



# Mya 4 Reaction Station

One reaction station with limitless possibilities

- 4 independent zones
- Magnetic and overhead stirring
- -30 °C to +180 °C
- 2 ml to 400 ml vessels
- Software control

Improving the productivity of your chemistry

# Key Features

A 4-zone reaction station offering safe and precise heating, active cooling, software control and data-logging for 24/7 unattended chemistry



### Mya Compact Stirrer

- Stirs from 100 to 1000 rpm
- Control each position independently
- Powerful, high torque motor
- Tool-free attachment

### Wide range of vessel styles and sizes

- 2 ml to 400 ml
- Vials, tubes, round bottom flask and straight sided process vessels

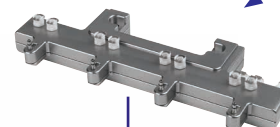
### Reflux Head

- Water-cooled
- Efficient refluxing
- Distributes inert gas



### Manifold Head

- Distributes water for glass condensers
- Distributes inert gas



### Excellent visibility

- Easily view your vessel contents

### Up to 200 °C difference in adjacent zones

- High performance insulation minimises zone cross-talk

### Cool to -25 °C with tap water

- No need for a separate chiller
- Powerful Peltier technology provides rapid cooling

### Temperature -30 °C to +180 °C

- Independent control of each zone
- Block or solution control
- Pt100 temperature probes

### Space saving

- Compact benchtop footprint
- Less space than 4 separate reaction set-ups

### Magnetic stirring from 100 to 1000 rpm

- Control each position independently

### Touch-screen Control Pad

- Supplied as standard
- Intuitive and easy to use
- Set automated profiles or use manual control

### Single or multi-user operation

- Control heating/cooling and stirring of each zone independently

### Optional PC Control Software

- Integrate and control 3rd party devices such as pumps, balances and pH sensors



Let Daisy introduce our Mya 4

[www.radleys.com/mya4](http://www.radleys.com/mya4)

# Overview

A flexible tool for a wide range of applications, from discovery chemistry to process development



## Flexible and versatile

- 4 different temperature zones, each with heating and active cooling
- Use one compact system for a range of experiments
- Precise temperature control
- Magnetic or optional overhead stirring
- Accepts a wide range of vessel sizes and styles
- Control your experiments and log results automatically
- Use Mya 4 with or without a chiller



## Applications

- ✓ Single or parallel synthesis
- ✓ Design of Experiment (DoE)
- ✓ Process development
- ✓ Scale up
- ✓ Route scouting
- ✓ Crystallisation studies
- ✓ Polymorph screening
- ✓ Lead optimisation
- ✓ Reaction optimisation
- ✓ Reagent, catalyst and solvent screening

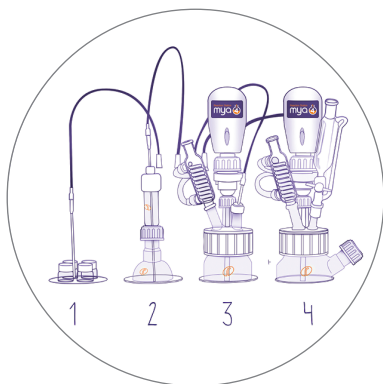
## Safer, cleaner, greener and more productive

- Replace inefficient, messy and unsafe oil and ice baths
- Save space compared with separate reaction set-ups
- Software control improves safety, reduces manual errors, and allows 24/7 unattended chemistry, for improved productivity
- Create, repeat and share experiments and results with ease and accuracy
- Easily manage complex multi-step and multi-device experiments
- Integrate 3rd party devices such as pumps, balances and pH sensors etc.



