



FlowLab™ and FlowLab Cold™

Affordable, entry-level flow chemistry systems

FlowLab™



Low cost, entry level, 2 channel flow chemistry system



- 2 High pressure pumps with integrated pressure transducers
- HotCoil™ heated coil reactor station
- FlowLab™ automated system control software with data logging
- Wi-Fi remote control
- Quickly save and reload experiments
- Supplied with 5.0ml stainless and 5.0ml PTFE coil reactors and back pressure regulator

FlowLab™ is an affordable and easy-to-use entry level flow chemistry system that is ideal for education, training and for those wishing to try flow chemistry without the associated costs of a sophisticated fully automatic system.

The system comprises of 2 high pressure pumps, a **HotCoil™** coil reactor station and **FlowLab** system control software. A 5ml PTFE and a 5ml 316L stainless steel coil reactor and a fixed back pressure regulator (BPR) are included. The computer, pumps and **HotCoil** are connected over a LAN using an Ethernet HUB. In this way, the system can be operated remotely by Wi-Fi allowing the control computer to be conveniently positioned outside the fume cupboard and away from chemicals.

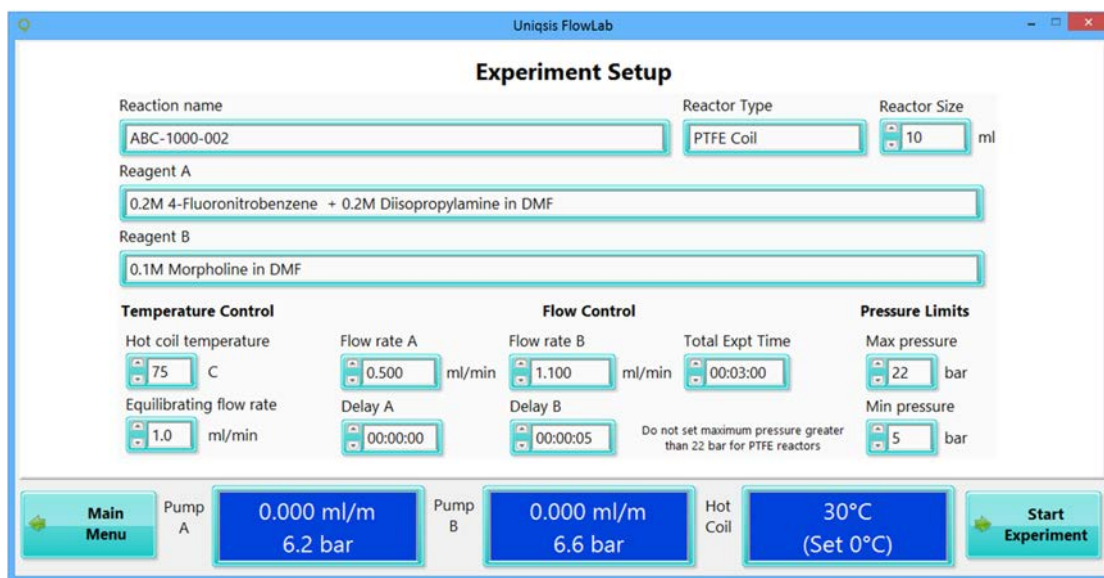
Optionally available, as shown above, are a stand and 4 position manual PTFE inlet valves for each pump.

The pumps have a combined flow rate range of 0.01 to 20 ml/min and will operate up to 100 bar (200bar is available as an option). Each pump has a built in pressure transducer and safe operating pressure limits can be set by the user. The reagents are mixed at a “T”-piece and then flow through the coil reactor and into a collection bottle. Back pressure is set by a fixed back pressure regulator cartridge positioned in-line with the flow stream.

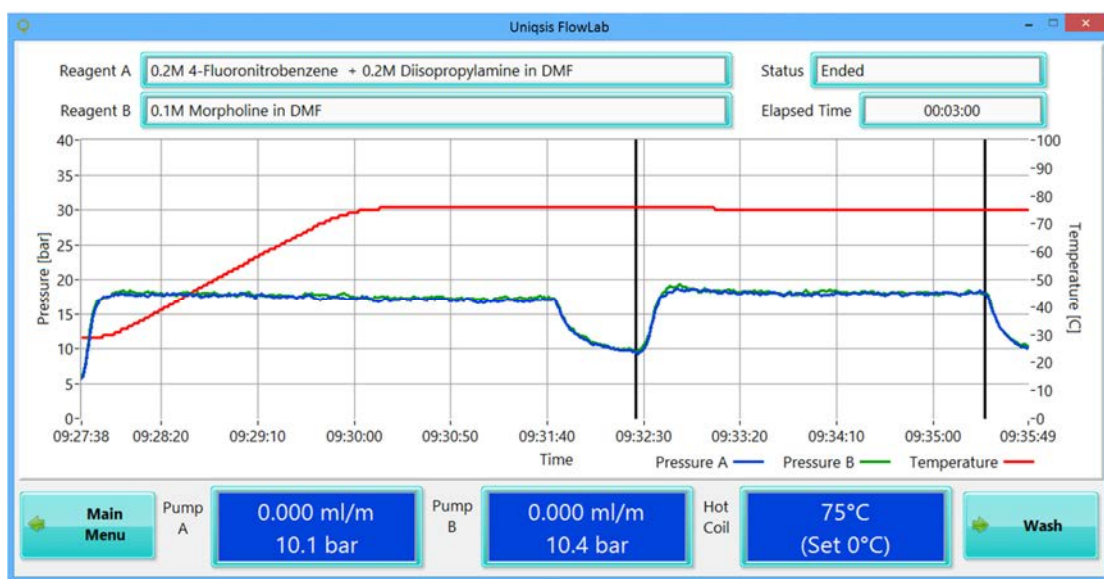
The **FlowLab** application affords control of the system via a 'step-through' interface that is straightforward to use. Specific control screens allow users to modify system settings and perform automated priming and wash functions in addition to designing new, or loading previous, experiments. Reactions can be run automatically on a time basis, and reaction progress is monitored in real-time from a plot of temperature and pressures. The reagents used can be entered in text fields and logged data is automatically saved.

