# Cold Coil Reactor Module

## Coil Reactor Heating and Cooling Unit for Flow Chemistry

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at

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# Cold Coil™ Flow Reactor Module

## Flexible standalone heating and cooling module for flow chemistry

- **Connects to a suitable circulator to achieve stable temperatures from -80 °C to 150° C**
- **Optional chip module available for use with Asynt's GSMs (shown opposite)**
- **Convert to a photoreactor by adding the PhotoSyn™ or Nebula™ LED modules**
- **Compatible with all Asynt coil reactors**
- **Optional remote temperature probe**

The Asynt **Cold Coil™** is a versatile standalone temperature controlled coil reactor module that, when connected to a suitable external circulator, is designed to maintain stable temperatures between –80 °C and 150 °C for extended periods.

An internal temperature probe can be connected directly to the external heater/chiller (RS232) to ensure accurate remote control of the Cold Coil II reactor temperature. When connected to a **Binary Pump Module** as the reagent delivery system, the heater/chiller can be controlled directly from the Asynt user interface.

The unit is compatible with all Asynt coil reactors, from 2.0 mL up to 60 mL capacity. These are available in a wide range of materials that includes PTFE, PFA, FEP, copper, 316L SS and Hastelloy C-276. A proprietary clamping mechanism holds the coil reactor firmly in place and ensures optimal thermal contact whilst allowing coil reactors to be easily interchanged.

A glass cover is provided to eliminate convection effects within fume cupboards. A vacuum jacketed glass cover is also available and is recommended for use at very low temperatures.

The Cold Coil is also compatible with the Asynt **HotColumn** multiple column reactor adaptor for packed bed applications.

Fitting the optional **GSM Adaptor** extends the utility of the Cold Coil further and allows an Asynt glass static mixer to be incorporated. This may be used as a rapid mixing device before flowing directly into a coil reactor as an incubation module (see Application Note 25).

Since the Cold Coil is a true standalone module with no internal electronic control components it can be readily assimilated into an exis ng flow reactor system. Alternatively, several units may be quickly connected in series to afford a rapid route to scale-up.

## Selected optional extras:

**HotColumn Adaptor:** The HotColumn Adaptor fits directly onto the Cold Coil and allows up to 6 insulated column holders to be fitted. Holders are available in a range of  sizes to accommodate columns from 10 mm –20 mm OD.
Columns are available in glass, with adjustable plungers, or 316L stainless steel with fixed end pieces.
Columns may be connected in series to afford a rapid route to scale-up.
A temperature probe may be inserted directly into the column holder for accurate temperature control.

**Cold Coil GSM ('chip ') Holder:** The GSM holder attaches to the top of the Cold Coil and connects directly to the internal coolant channels. It is compa ble with smaller Asynt GSMs which are clamped in place to maximise thermal contact with the constant temperature plate

**PhotoSyn LED Photoreactor:** The Cold Coil can be converted into a photoflow reactor by fitting the PhotoSyn high power LED light unit. This is available with a range of standard wavelength configura ons (365 nm, 455 nm and 555 nm) in addition to custom configurations.
The LED arrays are powered by an external power supply that operates at up to 700 W.
Whilst the LED arrays are water-cooled, the coil reactor temperature is independently controlled by the circulator. Safety interlocks disable the LEDs if any attempt is made to remove the PhotoSyn whilst in operation.

### Cold Coil II Options & Accessories

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| **UQ1050-M2** | Cold Coil II including single wall glass cover |
| **UQ7047** | Remote temperature probe for Cold Coil II, Pt100 |
| **UQ1071** | GSM ('chip') holder for Cold Coil II |
| **UQ1041** | HotColumn Adaptor™ (maximum of 6 column reactors) |
| **UQ1037-15** | Column holder assembly complete for 10 mm ID (15 mm OD) glass column |
| **UQ1074** | PhotoSyn™ High Power LED light hood and power supply, 455nm |
| **UQ1075** | PhotoSyn™ High Power LED light hood and power supply, 455/365nm |

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