

Scale-up system



Flow chemistry offers an easy way for scaling up reactions.

Flow reaction parameters can be optimized using a small microreactor on few milligrams before moving onto a large tube reactor system for synthesizing multi-gram quantities of products. The systems enable exploratory reactions to be performed and optimized on a few mgs scale. The manufactured amount can then be increased to kgs per day on the same system, with minimal setup changes.

	Regular	Advanced
Flow rate	1.0 μ L/min to 10mL/min*	
Pressure (bar)	0 to 20bar**	
System temp. (°C)	-68 [^] to amb.	-100 to +250
Pump channels	2	4
Chip reactors	✗	✗
Tube reactors	✓	✓
Column reactors	✓	✓
Electrochemistry	✗	✗
FLUX volume	N/A	N/A
Product collection	✗	✗
Aqueous work-up	✗	✓
Pressurized inputs	✓	✓
Injection valves	✗	✗
Auto injection valves	✗	✗
Analysis interface	✗	✓
Automation	✗	✓

* Depending on the syringe size.

** 10 bar when using fluoropolymer tube reactors.

[^] Depending on cooling solution.

Modules

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Pressurized Input Store

Pressurizes four bottles with an inert gas enabling the use of air sensitive reagents and eliminates cavitation when pumping. Input pressure 1-10 bar, output pressure 1 bar.

Auto RIM

Includes two independent chemically resistant channels allowing reagents stored in racks of septum capped vials to be automatically aspirated and loaded into injection loops.

Reagent Injector

2 extremely chemically resistant injection valves with sample loops. 0.1ml, 1ml, 5ml or 10ml, manual or automated control, 0 to 20 bar. Ideal for rapid reaction optimisation.

Heater and Chip

This module has adaptors that can be changed in seconds to heat the full asia range of reactors. Temperature range from room temperature to 250°C.

FLLEX

The Flow Liquid Liquid EXTRACTION (FLLEX) offers continuous flow aqueous work up. Internal volume 100µl. FLLEX can be used anywhere within the flow setup.

Pressure Controller

Automatically pressurizes the reaction up to 20bar (300psi) for ultra-fast reaction rates and control of gas/liquid reactions.

Automated Collector

Allows automated collection of multiple reactions in separate vials or vessels. Waste is automatically diverted.

Asia Manager Software

Easy to use for total 'walk-away' control of the Asia System.

Syringe Pump

Extremely chemically resistant continuous flow pumps for ultra smooth flow. Flow rate from 1µl/min to 10ml/min each, 20 bar, pressure sensor.

Cryo Controller

Rapidly cool a selection of fluoropolymer or stainless steel tube reactors to -70°C or a range of glass or quartz microreactors to -100°C. Requires only mains power, no need for cryogenic media.

Sampler and Dilutor

Enables on-line reaction analysis by automated sample extraction, dilution and transfer to an analytical system e.g. LCMS or UPLC. Dilution factor: 5 to 250.

FLUX - Flow Electrochemistry

Enables a wide range of electrode materials to be changed in seconds. No tools. Includes a power supply and electrochemical flow cell with minimal electrode gap. Internal reaction volume 225µl.

Chip Climate Controller

Enables glass microreactors to be cooled or heated from -15°C to +150°C - no need for circulator or cold water supply.