# Mya 4 - Details

Precise temperature control of four independent zones with magnetic or overhead stirring



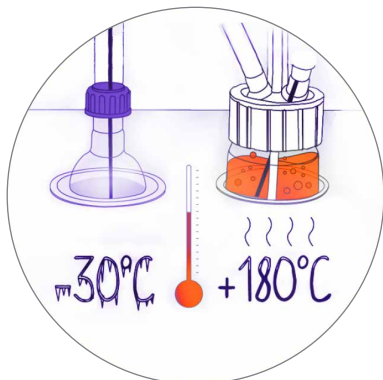
## 4 reaction zones

- Use 1, 2, 3 or 4 zones
- Operate zones in parallel or individually by multiple users
- Compact footprint 600 (W) x 360 (D) x 370 (H) mm

## Precise temperature control

Temperature range from -30 °C to +180 °C (block temperature)

- Providing a solution temperature of at least -20 °C to 150 °C
- Up to 200 °C difference between adjacent positions
- Control the temperature of each zone independently
- Choose to control by block or solution temperature
- Pt100 temperature probes available in stainless steel or PTFE coated



## Use Mya 4 with or without a chiller

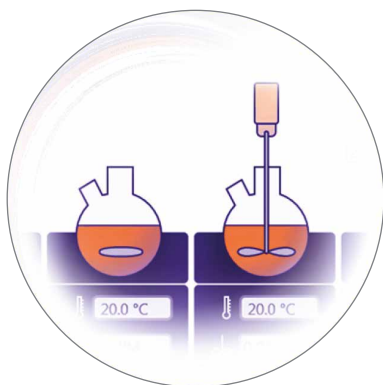
Mya 4 uses powerful Peltier technology to provide rapid cooling to -30 °C

- Peltier cells require tap or chilled water to dissipate heat

| Peltier cooling source       | Tap water at 15 °C | Chilled water at 5 °C |
|------------------------------|--------------------|-----------------------|
| Minimum block temperature    | -25 °C             | -30 °C                |
| Minimum solution temperature | -20 °C             | -25 °C                |

## Magnetic or optional overhead stirring

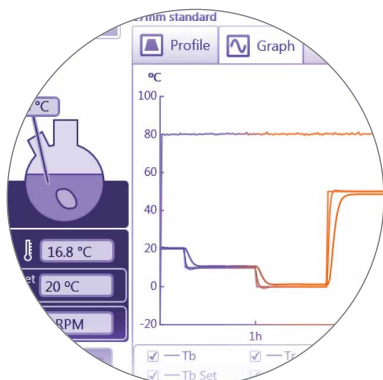
- Integrated magnetic stirring - from 100 to 1000 rpm
- Optional overhead stirring - from 100 to 1000 rpm
- Control the stirring speed of each position independently
- Use magnetic or overhead stirring in adjacent zones



## Software control and data logging

Choice of Touch-screen Control Pad and PC Control Software

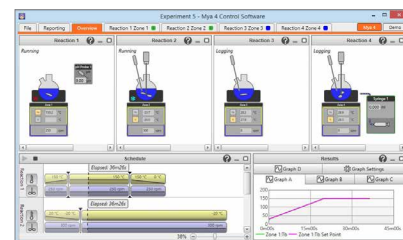
- Run experiments in manual or profile mode
- Easily repeat profiles
- Export CSV data



Touch-screen Control Pad



Optional PC Control Software





# Glassware and accessories

Choose from a wide selection of vials, tubes, round bottom flasks and process vessels, from 2 ml to 400 ml

## Wide selection of vessel styles and volumes

### Vials and tubes from 2 ml to 50 ml:

- 12 mm, 16 mm, 17 mm, 17 mm tapered, 24 mm, 1 inch and 28 mm diameters
- Radleys Carousel 12 Plus reaction tubes

### Round bottom flasks from the Carousel 6 Plus range:

- 25 ml, 50 ml, 100 ml and 250 ml
- One or two side arm options
- Standard and wide neck options
- Baffled vessel options

### Process reaction vessels:

- With straight sides and dished base to mimic jacketed reactors
- 50 ml, 100 ml, 150 ml, 250 ml and 400 ml
- Side arm option
- Baffled vessel options

## Aluminium Inserts

Removable anodised aluminium inserts for different size vessels



## Multi-neck lids

For wide neck round bottom flasks and process vessels

### Glass lids

- 3 or 5-neck
- 3.3 Borosilicate glass



### PTFE lids

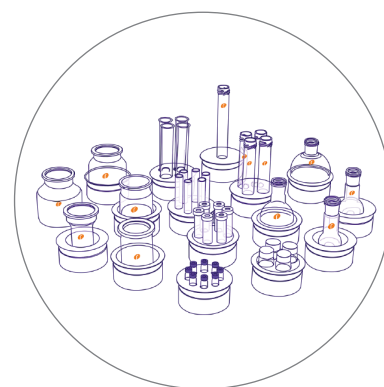
- 5-neck
- For improved durability and safety
- Stronger to support heavier probes/accessories



