

Modular-Lab Standard

Versatile equipment for research purposes

Modular-Lab Standard

Modular-Lab Standard is a fully automated system for radiochemical synthesis.



Description

Modular-Lab Standard has been specifically designed to allow versatile radiochemical development and production. The system enables custom synthesis processes to be assembled from a set of unit operation modules. The small, sealed and stainless steel modules are stacked and connected by process tubing and by a single electrical cable. An intuitive graphical interface is used to design and control the synthesis process.

Advantages

Modular-Lab Standard's unique modular approach combines the speed and safety of a remote, fully automated system with the flexibility to configure syntheses for novel tracers. Cleaning and sanitation routines can be programmed to take place between runs or overnight. With this multifunctionality, Modular-Lab Standard supports research as well as routine production. Disposable components such as valves, tubing, cartridges and others are standard, off-the-shelf units and can be exchanged as needed for different applications. Modular-Lab Standard can be applied to a wide range of compounds and isotopes. The modules can be arranged to fit even very small hot cells.

Versatility

Available modules include a Peltier/Heater reaction system with solid-state temperature control from $-40\text{ }^{\circ}\text{C}$ to $+150\text{ }^{\circ}\text{C}/220\text{ }^{\circ}\text{C}$, a wide variety of valve modules, instruments for temperature, pressure and radiation detection, a compact semi-preparative HPLC module, analytical HPLC, TLC modules, and many others. The intuitive user interface is easy to program by drag and drop of graphical symbols and adheres to today's regulatory requirements. Parameters such as temperature, activity, UV detector readings, flow rates, or valve settings can be monitored easily in one window. Reports containing all relevant data and information are created automatically after each run.

Safety Functions

Reliable, automated synthesis, with remote monitoring provided as necessary through the graphical computer interface, eliminates the need for hands-on operation and can significantly reduce radiation exposure to lab personnel.

Application Examples

We offer a variety of chemical reactions including customized synthesis processes according to your needs, e.g. $[^{18}\text{F}]\text{FEC}$, $[^{18}\text{F}]\text{FDG}$, $[^{18}\text{F}]\text{Fluoroethyltyrosine}$, $[^{18}\text{F}]\text{Flumazenil}$, $[^{18}\text{F}]\text{MISO}$, $[^{11}\text{C}]\text{Choline}$, $[^{11}\text{C}]\text{Methyl Iodide}$, $[^{131}\text{I}]\text{MIBG}$, $^{68}\text{Ga}\text{-DOTA peptides}$, ^{64}Cu applications, customized syntheses

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Technical Data

Main Unit	
Dimensions of the Peltier Reaction Module (PRM)	130 x 248 x 192 mm (W x D x H); Weight: 7.8 kg
Dimensions of the Vial Holder Module (VHM)	130 x 152 x 113 mm (W x D x H); Weight: 1.5 kg
Dimensions of the Valve Modules	Approx. 130 x 150 x 113 mm (W x D x H); Weight: 2.0 kg
Power supply	115 V ~ 60 Hz or 230 V ~ 50 Hz
Power consumption	Standard 480 W, 2 x bus 1,050 W, extension to 2,100 W possible
Environment temperature	+10 °C to +40 °C
Environment humidity	Max. 70 % rel.
Module Characteristics	
Reaction Module equipped with	Camera, stirrer, lift, activity detector, pressure detector and temperature sensor Sigradur vial (optional)
Reactor volume	Variable from 1 – 24 ml
Cooling/heating	Peltier elements or heating foil (-40 °C to +150 °C/ 220 °C)
Liquid transport	Vacuum pump and/or pressure
Unit Control	
Software	Modular-Lab Software
Interfaces	Ethernet

Module dimensions include handles.

Please note: Modular-Lab Standard makes use of locally available, off-the-shelf tubing, connectors, vials and valves.