The E-Series flow chemistry system

ROBUST | EASY TO USE | AFFORDABLE

Simple intuitive touch screen interface

Low pressure inert gas blanketing

Collection valve and gantry

Chiller for cooled reactors

Two reactor positions, independently temperature controlled

Manually adjustable back pressure regulator

Wide range of reactor sizes and types, changed in seconds

Excellent reaction visibility in tubes and fixed bed reactors

Robust, smooth, self priming pumps

Optional 3rd pump

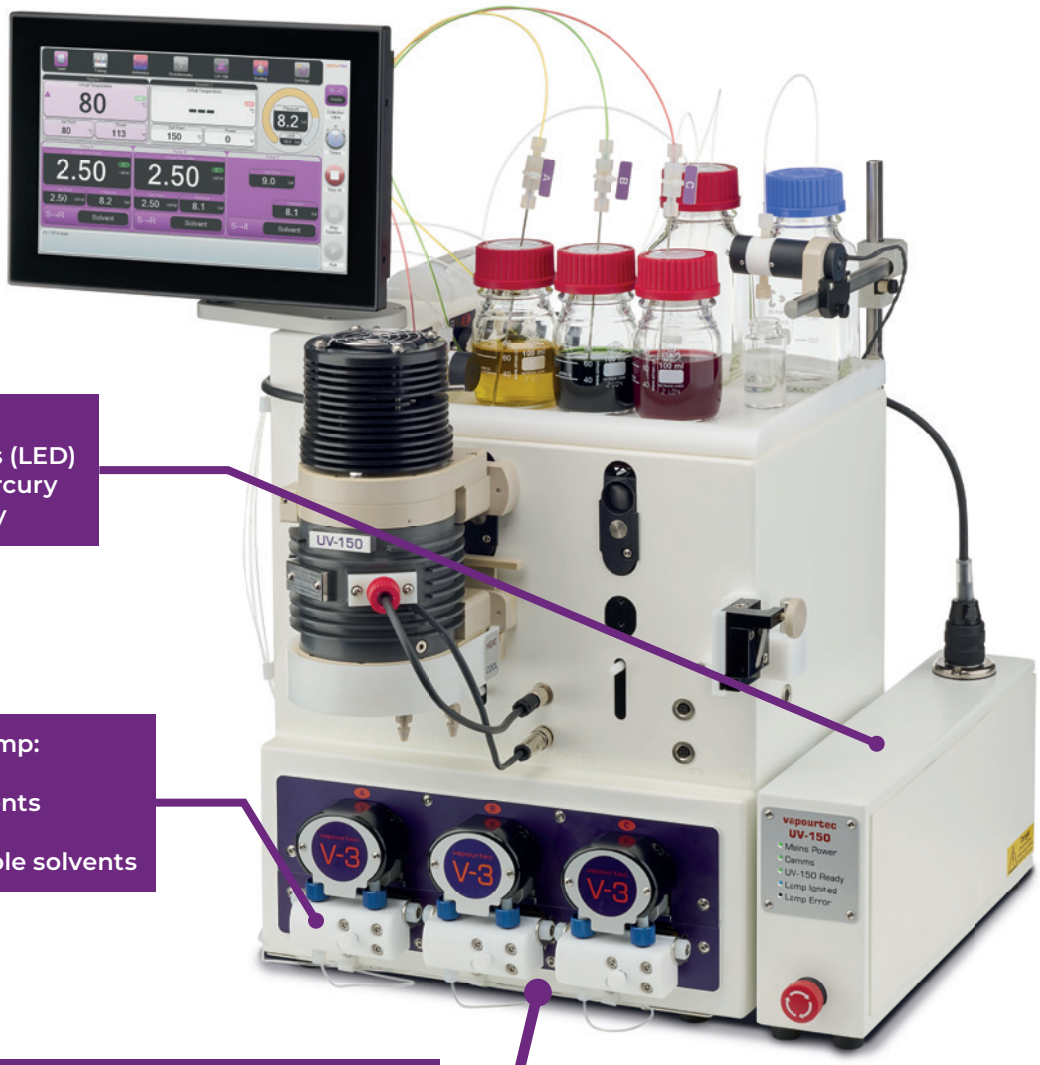
*easy-Medchem configuration shown above

vapourtec
precision flow chemistry

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.



Light source options:
- Light Emitting Diodes (LED)
- Medium Pressure Mercury
- Low Pressure Mercury

The ability to easily pump:
- Strong acids
- Organometallic reagents
- Light suspensions
- Consecutive immiscible solvents

easy-Photochem

- Entry level E-Series system
- Optimised for photochemistry
- Supplied with UV-150 photochemical reactor
- Two or three independent pumps
- Manual control via touch panel

Trusted
The E-Series is installed in at least 20 countries. More than 280 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 µl/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 anyone one of Vapourtec 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

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

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

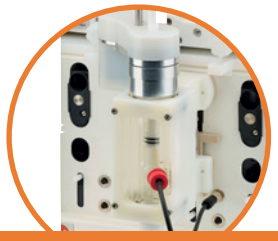
- ✓ For heterogeneous reactions
- ✓ Excellent visibility of reactants
- ✓ Ambient to 150°C
- ✓ Sizes from 3 ml to 20 ml
- ✓ Glass and PTFE reactors
- ✓ Strong acid resistance
- ✓ Rapid temperature control

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

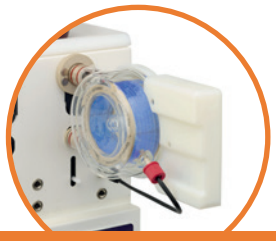
- ✓ For homogeneous reactions at small scale
- ✓ Excellent visibility of reactants
- ✓ -40°C to 150°C
- ✓ Seven reactor configurations available
- ✓ Use up to 4 reactors at one time
- ✓ Borosilicate glass reactor chips

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

Heated BPR

- ✓ For neat reactions
- ✓ For products with melting points < 120°C
- ✓ Allows BPR to be heated to 150°C
- ✓ PEEK and Perfluoroelastomer wetted parts

About Vapourtec

Vapourtec is the world's leading manufacturer of flow chemistry equipment. Founded in 2003 by Duncan Guthrie, Vapourtec has been at the forefront of the flow chemistry industry ever since.

Headquartered in Bury St Edmunds, UK, Vapourtec design and manufacture the R-Series and E-Series flow chemistry systems that have empowered chemists throughout the world to further scientific discovery.

Trusted by academics, chemists, and manufacturers around the world, the modular R-Series system has revolutionised the way many deliver the research, chemicals, and products we all rely on.

In December 2022, the E-Series flow chemistry system celebrated its 10th anniversary. This entry-level system made flow chemistry more accessible than ever before.

With an installation base of more than 600 systems, resulting in over 920 citations in peer-reviewed 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

+44 (0) 1284 728659
info@vapourtec.com
www.vapourtec.com

Vapourtec Ltd, Park Farm Business Centre, Fornham St Genevieve, Bury St Edmunds, Suffolk, IP28 6TS, UK