## Accessory glassware

A wide range of dedicated glass accessories including:

- Condensers
- Dropping funnels
- Solid addition funnels
- Stoppers



Vials and tubes from 2 ml to 50 ml



Round bottom flasks with narrow or wide necks...



...with optional sidearms and baffles



Process Reaction Vessels with straight sides...



...with optional sidearms and baffles



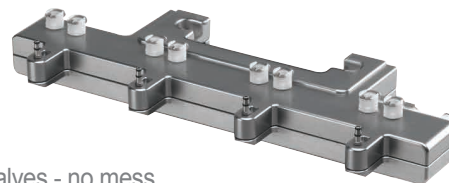
## Head options - refluxing & glassware support

Choose from three different Mya 4 heads to suit your chemistry needs. Easy to set up and no tools required.

### Manifold Head

Provides cooling water to glass condensers and distributes inert gas

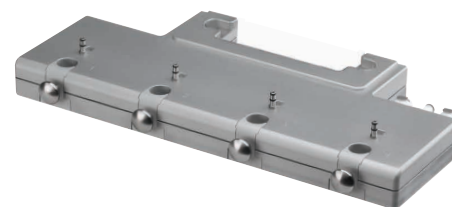
- Required when using multi-neck lids
- All the water connections have shut-off valves - no mess
- Note: Glassware with reflux tubes can be used but not for refluxing



### Reflux Head

Cools reflux tubes and distributes inert gas

- Can be used with reflux tubes (or wide neck reflux tubes) and short tubes/vials
- Note: Can be used with overhead stirrers



### Support Head

Choose the Support Head if you want to use different glassware and accessories such as:

- Findenser and Findenser Mini
- Traditional glass condensers
- Non-standard flasks and tubes
- Soxhlet extraction glassware
- Probes and sensors
- Use with StarFish gas and water manifolds



# Customer testimonials

Accurate temperature control achieving big results, on a small scale

## Mya 4 applications which require accurate temperature control:

- Exothermic reactions - which require active cooling
- Study of parameters other than temperature - which require reliable and reproducible temperatures
- Working with temperature-sensitive materials (e.g. biomolecules) - which require tightly controlled temperatures
- Experiments requiring slow cooling or heating ramps

## Johnson Matthey - Macfarlan Smith, API manufacturer

### Study of key processing parameters other than temperature

'The precise temperature control provided by the Mya 4 has been essential to understanding key processing parameters of temperature sensitive experiments. It has allowed us to improve our understanding of current manufacturing processes.'

'Without accuracy of temperature, you cannot conduct a successful design of experiment (DoE) exercise.'

**Dr Timothy Davies, Senior Development Chemist**

## Opioid manufacturer

### Carefully controlled cooling ramps for crystallisation optimisation

'Prior to acquiring Mya 4, we used stirring hotplates and liquid cooling baths (dry ice/acetone) when needed. The set up and tinkering using this regime was completely obviated with Mya 4, which is basically a walk up reaction workstation.'

'We do a lot of reaction optimisation work (different catalyst loads, different temperatures, etc.) and recently had to do a crystallisation optimisation that required carefully controlled cooling ramps – all of this was a breeze with Mya 4 and made our research progress much quicker.'

**Senior Process Development Chemist**

## Purolite Life Sciences, Resin manufacturer

### Temperature-sensitive materials and exothermic reactions

'Mya 4 fulfils the need of a multipurpose small-scale reactor system that is not over-specified. The fact that the unit is so versatile is a strong advantage.'

'On previous systems I have looked at, flask sizes were limited to only one or two options. I would have loved a Mya 4, two years ago so I could have used it as the workhorse for most of the project.'

