

EcoLab™ - Parallel reactor systems

What is EcoLab™?

EcoLab™ is a miniaturised, fully automatable laboratory process plant.

Its distinctive feature is the integrated solid-state temperature control system. An external thermostat for heating and cooling is no longer needed.

For stirring the 50 ml to 250 ml double jacket vessels without touching the bottom, EcoLab™ is equipped with a hanging magnetic stirrer.

With its new temperature control system, EcoLab™ is particularly suitable for crystallisation-screening experiments.

Due to the compact size and the small footprint several systems can be fitted on a laboratory bench or under a fume hood.

EcoLab™ is built up in a modular manner and is thus highly flexible. It can be supplied in a number of variants, from a single, manually operated basis unit up to individually configured, fully automated multi-reactor systems.

By using the universal LabVision® laboratory automation software suite, various adjustments and extensions are possible. For instance volumetric and gravimetric dosing-units or the integration of special sensors up to IR spectrometers.

Features

- » Small footprint
- » Integrated solid-state tempering
- » High precision temperature control system
- » Extensive LabVision® control software
- » Independent control of all parameters of the individual reactors
- » Complete control of all parameters such as dosing rates, temperatures, pressure, pH value and stirrer speed
- » Modular design, individually adaptable and expandable



Typical areas of application

- » Crystallisation
- » Synthesis

Automation

With the assistance of the well-established LabVision® software, an EcoLab™ set-up with multiple individually configurable units, is automated with the LabManager® laboratory automation system.

Despite their higher degree of automation, the parallel reactor systems neither restrict creativity nor do they require a specialist for their operation. During the whole time, the operator maintains full control over all system parameters.

All labour-intensive steps from the planning of an experiment up to the analysis and documentation of the data relating to the experiment are either supported or completely automated.

Sequence control programming can be carried out with unrivalled simplicity in EasyBatch™. It enables uncomplicated table-based and self-documenting programming and can be intuitively operated.

EasyBatch™ can also be used in conjunction with manual operation and easily ensures reproducibility.

EasyBatch™: table-based recipe control

Its own table column is provided for all variable parameters and values, such as times and amounts. The first column contains the command to be performed. In the simplest case, a program only consists of set and wait commands. Recipe creation is thus achieved without programming knowledge and in a minimum of time.

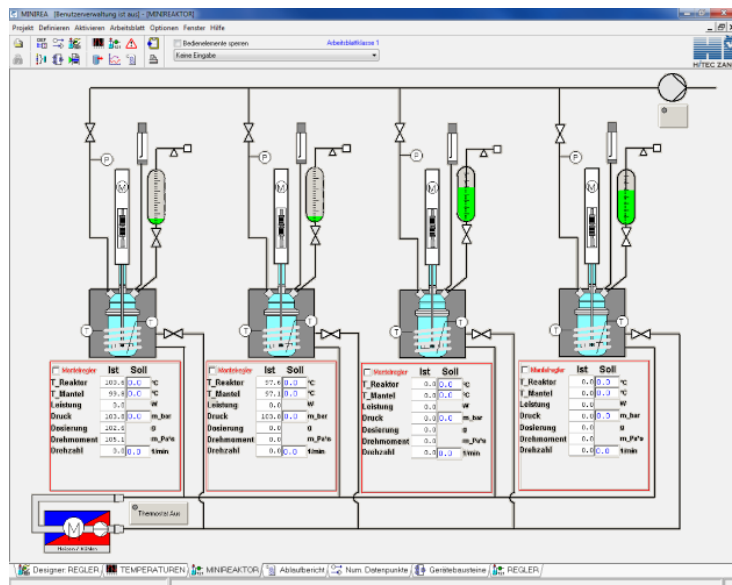
For complex recipes the IEC/EN and NAMUR standard conform recipe control HiBatch™ is available. It enables the fast creation of recipe flow diagrams by linking unit operations with the help of a graphical recipe editor.

A recipe can be allocated to several reactors at the same time and be individually parameterised. As a result, the effort required remains at a minimum, even for extensive parallel experiments.

The experiments are documented in a laboratory notebook. Manual processing of the data is no longer necessary. A major source of errors is thus completely eliminated. Laboratory notebooks can be administered using HiLIMS™.

Expansion options

- » Solid matter dosing, gas dosing
- » Automatic sampling and filling
- » Further options on request



LabVision® with 4 parallel reactor systems

The benefits

- » Exact reproducibility of the experiments
- » Elimination of bottlenecks through parallel operation
- » 24 hour/7 day operation
- » Optimal documentation and reporting
- » Shortened „time to market“
- » Improved quality
- » Cost reduction through increased throughput

Specifications

Dimensions (WxHxD)	200 x 230 x 510 mm, height 630 mm with gravimetric dosing (option)
Temperature range	2...70 °C jacket temperature
Reaction vessels	double jacket reactor 50...250 ml
Stirrer	hanging magnetic stirrer
Gravimetric dosing*	GraviDos® dosing module with suspended balance 1000 g, storage tank 500 ml
Dosing pump*	LabDos® P30 peristaltic pump 1 µl...30 ml/min
Temperature measurement	inside temperature with Pt100 sensor, PTFE-coated jacket temperature with Pt100 sensor
Additional sensors*	turbidity probe, pH probe, ...

* as an option

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