For operational safety, **FlowLab** software monitors pressure and temperature and will automatically shut down if there is a blockage, leakage or overheating.

Straightforward experiment setup ...



Real-time monitoring of temperatures and pressures ...



UQ1026 UniQsis FlowLab™ system comprises:

- Pumps:** HPLC pumps with pressure transducers; 0.01 to 10.0 ml/min, $P_{max}=100\text{bar}$ (2 each)
- Reactor module:** HotCoil reactor station ambient to 260°C (300°C option)
- Coil reactors:** 5.0ml stainless steel and 5.0ml coil reactors (1 each),
- Computer:** Laptop with **FlowLab** control application installed
- Accessories:** PTFE "T"-piece mixer and connecting tubing
100psi Fixed back pressure regulator and PEEK holder
Bottles and caps
Ethernet Hub and Wi-Fi router

FlowLab Cold™

2 Channel entry-level, flow chemistry system with active cooling

- 2 High pressure pumps with integrated pressure transducers
- Polar Bear *Plus* Flow™ cryogenic reactor module (-40°C to +150°C)
- FlowLab™ automated system control software with data logging
- Wi-Fi remote control
- Quickly save and reload experiments
- Optional chip holder
- Active cooling



FlowLab Cold™ is based around the same core components as FlowLab but the HotCoil reactor module is replaced by the Polar Bear *Plus* Flow cryogenic module. This allows experiments to be performed from -40°C to +150°C and the unit requires no liquid nitrogen or card-ice when operating in sub-ambient mode.

A key advantage is the inclusion of active cooling which assists both in the temperature control of exothermic reactions and accelerates equilibration to new experiment conditions that require a lower reaction temperature

FlowLab Cold is compatible with all standard Uniqsis coil reactors and can also be fitted with an optional holder to accommodate Uniqsis glass static mixer/reactor chips. These give more reproducible mixing and temperature control in comparison to a simple 'T'-piece mixer.

This system can be operated remotely by Wi-Fi and the FlowLab control software auto-detects both the pumps and reactor module present.

UQ1026-C Uniqsis FlowLab Cold™ system comprises:

- Pumps:** HPLC pumps with pressure transducers; 0.01 to 10.0 ml/min, P_{\max} =100bar (2 each)
- Reactor module:** Polar Bear *Plus* Flow cryogenic reactor station -40°C to 150°C
- Coil reactors:** 5.0ml and 14.0ml PTFE HT coil reactors (1 each),
- Computer:** Laptop with FlowLab control application installed
- Accessories:** PTFE 'T'-piece mixer and connecting tubing
100psi Fixed BPR cartridge and PEEK holder
Bottles and caps
Ethernet Hub and Wi-Fi router

Uniqsis FlowLab™ optional extras:

A wide range of optional accessories are compatible with **FlowLab**. These include coil reactors in sizes ranging from 2.0ml to 60ml constructed of PTFE, PFA, 316L stainless steel, Hastelloy® or copper tubing.

A selection of standard (PEEK) or chemically inert (Hastelloy® and perfluoropolymer) in-line back pressure regulator cartridges (5-50bar).

The **HotCoil** coil reactor can be fitted with the **HotColumn™** accessory (shown opposite). This can accommodate up to 6 column reactors for catalytic or scavenging applications and holders that fit different sized columns can be specified.



Examples of Additional Options

UQ1027 FlowLab inlet switching valves (x2)

UQ1022-38 FlowLab stand, 380mm

UQ9002 50ml/min pumps heads for 20P pumps

UQ3003 Stainless steel coil reactor set (2.5ml, 5ml, 10ml, 20ml)

UQ3005 HT coil reactor kit (2ml, 14ml PTFE HT and 2.5, 5ml, 20ml stainless steel)

UQ-1035-2 HotColumn adaptor with 2 column modules for 15mm OD columns (columns not included)

UQ1053-001 Polar Bear Plus Chip integration holder

U-469 Back pressure cartridge holder, stainless steel

U-469T Back pressure cartridge holder, PTFE

P-762U Inert back pressure regulator cartridge (5 bar blue)

P-763U Inert back pressure regulator cartridge (10 bar red)

P-766U Inert back pressure regulator cartridge (20 bar red)

P-765U Inert back pressure regulator cartridge (30 bar green)

P-795U Inert back pressure regulator cartridge (50 bar black)

All system components are CE marked and are covered by a 12 month warranty against component malfunction and defective workmanship.

UQ1025 HotCoil Flow Reactor Heater — Specification	
Dimensions (on bench)	230mm (w) x 250 mm (d) x 280 mm
Power supply (Total)	220V 1000VA or 110V 1000VA
Weight	6.0 kg



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