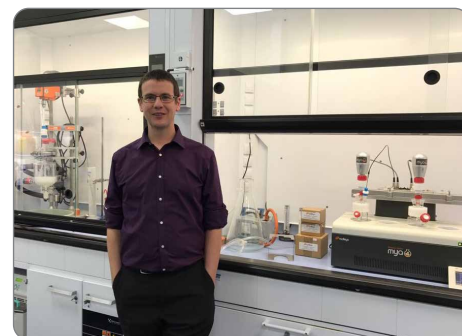
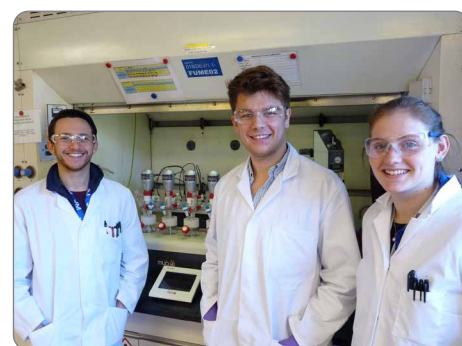
**Dr Patrick Gilbert, R&D Manager**

Let Daisy introduce our Mya 4 Video

[www.radleys.com/mya4](http://www.radleys.com/mya4)



Visit [www.radleys.com/case-studies](http://www.radleys.com/case-studies) for a full list of Mya 4 case studies



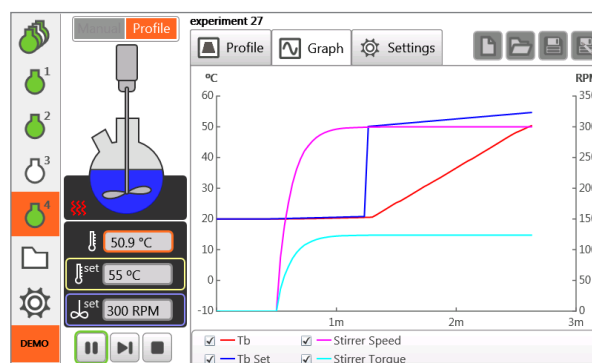
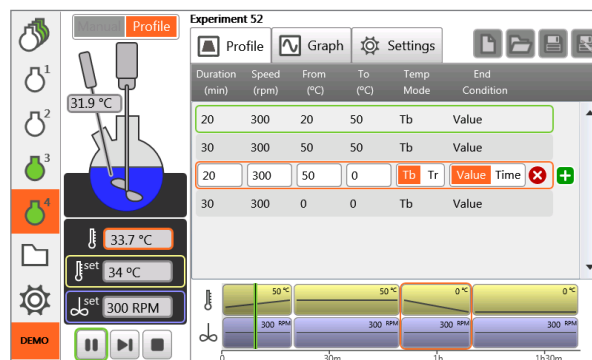
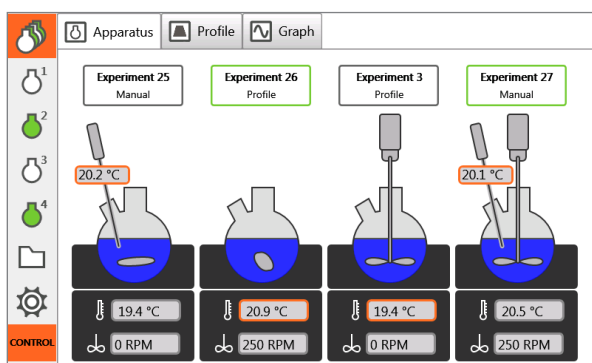
# Mya 4 Control Pad

Unattended chemistry 24/7 with software control for improved productivity, safety and reduced manual errors



## Touch-screen Control Pad

- Supplied as standard with Mya 4
- Set automated profiles or use manual control
- Intuitive and easy to use
- Compact footprint



## Control Options

The touch-screen Control Pad requires minimal training. It will control and log heating/cooling and stirring for all four zones independently. Repeating experiments and exporting data is a breeze.

