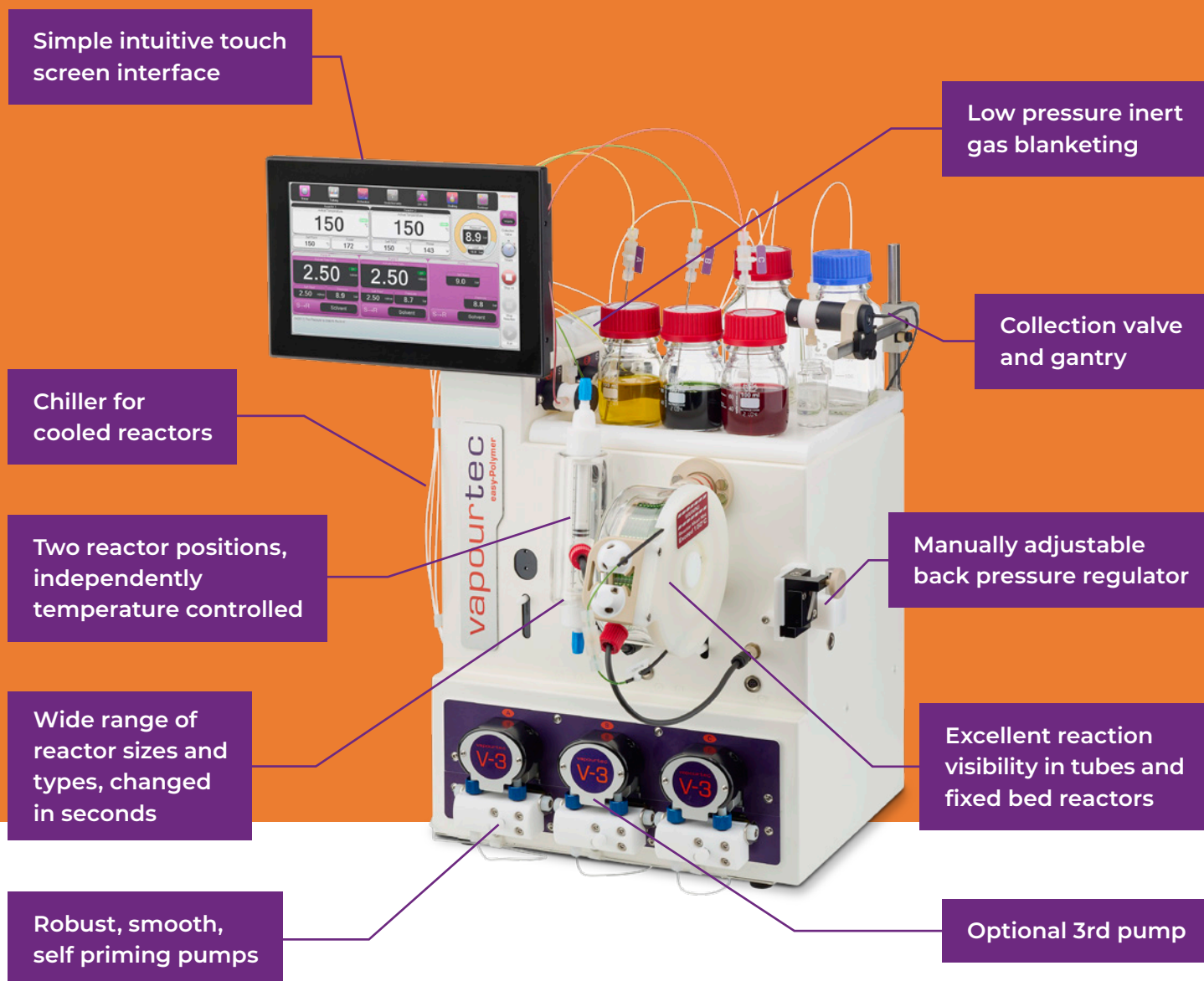


The E-Series flow chemistry system

ROBUST | EASY TO USE | AFFORDABLE



*easy-Medchem configuration shown above

vapourtec
precision flow chemistry



Trusted

The E-Series is installed in at least 23 countries. More than 300 E-Series are in daily use and the system has been widely cited by scientists in peer-reviewed publications.



Precise

The E-Series delivers best-in-class temperature control, and the unique E-Series pumps offer precision combined with a broad flowrate range from 10 $\mu\text{l}/\text{min}$ to 10 ml/min .



Flexible

The E-Series' design, with 2 individual reactor positions and up to 3 versatile pumps, makes it highly adaptable and customisable. Each reactor position can accept any one of Vapourtec's fourteen different reactor options.



Easy-to-use

Clear, intuitive touch screen user interface. Pumps that self-prime. Adjustable acid compatible back pressure regulator. All up and running in minutes.

easy-Scholar



- Entry level E-Series system
- Ideal for teaching flow chemistry
- Two or three independent pumps
- Add a further pump as required
- Two reactor positions
- Manual control via touch panel

easy-Polymer



- Advanced E-Series system
- Optimised for polymer synthesis
- Equipped for O₂ sensitive reactions
- Two or three independent pumps
- Manual control via touch panel

easy-Medchem



- Advanced E-Series system
- Optimised for medicinal chemistry
- Two or three independent pumps
- Supplied with two reactors
- Manual control via touch panel

E-Series configurations

The E-Series is available in a number of configurations for different applications.

