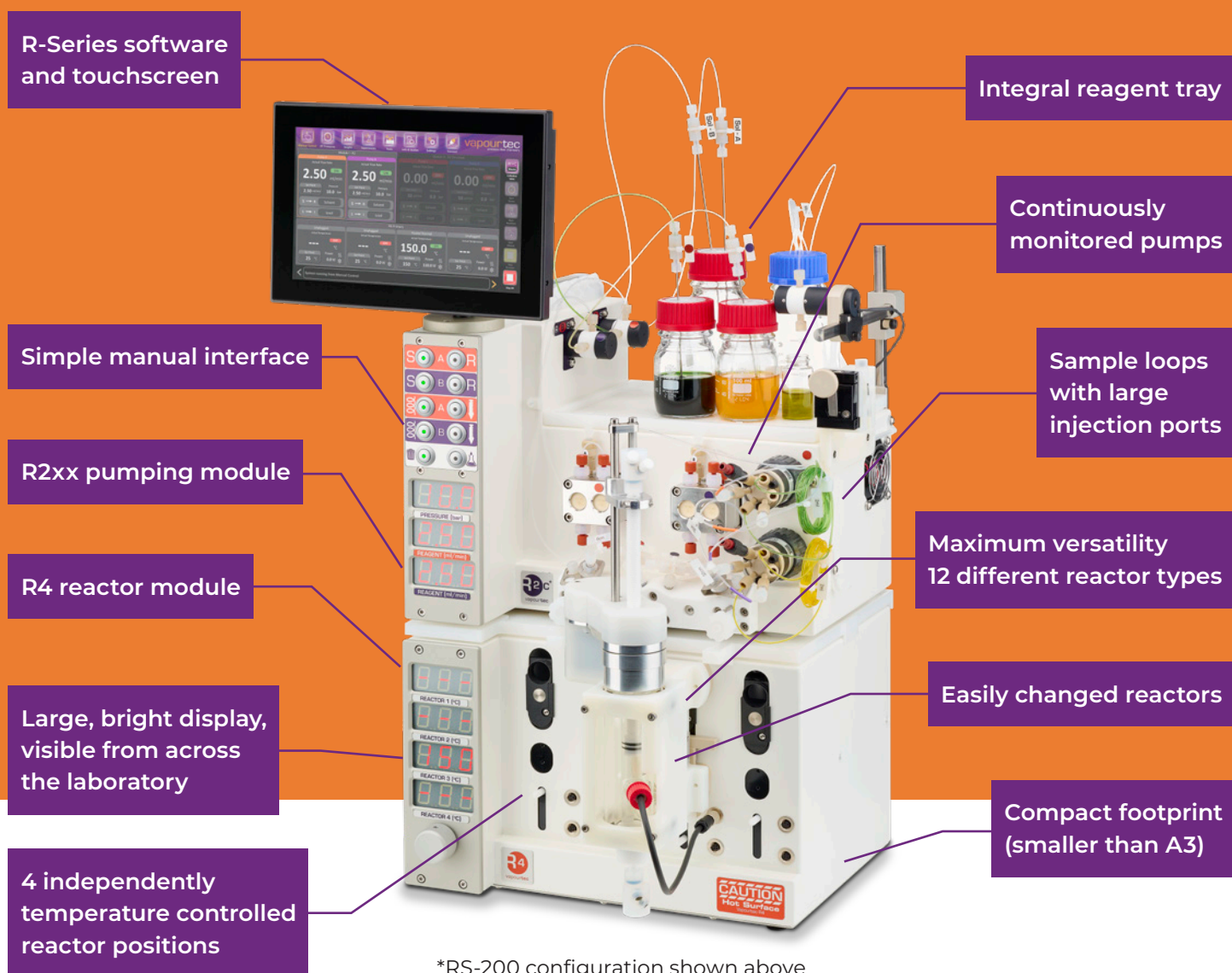


The R-Series flow chemistry system

FLEXIBLE | PRECISE | AUTOMATABLE



*RS-200 configuration shown above

vapourtec
precision flow chemistry



Trusted

The R-Series is used in more than 23 countries and has been cited by scientists in over 1,000 peer-reviewed publications.