Upgrade to the Mya 4 PC Control Software if you also want to:

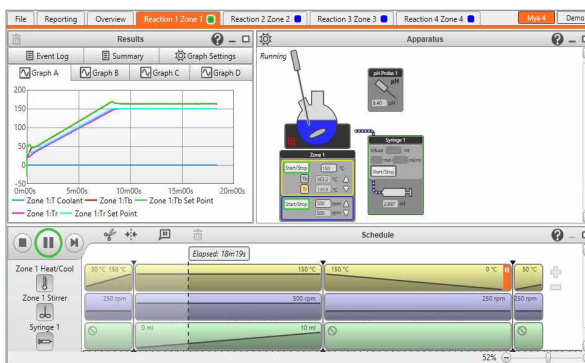
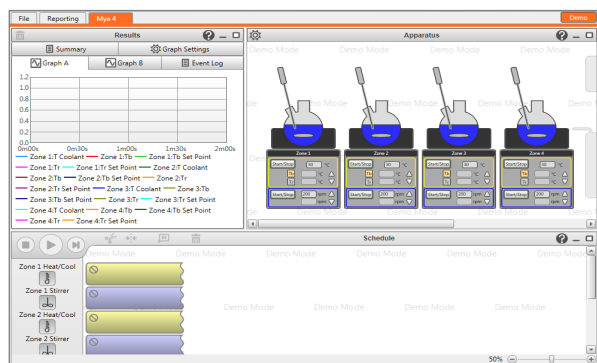
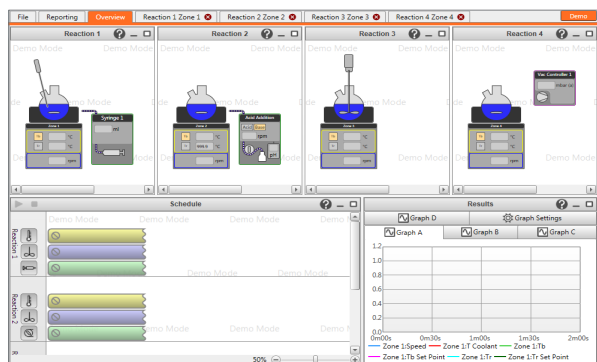
- Integrate 3rd party devices e.g. pumps and pH meters
- Create profile experiments with any number of steps
- Increase safety by using warnings, safe states and shut down settings
- Create a comprehensive report in a few clicks at the end of your experiment

| Features  | Control Pad | PC Software |
|---|-------------|-------------|
| Intuitive and easy to use touch-screen control                            | ✓           | ✗           |
| Compact footprint - fumehood compatible                                   | ✓           | ✗           |
| Maximum 10 steps of 16 hours each   | ✓           | ✗           |
| Multi-user - independently run experiment in 4 zones                      | ✓           | ✗           |
| Control and log the temperature and stirring of each zone independently   | ✓           | ✓           |
| Set safety limits   | ✓           | ✓           |
| Export experimental profiles and results in CSV via USB memory stick      | ✓           | ✓           |
| Adjust parameters manually - using manual/direct mode                     | ✓           | ✓           |
| Create multi-step recipes - using profile/schedule mode                   | ✓           | ✓           |
| Flexibility to make and track on-the-fly adjustments to your experiment   | ✓           | ✓           |
| Automatically log all data  | ✓           | ✓           |
| Share experimental results and recipes with other users                   | ✓           | ✓           |
| View real-time graphs   | ✓           | ✓           |
| Control and log up to 16 x 3rd party devices on one screen                | ✗           | ✓           |
| Create complex experiments with any number of steps                       | ✗           | ✓           |
| Interlink devices and set feedback/control loops and end point conditions | ✗           | ✓           |
| Report Wizard creates detailed reports in RTF or export results in CSV    | ✗           | ✓           |
| Log comments  | ✗           | ✓           |
| Runs on a Windows laptop  | ✗           | ✓           |



# Mya 4 PC Control Software

Advanced software control with added safety features,  
3rd party device integration and reporting



## Mya 4 Control Software

- Integrate and control 3rd party devices
- Create complex experiments with any number of steps
- Report Wizard creates reports in rich text format or export results in CSV



Mya 4 PC Control Software will control and log 3rd party devices



## Control 3rd party devices

Mya 4 Control Software includes a library of pre-configured driver files allowing easy integration with a range of 3rd party devices.