All models come ready to use with a touchscreen interface, reagent bottles, tubing, mixer(s), back pressure regulator and reactor(s). Systems can be purchased with 2 or 3 reagent pumps. There are also a range of upgrade possibilities for enhanced functionality.



easy-Photochem

- Entry level E-Series system
- Optimised for photochemistry
- Supplied with photochemical reactor
- Two or three independent pumps
- Manual control via touch panel

The ability to easily pump:

- Strong acids
- Organometallic reagents
- Light suspensions
- Consecutive immiscible solvents

Light source options:

- Low Pressure Mercury
- Medium Pressure Mercury
- Light Emitting Diodes (LED)

A simple but powerful user interface

The E-Series touch screen offers a simple clear interface for immediate use with little or no learning curve. The facilities offered by the interface range from the basic manual controls to automated timers and info apps.

All models come with useful tools such as:

- Solvent Vapour Pressure Calculator
- Arrhenius Reaction Rate Calculator
- Residence Time Calculator
- Dispersion and Residence Time Distribution Tool

Three interchangeable light sources

Low pressure mercury lamp (3 options)



The low-pressure mercury lamp provides highly specific wavelengths of 254 nm, 320 nm and 365 nm.

Medium pressure mercury lamp



The medium pressure mercury lamp gives a broad range of discrete wavelengths between 220 nm and 600 nm. A range of long-pass and band-pass filters are available to attenuate unwanted wavelengths.

LED lamps (15 options)



The LED light source offers 15 precise wavelengths covering the range 365 nm to 730 nm. LED wavelengths can be changed in < 1 minute.

Upgrade options



Additional pump

Convert from 2 to 3 pumps

- ✓ 3rd Pump and mounting plates
- ✓ 3rd Solvent/Reagent valve
- ✓ 3rd Reagent bottle
- ✓ Extra tubing kit and mixer



Cooled reactor upgrade

All that's needed to run sub ambient reactions

- ✓ Cooled reactor with 5 ml reactor coil
- ✓ Chilled gas generator



Collection valve kit

Automated separation of product/waste output

- ✓ Collection valve and cable
- ✓ Retort stand and gantry
- ✓ Collection tubing kit
- ✓ Waste bottle



Organometallic reagent kit

- ✓ 3 long septum piercing aspiration needles [and tubing] for pumping air sensitive reagents
- ✓ 3 short septum piercing needles [and tubing] for introducing inert gas blanket to reagent bottles

Reactor choice

Each E-Series system has two reactor positions and each position can accept the full range of reactors available for the high-end Vapourtec R-Series.

Reactors can be changed in seconds without the need for tools. Each reactor coil or column is held securely within an insulated glass manifold, where the novel forced convection system ensures clean, accurate and even heating or cooling.



Standard tube reactor

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



Fixed bed reactor

- ✓ For heterogeneous reactions
- ✓ Excellent visibility of reactants
- ✓ Ambient to 150 °C
- ✓ Sizes from 3 ml to 20 ml
- ✓ Glass and PTFE reactors
- ✓ Strong acid resistance
- ✓ Rapid temperature control



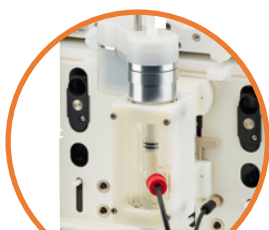
Cooled tube reactor

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



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



Variable bed flow reactor

- ✓ Resistant to strong acids and bases
- ✓ Can be heated and cooled, 150 °C to -20 °C
- ✓ Working volume range from 0.3 ml to 20 ml
- ✓ Fully automatic volume change
- ✓ VBFR volume can be logged and charted



Photochemical reactor

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



Photocatalytic reactor

- ✓ For illumination of immobilised photo catalysts
- ✓ Integrates with both E-Series and R-Series systems
- ✓ Catalyst is immobilised in a Pyrex column
- ✓ Volume of packed bed is adjustable 0.3 ml to 3 ml
- ✓ High power LEDs illuminate column



Micromixer reactor

- ✓ For homogeneous reactions at small scale
- ✓ Excellent visibility of reactants
- ✓ -40 °C to 150 °C
- ✓ Seven reactor configurations available
- ✓ Use up to 4 reactors at one time
- ✓ Borosilicate glass reactor chips



Ion electrochemical reactor

- ✓ Options for integrated or standalone operation
- ✓ Ability to heat and cool the reactor -10 °C to +100 °C
- ✓ Operation at pressure up to 5 bar
- ✓ 20 electrode materials available
- ✓ Flexibility in electrode spacing, electrode area and reactor volume



Heated mixing tube reactor

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



Large diameter tubular reactor

- ✓ 20 ml internal volume
- ✓ 3.2 mm bore reactor
- ✓ Full length static mixers
- ✓ Strong acid resistant
- ✓ Designed for bi-phasic liquid-liquid reactions
- ✓ Fits into standard glass manifold
- ✓ Temperature range ambient to 150 °C



Continuous Stirred Tank Reactor

- ✓ -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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