 67 00  
[www.antteknik.com](http://www.antteknik.com)

## Australia & New Zealand

### Australia

John Morris Scientific  
Phone: +61 2 9496 4200  
[www.johnmorris.com.au](http://www.johnmorris.com.au)

## Asia

### China

Applitech Pharma  
Phone: +86 203 482 1111 (ext. 8216)  
[www.applitechpharma.com](http://www.applitechpharma.com)

### India

Spinco Biotech Pvt. Ltd.  
Phone: +91 44 2434 0174  
[www.spincootech.com](http://www.spincootech.com)

### Indonesia

Pt. Arico Sainsindo Nusantara  
Phone: +62 21 580 6342 / 3  
[www.ptarico.com](http://www.ptarico.com)

### Japan

Sanyo Trading Co., Ltd.  
Phone: +81 3 3518 1111  
[www.sanyo-trading.co.jp](http://www.sanyo-trading.co.jp)

### Korea

Seoulin Bioscience Co., Ltd.  
Phone: +82 1670 5911  
[www.seoulin.co.kr](http://www.seoulin.co.kr)

### Singapore

Zil Sci Pte. Ltd.  
Phone: +65 676 729 29  
[www.zilsci.com](http://www.zilsci.com)

### Taiwan

Tseng Hsiang Life Science Ltd.  
Phone: +86 2 2785 1156  
[www.thco.com.tw](http://www.thco.com.tw)

### Thailand

Meditop Co., Ltd  
Phone: +66 2933 1133  
[www.meditopthailand.com](http://www.meditopthailand.com)

## Middle East & Africa

### Israel

Medent LTD  
Phone: +972 8 623 7984  
[www.medent.co.il](http://www.medent.co.il)

### South Africa

Separations  
Phone: +27 11 919 1000  
[www.separations.co.za](http://www.separations.co.za)

### Headquarters The Netherlands

#### Applikon Biotechnology BV

Heertjeslaan 2  
2629 JG Delft  
The Netherlands  
T. +31(0)10-208 35 55  
F. +31(0)10-208 35 05  
E. [info@applikon-biotechnology.com](mailto:info@applikon-biotechnology.com)

### USA Main Westcoast Office

#### Applikon Biotechnology Inc.

1180 Chess Drive  
Foster City CA 94404  
Phone: +1 650 578 1396

### Latin America Office

Phone: +52 55 5868 7814

### United Kingdom Office

#### Applikon Biotechnology

Basepoint Business Centre  
Oakfield Close  
Tewkesbury Business Park,  
Tewkesbury, Gloucestershire, GL20 8SD  
Phone: +44 1684 851 281  
United Kingdom



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[www.applikon-biotechnology.com](http://www.applikon-biotechnology.com)