Precise

The R-Series delivers best-in-class temperature control and continuously monitored flow rates for assured results and precision.



Flexible

The R-Series' modular design, with up to 8 individual reactors, makes it highly adaptable and customisable. An unlimited number of reactions can be queued for unattended execution, all with automatic fail-safe monitoring.



Connectivity

The R-Series software includes an optional OPC UA server simplifying connectivity to other laboratory instruments. Python script examples are included, enabling integration into AI platforms.

RS-300 Multiple reactions automated



- Automated R-Series system with 4 pumps
- Ideal for med chem & process research
- Four position reactor heater
- Range of cooled and heated reactors
- Product collector
- Can be expanded as required
- Automated control

RS-400 Automated reagent addition



- R-Series system with 4 pumps and autosampler
- Ideal for library synthesis and catalyst screening
- Four position reactor heater
- Range of cooled and heated reactors
- Autosampler / collector
- Fully automated control

RS-500 Solid phase peptide synthesis

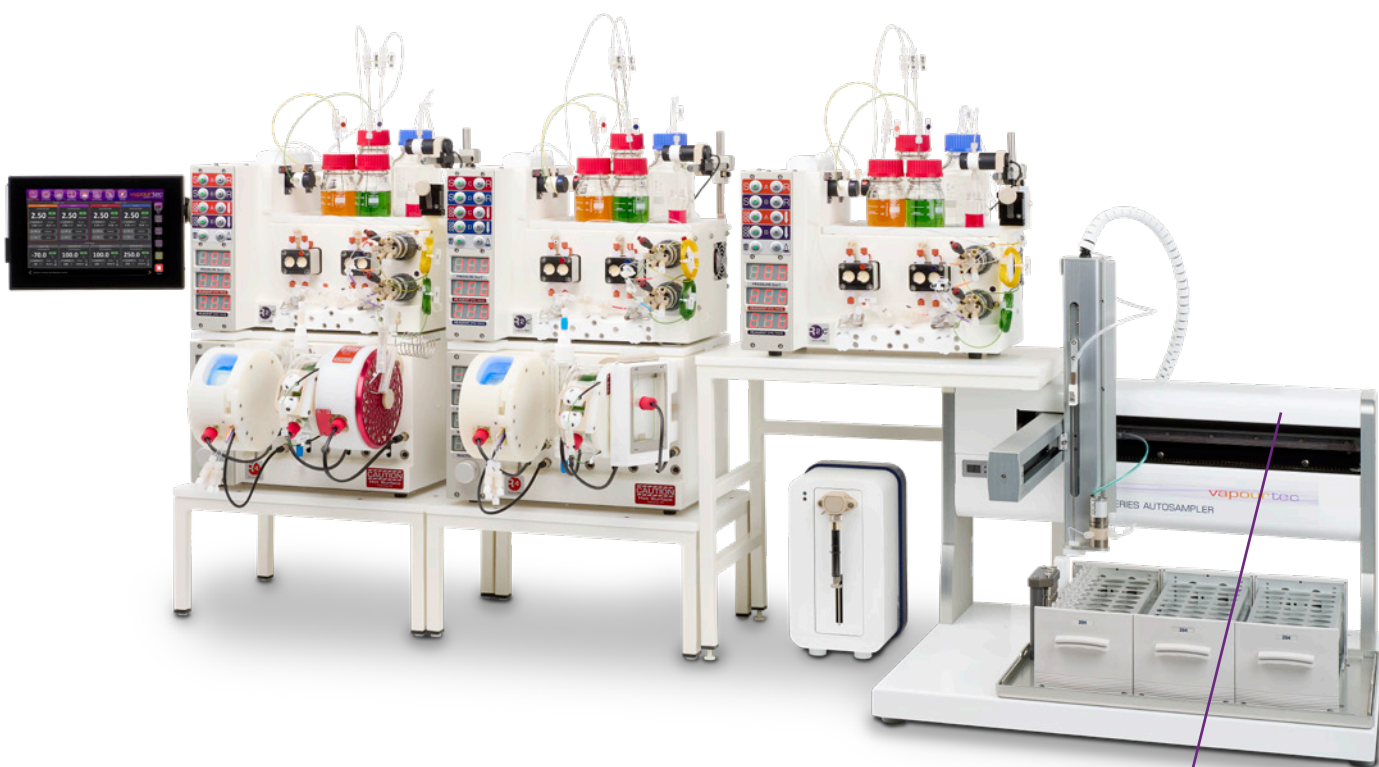


- Automated reagent loading and product collection
- Optimised for continuous flow SPPS
- Supplied with an R4 reactor, two R2C pump modules, variable bed flow reactor (VBFR), autosampler, SF-10 for precision back pressure management
- VBFR options for scales ranging from 0.05 mmol to 5 mmol

R-Series configurations

The R-Series is undoubtedly the most versatile, modular flow chemistry system available today. Developed for the scientist who needs:

- Best in class performance
- Cited in over 1,000 peer-reviewed publications
- Over 750 systems in daily use around the world
- Easy to learn and adaptable for many reactions or processes
- Reassurance of a system chosen by ALL of the top 25 global pharmaceutical companies



RS-600 Multiple step reactions

- Multiple step telescoped reactions
