electrolab

Providing a measured response to your fermentation needs

Understanding your fermentation needs, we provide solutions to meet your application by innovative use of our wealth of engineering expertise and an unparalleled individual approach, supported by responsive service and back-up.

OUTLINE SPECIFICATION

Vessels	Bacteriological					Cell Culture		
Working volume (Litres)	1	2	5	10	18	2	5	10
Total volume (Litres)	1.8	2.7	6.4	12	22	2.9	6	14
6.3mm Ports	5	5	5	5	8	5	5	5
12mm Ports	7	7	9	9	9	7	9	9
Agitation								
Speed Range (rpm)	0-1200	0-1200	0-1200	0-1200	0-800	0-800	0-800	0-800
High Speed Option	0-1500	0-1500	0-1500	N/A	N/A	N/A	N/A	N/A
Low Speed Option	0-800	0-800	0-800	0-800	N/A	0-200	0-200	0-200
Temperature Control	Using PT100 sensor to measure vessel temperature & low voltage (24V) wrap-around heating system with a cold finger heat exchange for cooling.							
Range	From 5°C above cooling water temperature to 50°C							
pH Control	Using autoclavable pH electrode, controlled by addition of acid or base using 2 Watson Marlow peristaltic pumps					Using autoclavable pH electrode, controlled by CO_2 gas flow		
Range	0-14 pH with on-screen calibration and electrode monitoring							
DO Control	Using autoclavable polarographic DO electrode, controlled by either stirrer speed, air flow or combination of both					Using a gas flow controller with air, O_2, N_2 and CO_2		
Range	0-120% with on-screen calibration and electrode monitoring							
Foam Control	Using either conductivity probe or timer with a variable sensitivity.							
Feed Pump	Fully adjustable, using on and off timers. Maximum flow 6.4 mls/min							
Power	230 volts, 50 Hz OR 115 volts, 60 Hz - Typically 1 kW							
Software	SCADA type software able to control and data log up to 8 fermenters with either RS232 or RS485 for multiple installations.							
Dimensions (mm)	500 wide x 500 deep x 800-900 high							

To discuss your specific requirements, arrange a demonstration or obtain further information and pricing, contact us:

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FerMac 310/60

The FerMac 310/60 is a completely new versatile fermenter which combines the latest technology with our years of experience in the field. With the modern, multi-functional laboratory in mind, it has the unique blend of being very practical and easy to use, whilst offering a high level of control and sophistication. Its close-coupled design utilises minimum bench space, being only 20" wide.

The system is a fully-integrated package which includes start-up kit, filters, bottles etc. In addition it has been configured with five pre-wired expansion slots to allow extra parameters or modules to be added at a later date.

FerMac 360 Controller

The FerMac 360 has harnessed state-of-the-art technology to give you user-friendly direct digital control. With an intuitive user-interface, all key parameters are displayed on one screen and the set-up and calibration for each parameter is available with a single key stoke.

In addition to the extra signal conditioners provided for future expansion, the FerMac 360 has links to our purpose designed data-logging and control fermentation management software.

As standard, the unit is supplied with 4 Watson Marlow easy to load pumps, all with manual over-ride facility.

FerMac 310 Stirrer

Performance, reliability and practical convenience are the key factors behind the design of the FerMac 310 Stirrer.

The top drive motor, mounted on a durable stainless steel frame, provides reliable mixing at a wide range of speeds with sufficient power to give maximum performance with any media.

The pull-out drip tray, also in stainless steel, enables easy cleaning and vessel handling.

With safety and accessibility in mind, the FerMac 310 Services Panel ensures that water and electronics are kept strictly segregated.

FerMac vessels

To complete the system, a wide range of vessel types and sizes is available designed to suit your application. What they all have in common is the high quality stainless steel top plate giving good chemical resistance, the variety of ports all sealed on the sterile side with Viton 'O' rings to minimize threads within the vessel, and the heat resistant borosilicate glassware attached by a quick release clamp to allow easy cleaning and strip-down.

Bacteriological Vessels

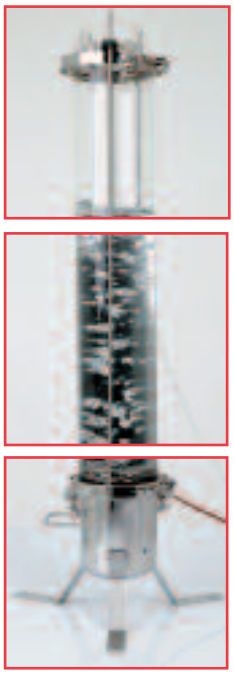
Maximum oxygen transfer is achieved by combining 2 Rushton Turbine propellers with flat-bottomed glassware and 4 full-size baffles. The aspect ratio is optimised for bacteriological use.

Cell Culture Vessels

Good mixing with low shear forces is achieved by using dish-based glassware with a variable pitched impeller/propeller. The lower aspect ratio of this vessel is optimised for cell culture use.

Air Lift Vessels

This alternative vessel combines some of the advantages of both cell culture and bacteriological vessels. The high aeration rate gives good oxygen transfer whilst the lack of impellers gives low shear force. The stainless steel dished base allows for shorter electrodes to be used.



Software

To complete the picture, the FerMac 310/60 can be supplied with our new version of the SCADA Fermentation Management & Control software.

The program has a versatile, logical structure combining the advantages of a virtual instrument with a powerful graphing package and, being designed around National Instruments Labview, it provides compatibility with NI hardware and third party programmers.

Data is easily transferable into MS database packages making report writing simple and straightforward.

Associated equipment

With our in-depth knowledge of fermentation processes, we have developed the following associated products:-

The FerMac 368 Gas Analyser measures oxygen and carbon dioxide in exit gas, two important extra parameters which give the best indication of growth within a fermenter vessel. The Gas Analyser connects to the FerMac 360 Controller so that measurement can be logged and controlled by our software.

The Fermac 366 Pump Module makes two extra pumps available from the Fermac 360 controller. They can be used as level or feed pumps and can be controlled via our software, allowing complex feeds to be programmed.

The Electrolab Low Flow Rate Pump is specifically designed for bioprocess applications, providing a smooth flow of media with excellent reproducibility over extended periods of time.