## Data hub

Using the Data Hub, Mya 4 Control Software can connect to, control and log data from multiple devices with an RS232 serial interface.



Download the Mya 4 demo software at [www.radleys.com](http://www.radleys.com)

# How to configure your Mya 4 Reaction Station

Select the components you need to suit your chemistry

Our experts can advise you on the best options for your application

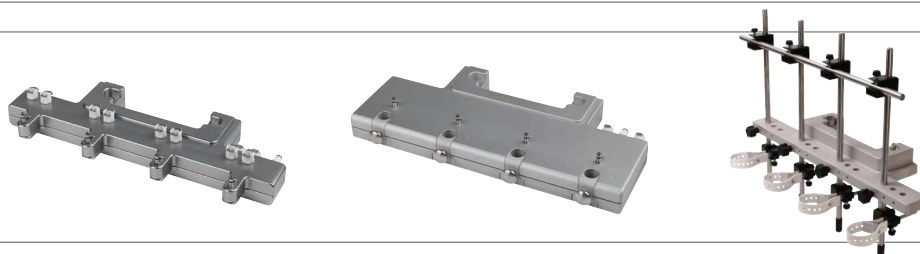
## 1 Stirring options

Select stirrer bars for magnetic stirring and/or Mya compact stirrers and stirrer shafts for overhead stirring.



## 2 Head options

Select a Manifold, Reflux or Support head.



## 3 Lids or reflux tubes

Glass or PTFE multi-neck lids. Standard or wide-neck reflux tubes.



## 4 Vessel styles & volumes

Select vessels: tubes, vials, round bottom flasks and process vessels from 2 ml to 400 ml.



## 5 Aluminium inserts

Select the appropriate insert for each vessel size.



## 6 Select accessories

Temperature probes, funnels, condensers etc.



## 7 Control options

Select the optional Mya 4 PC Control Software, Data Hub and any 3rd party devices.

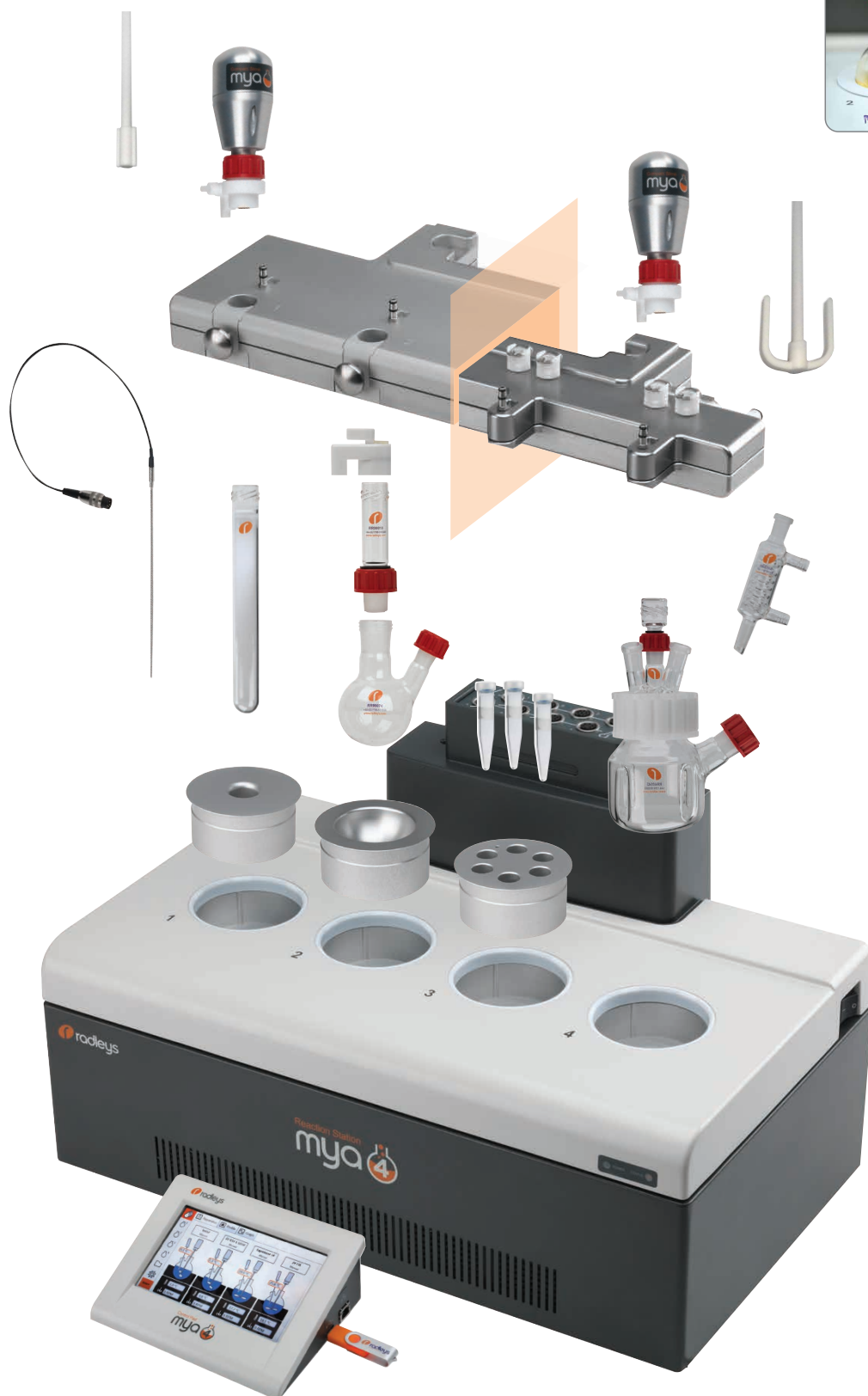
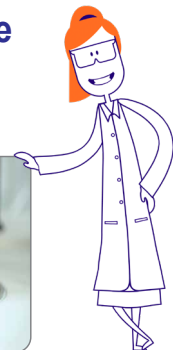