- Automated reagent loading and product collection
- Supplied with eight independent reactor positions, three R2C pump modules (6 pumps), autosampler and a wide range of reactors
- Vapourtec control software
- Can be extended up to 8 pumps

Choosing the right pump

Vapourtec supplies a comprehensive range of precision flow reactors covering a broad range of flow chemical applications.

All pumping modules use our unique continuous automatic monitoring system to monitor performance of pumps to ensure accurate reporting of flow rates, and shutdown safely in the event of a leak or blockage. In addition to Vapourtec manufactured pumps, 3rd party pumps are available including a syringe pump option suitable for precision low flowrate applications.

Pump model	Number of channels	Sample injection loops	Max reaction pressure	Strong acid resistance	Slurry pumping
R2	2	-	42 bar	-	-
R2 plus	2	✓	42 bar	-	-
R2 C	2	-	42 bar	✓	-
R2 C plus	2	✓	42 bar	✓	-
R2 HP	2	-	200 bar	-	-
R2 HP plus	2	✓	200 bar	-	-
R2S	2	-	10 bar	✓	✓
R2S plus	2	✓	10 bar	✓	✓
R2 HF	2	-	42 bar	-	-
R2 HF C	2	-	42 bar	✓	-

Reactor choice

The R-Series houses up to 8 separate reactors, each with individual temperature control. The reactors can be combined to increase the total reactor volume, or to deliver multi-step synthesis.

Each reactor is held securely within an insulated manifold. Changing reactors takes just seconds, with no tools required.



Standard tube reactor

- ✓ Excellent visibility of reactants
- ✓ Ambient to 150 °C
- ✓ PFA, stainless steel or Hastelloy
- ✓ Strong acid resistance (with PFA)



High temperature tube reactor

- ✓ Double insulated for safety
- ✓ Ambient to 250 °C
- ✓ Stainless steel or Hastelloy
- ✓ Acid resistance (with Hastelloy)
- ✓ Options for 50 bar or 200 bar



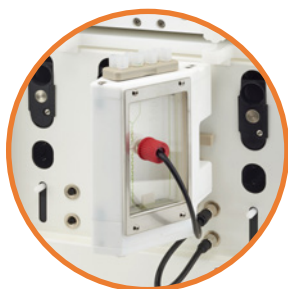
Cooled tube reactor

- ✓ Good visibility of reactants
- ✓ -70 °C to ambient
- ✓ Strong acid resistance
- ✓ Pre-cooling of 3 reagents
- ✓ Cooled mixers



