

Modular-Lab

Peristaltic Pump Module (PPM)

Peristaltic Pump Module

Automated fluid transfer module with four independent channels suitable for development and more



Background

The daily work in radiochemistry and radiopharmaceutical laboratories requires several tasks involving active and non-active fluid transfers, such as production of tracers, dispensing, kit automation and more.

The Peristaltic Pump Module (PPM) type 54-3-0 is part of the Modular-Lab technology and especially designed to fulfil various fluid transfer tasks in such laboratory environments. By automating these processes, reproducibility of results is improved and users can be protected from unnecessary radiation exposure in comparison to a fully manual handling, especially during optimization and development.

Functionality

The PPM 54-3-0 uses a peristaltic pump with four independent channels to transfer fluids. The system is controlled with the well-established Modular-Lab software, which can be programmed by the operator according to the process requirements.

The tubing cassettes are fixed on the pump head by using purpose-built clasps and can be customized according to your needs. All basic cassette manifolds are designed for fail-free mounting and compatible with standard off-the-shelf components (filters, valves, etc.). This enables operators to develop own cassette designs and makes the PPM 54-3-0 an ideal module for in-house development.

All data is stored in a comprehensive batch report.

Possible applications

The Peristaltic Pump Module can be used for any process involving fluid transfer, including the synthesis of radiotracers, dispensing and dilution as well as kit type labeling.

Automation of manual kit formulation processes

With the growing number of kits for the labeling of PET and other radiotracers, whether registered or still under development, the potential of manual handling errors and

the risk of high radiation exposure to the operator increases. Approaches to minimize this potential by automation of the process have shown promising results.

With PPM 54-3-0 kit manufacturers are now offered the opportunity to automate their formulation in-house and develop their own specific processes according to the process guidelines or manuals.

Subsequently, Eckert & Ziegler offers the service to transfer these processes to the stand-alone device KitLab including the adaption of the software project to KitLab's interface. Furthermore, the pre-designed tubing cassettes will be manufactured in Eckert & Ziegler's production line under GMP-compliant clean room conditions to make them available in high quantities at a constant quality.

The KitLab process can be used by end customers as a simple standardized method in routine production in any laboratory afterwards.

Compatible with your Modular-Lab system

The PPM can be integrated in any existing Modular-Lab system.

Key Features

- Designed for transfer of fluids
- Four independently controllable pump-channels
- Bidirectional flow in each channel
- Controllable via Modular-Lab software with graphical interface
- Development of kit formulation processes with possibility to transfer to KitLab for use in routine production
- Easy and fail-free insertion of the cassette
- Disposable cassettes compatible with standard off-the-shelf components
- Possibility to include PPM into any existing Modular-Lab system

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Tubing cassettes

Eckert & Ziegler offers basic tubing cassettes (sterile or non-sterile) using platinum cured silicone with an inner diameter of 1 mm. Customized options (material, dimensions and accessories) provided upon request.

Technical Data

Module Characteristics	
Dimensions	130 x 220 x 200 mm (L x W x H)
Weight	3.8 kg
Flow Rate	0.0063 to 6 mL/min per channel
Speed Range	0.1–100 rpm
Differential Pressure	1.0 bar / 14.5 psi (max.)
Deviation	up to 10% (depending on tubing material and usage)
Main Unit	
Power supply	Power Adaptor for single use: 24 V Electrical Cabinet (EC mini): 100-240 V 50/60 Hz (when part of a system)
Power consumption	30 W (max.)
Environment temperature	+10 °C to +40 °C
Environment humidity	Max. 70% rel.
Unit Control	
Software	Modular-Lab Software

**Module dimensions include handles and bottom plate*

All available components are tested in-house before delivery. A performance qualification of the complete system on-site as well as extensive documentation will be provided upon request.

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