# Mix & Match

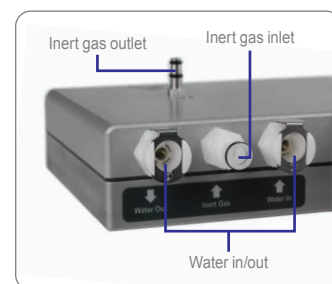
A flexible reaction station with a wide range of options and accessories to fit your needs

Let Daisy introduce our Mya 4 Video

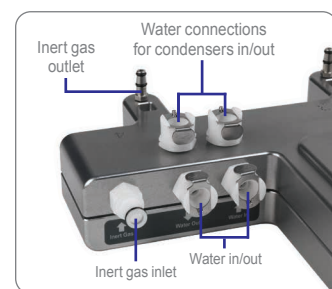
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## Reflux Head



## Manifold Head



## Applications

- ✓ Single or parallel synthesis
- ✓ Design of Experiment (DoE)
- ✓ Process development
- ✓ Scale up
- ✓ Route scouting
- ✓ Crystallisation studies
- ✓ Polymorph screening
- ✓ Lead optimisation
- ✓ Reaction optimisation
- ✓ Reagent, catalyst and solvent screening

# World leaders in innovative productivity tools for chemists



## International Product Guide

Innovative tools for chemical synthesis, process development, work-up and evaporation.



## Reactor-Ready Lab Reactors

Innovative, patented, low cost, reaction work stations for glass vessels from 100 ml to 5 litres.



## Carousel 6 Plus

Simultaneously heats/cools, stirs and refluxes multiple samples under an inert atmosphere.



## Carousel 12 Plus

Simultaneously heats/cools, stirs and refluxes multiple samples under an inert atmosphere.



## AVA Lab Control Software

Control and log multiple devices including stirrers, circulators, balances, pumps and temperature sensors.



## Findenser SUPER Air Condenser

Replaces water-cooled condensers in over 95% of common chemistry applications.

Radleys provide innovative chemistry equipment for safer, cleaner, greener and more productive chemical research.

Visit [www.radleys.com](http://www.radleys.com) to see our full range of chemistry productivity tools.



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