Fixed bed reactor

- ✓ Ambient to 150 °C
- ✓ Volume from 0.3 ml to 25 ml
- ✓ Ideal for scavenger resins, immobilised catalysts, solid-supported reagents
- ✓ Resistant to acids and bases
- ✓ Full visibility of reactor contents



Micromixer reactor

- ✓ For homogeneous reactions at small scale
- ✓ Excellent visibility of reactants
- ✓ -40 °C to 150 °C
- ✓ Borosilicate glass reactor chips



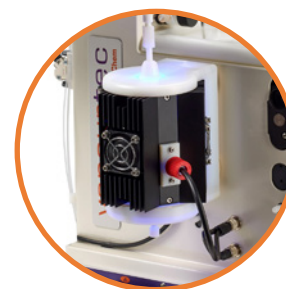
Photochemical reactor

- ✓ UV lamp or LED light sources
- ✓ Fully interlocked for safety
- ✓ -5 °C to 80 °C
- ✓ Up to 10 ml reactors
- ✓ Wavelength filters available



Electrochemical reactor

- ✓ Options for integrated or standalone operation
- ✓ Ability to heat and cool the reactor -10 °C to +100 °C
- ✓ Operation pressure up to 5 bar



Photocatalytic reactor

- ✓ UV reactions with immobilised catalysts
- ✓ Volume from 0.3 ml to 3 ml
- ✓ LED wavelengths 365 nm to 700 nm
- ✓ Temperature -40 °C to 80 °C



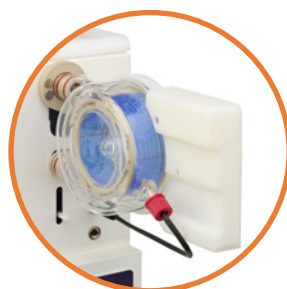
Variable bed flow reactor (VBFR)

- ✓ Resistant to strong acids & bases
- ✓ Fully automatic volume change
- ✓ Can be heated/cooled, 150 °C to -20 °C
- ✓ Volume range 0.3 ml to 20 ml



Heated mixing tube reactor

- ✓ Good visibility of reactants
- ✓ Ambient to 150 °C
- ✓ PFA reactors only
- ✓ Strong acid resistance
- ✓ Pre-heating of 3 reagents



Large diameter tubular reactor

- ✓ Ideal for multi-purpose reactions
- ✓ 20 ml internal volume
- ✓ 3.2 mm bore reactor
- ✓ Full length static mixers
- ✓ Temperature range ambient to 150 °C



Continuous Stirred Tank Reactor

- ✓ Cascade of up to 8 reactors
- ✓ -10 °C to +150 °C
- ✓ 5 ml to 40 ml volume per CSTR
- ✓ Pressurised reactions up to 5.0 bar
- ✓ Stirrer speed range 100 rpm to 1200 rpm
- ✓ Photochemical add-on for CSTR



About Vapourtec

Vapourtec is the world's leading manufacturer of laboratory scale flow chemistry instruments. Founded in 2003, Vapourtec has been at the forefront of the flow chemistry industry ever since.

Headquartered near Cambridge, UK, Vapourtec design and manufacture the R-Series and E-Series flow chemistry systems together with an exciting range of innovative fast-flow peptide synthesisers. Vapourtec instruments have empowered chemists throughout the world to further scientific discovery.

Trusted by scientists, chemists, and fine chemical manufacturers around the world, the modular R-Series system has revolutionized the way many deliver the research, chemicals, and products we all rely on. With an installation base of more than 750 instruments, resulting in being cited in over 1,000 peer reviewed scientific publications, we continue to support our customers across the globe with the world-class products and services with which Vapourtec has become synonymous.



World class



Innovative



Precise

vapourtec
precision flow chemistry

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