



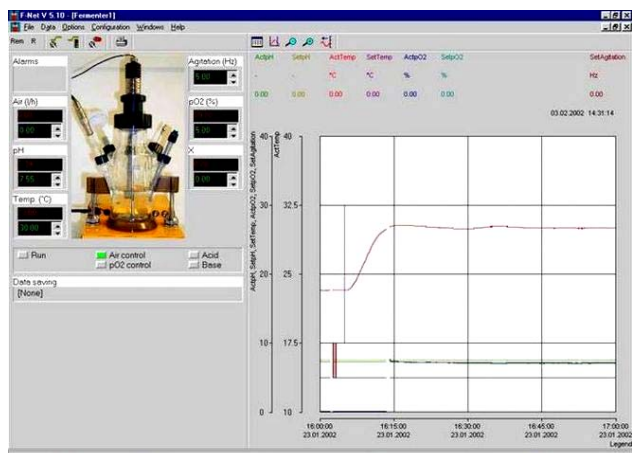
LAMBDA Laboratory Instruments

Where innovation keeps quality high and prices low

LAMBDA MINIFOR Fermenter / Bioreactor
Through innovation to quality fermentor at half-cost. LAMBDA MINIFOR introduces new concepts in laboratory fermentation and cell cultures.



- New vibromixing agitation through silicone membrane guarantees long-term and "easy-sterility"
- New whole glass vessels with threaded necks and fittings increase flexibility of use
- New infrared radiator for gentle, precise and economic culture heating (no expensive water bath required)
- Extremely compact, handy and fully accessible from all sides
- New "fish-tail" stirrer for gentle mixing of cell cultures
- Batch, fed-batch and continuous culture possible
- Gas flow control using precise mass flow measurement
- Very easy to set up and dismantle
- Sterilizable in common autoclaves
- Modern high-tech materials used
- Stand-alone or controllable by PC
- Fermenter control software FNet or SIAM (optional)



LAMBDA PRECIFLOW, MULTIFLOW, HIFLOW and MAXIFLOW peristaltic pumps
Practical, precise and reliable pumps - the most compact in their class.



- Flow rates from 0.01 to 10'000 ml/hour
- Large digital speed setting range from 1:1000
- New motor technology
- Extensive remote controls
- Greatly extended tubing life with decreased pulsation
- Flow rate programming (up to 99 steps) and automatic switch-on and -off without using any timer
- Very economic in use
- Most compact pump of this type on the market
- Access to reaction kinetics by using the Pump-Flow INTEGRATOR
- Low voltage plug-in power supply for maximum safety
- RS-485 interface (optional)
- Control software (optional)

LAMBDA MASSFLOW gas flow controller
New mass flow controller system specially designed for the use together with LAMBDA MINIFOR fermentor. The MASSFLOW allows a precise, automatic control of pH in cell cultures without the need of any other gas station.



- Allows the control of pH of cell cultures by controlled addition of gaseous CO₂, N₂ or any other gas with a suitable controller
- High-quality laminar mass flow sensor with minimal pressure drop
- Can be used independently - all functions accessible from the front panel
- Flow rates from 0 – 500 ml/min or 0 – 5 l/min
- Flow rate regulated by a proprietary proportional needle valve controlled by a microprocessor
- Linearity error less than ± 3 % reading (which is much better than precision expressed as percent of full scale used by some producers)
- Repeatability better than ± 0.5% reading
- Programmable flow rates
- Flow volume can be recorded
- RS-485 interface (optional)



LAMBDA OMNICOLL fraction collector

A new concept in fraction collection



- Collects fractions in any racks of your choice
- Collects unlimited number of fractions in single or multiple fractions
- No danger of spilling, the complete collector is placed above the tubes
- Unlimited number of programs
- Extremely easy programming of rack and tube position with a simple pen
- Fractionation according to time (0.1 – 9999 min) or volume (0.01 – 500 ml or 0.1 – 30 l)
- Drop counter (optional)
- Sampling with pause (0.1 – 9999 min) and line washing; the fraction collector can be used for sampling during cell cultures, fermentations, chemical reactions, etc.
- Can be placed in a cold bath or any other thermostabilized container
- Multicolumn attachment for simultaneous fraction collection (up to 18 or more)
- Solvent resistant metal construction
- Tubes easily accessible from all sides
- Low voltage power supply – battery operation possible
- RS-232 interface (optional)

LAMBDA VIT-FIT SYRINGE PUMP

Excellent price/performance ratio



- New syringe fixing system "VIT-FIT" allows almost any syringe to be used without an adapter (from micro-syringes to large volume syringes of 150 ml and more)
- Very easy handling of the syringes
- The syringe is tightly held in both directions – infusion and filling
- Very high flow rates and forces of 80 or 300 N
- Swiss quality motor and linear ball bearings
- Programmable (99 steps for infusion and filling)
- Two valve outputs
- Remote controls
- RS 485 interface (optional)

LAMBDA SAFETY DOSER for powder dosing

Unique pump for free-flowing solid substances



- Allows automatic or continuous addition of solids, powders and crystalline substances without spoon
- Dosing speed range from 0 to 999
- Reproducible flow rate (e.g. 50 mg/min to 50 g/min for NaCl)
- Programmable
- Easy assembly
- Necessary to comply with GLP requirements and safety standards
- Hermetic construction allows operation in controlled atmospheres (Ar, N₂,...)
- Safe handling of dangerous and toxic substances
- Remote controls
- RS 485 interface (optional)

LAMBDA PUMP-FLOW INTEGRATOR

Will allow visualizing how much liquid has been pumped in function of time in controlled processes

Typical examples of application:



- Control of pH during chemical reactions where the pH is controlled by addition of acid or base (hydrolysis of esters, amides, anhydrides etc.)
- Measurements of enzyme activities of numerous enzymes (esterases, acylases, lipases, proteases and others using a pH-stat)
- Control and quantification of metabolic activity of cells during fermentations and cell-cultures (by control of pH, rH, pO₂, pCO₂, conductivity or other required parameter)
- Recording of foam formation (automatic addition of antifoam agent)
- Recording of addition of reactives during exothermic reactions with addition of reactive controlled by a thermostat
- Recording of consumption of reactives during titration making of gradient for gels, chromatography etc.

Personal lab experience is essential for making good laboratory instruments.

We love to construct them for you with the same care, as we would do them for ourselves, therefore our instruments are practical, economical and use inventive ideas not found elsewhere.

Low cost and high quality are not always contradictions.