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Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
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Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
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Мурманск (8152)59-64-93
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Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
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Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
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Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35
Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
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Череповец (8202)49-02-64
Чита (3022)38-34-83
Якутск (4112)23-90-97
Ярославль (4852)69-52-93

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Electrothermal

For all your heating, cooling & stirring needs

- CMU Electromantles
- Controllers
- Heating Cords & Tapes
- Histology & Pathology Products
- Kjeldahl Equipment
- Melting Point Apparatus
- Metal Electromantles
- Multi (Extraction) Mantles
- STEM Omni Reaction Stations
- STEM RS Reaction Stations
- STEM Integrity 10 Reaction Sta³
- Stirrers

Electrothermal

Contents

For all your heating, cooling & stirring needs

Welcome to Electrothermal

For all your heating, cooling and stirring needs

Welcome to the very first edition of the Electrothermal catalogue in which you will find a veritable Aladdin's cave of laboratory equipment that heats, cools and stirs.

We are very proud of our 70 years' heritage of producing high quality equipment that performs well, is safe and gives many years of use in a harsh laboratory environment. Our equipment is reliable and built to last.

Our famous Electromantles revolutionised the heating of round bottom flasks; prior to this design innovation, the main options available were oil or water baths which were hazardous and hard to control. Our metal and EM series Electromantles are probably still the best and safest mantles around. We make them to suit all sizes up to 22 litres, so if you want a heating mantle, you've definitely come to the right place.

On top of this, we are proud to offer you our new IA9000 series Melting Point Apparatus, which has just been revamped and re-launched, along with the brand new Mel-Temp® - we doubt that you can buy a better Melting Point Apparatus anywhere at such a reasonable price.

And also take a look at our extensive range of reaction stations that give superb performance coupled with fast throughput, enabling you to run as many as 50 experiments simultaneously. Our Omni and RS ranges give the same controlled temperature and stirring rate at all reaction positions simultaneously, whilst our Integrity 10 gives individual control of these at each of its 10 positions, and the newly launched Integrity 6 does the same at each of its 6 positions. As with all our products, their versatility and value for money is second to none.

Electrothermal products are designed and manufactured in the UK at an ISO9001:2008 certified site with a "cradle to grave" approach, so that every step of the product's journey from conception to disposal is properly managed and documented. All electrical products produced by Electrothermal conform to the latest safety directives including the European CE requirements and where appropriate, the CSA (Canadian Standards Association) requirements. We are also compliant with the Waste Electrical and Electronic Equipment Directive, (the WEEE Regulations- Directive 2002/96/EC) and the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2005 (the RoHS Regulations- Directive 2002/95/EC).

Electrothermal

Mantles

CMU, EM Series, Digi-Mantles

We have an extensive range of heating mantles, including CMU Electromantles with metal cases and EM Electromantles with polypropylene cases, some models offering optional stirring functionality, catering for various round bottom flask capacities and being able to accommodate funnels. Digi-Mantles offer accurate electronic control of both heating and stirring and their modular inter-changeable design ensures that the same base controller can accept different-sized heating mantles. Our Multi (Extraction) Mantles can heat between 3 and 6 round bottom flasks simultaneously, providing stirring too if desired. Although mainly used for extraction, they can be used as a space-saving apparatus for heating multiple flasks in any laboratory.

Electromantle Guide

The Electrothermal series of heating mantles has been specifically designed to provide a comprehensive answer to heating fluids in round bottom flasks in the modern laboratory.

Polypropylene Case

Electromantle Series	EM	EMA	EMV	EMX Spill-proof
Functions	Heating	Heating & Stirring	Heating: V-shaped for 60° funnels, round bottom & pear shaped flasks	
Flask Size (ml)				
10 - 50			•	
50	•	•		
100	•	•		
100 - 250			•	
250	•	•		
500	•	•		
500 - 1000			•	•
1000	•	•		
2000	•	•		
2000 - 5000			•	•
3000	•			
5000	•			
Temperature range	Ambient to 450°C for element			
Max. Stirring Rate	520rpm			
Certfications	CE approved			

Aluminium Case

Electromantle Series	CMU	CMUT Controlled or Uncontrolled	CMUA	CMUV Controlled or Uncontrolled	Digi-Mantles
Functions	Heating	Heating	Heating & Stirring	Heating (V-shaped for 60° funnels, round bottom & pear-shaped flasks)	Heating & Stirring
Flask Size (ml)					
50	•		•		
100	•		•		
250	•		•		•
250 - 1000		•			
500	•		•		•
1000	•		•		•
2000	•		•		
3000	•		•		
5000	•		•		
10000				•	
12000				•	
20000 - 22000				•	
Temperature range	Ambient to 450°C for element				Ambient to 450°C
Max. Stirring Rate	2000rpm				2000rpm
Certfications	CE and CSA approved;				

Note: All units have 3 electrical choices, just add suffix X1 to the catalogue number for 115V, X6 for EU Plug 230V
Controllers: For remote energy control use MC242, for remote temperature use MC810B

Electrothermal

Metal Electromantles

CMU Series

The Electrothermal series of heating mantles has been specifically designed to provide a comprehensive answer to heating fluids in round bottom flasks in the modern laboratory.

CMU

Uncontrolled Mantles

CMU Uncontrolled Electromantles are used in wet chemistry to heat liquids in round bottom flasks. The metal case is designed to remain "cool-to-the-touch" when in operation. Electrothermal heating mantles have a grounded stainless steel earth screen covering the element and are double fused for added safety. The CMU Electromantles are CE and CSA approved.

Technical Specification

Material	Aluminum powder-coated case
Max Element Temperature	450°C

50ml - 250ml Ordering Information

Dimensions (d x w x h), mm	175 x 175 x 150
Shipping Weight, kg	0.75

Model	Capacity	Electrical Requirements
CMUA0050/E	50ml	230V 50/60Hz, 75W
CMU0050/EX1	50ml	115V 50/60Hz, 75W
CMU0050/EX6*	50ml	230V 50/60Hz, 75W
CMU0100/E	100ml	230V 50/60Hz, 100W
CMU0100/EX1	100ml	115V 50/60Hz, 100W
CMU0100/EX6*	100ml	230V 50/60Hz, 100W
CMUA0250/E	250ml	230V 50/60Hz, 200W
CMU0250/EX1	250ml	115V 50/60Hz, 200W
CMU0250/EX6*	250ml	230V 50/60Hz, 200W

500ml - 1000ml Ordering Information

Dimensions (d x w x h), mm	220 x 220 x 170
Shipping Weight, kg	1.5

Model	Capacity	Electrical Requirements
CMU0500/E	500ml	230V 50/60Hz, 280W
CMU0500/EX1	500ml	115V 50/60Hz, 280W
CMU0500/EX6*	500ml	230V 50/60Hz, 280W
CMU1000/E	1000ml	230V 50/60Hz 380W
CMU1000/EX1	1000ml	115V 50/60Hz, 380W
CMU1000/EX6*	1000ml	230V 50/60Hz, 380W

*230V models with X6 suffix come with EU plug fitting

Key Features

- Valuable for fume hood or remote working
- Must be used with a controller; the MC5 & MC242 Controllers are our recommended ones
- Round bottom flask capacity of between 50ml - 5000ml
- "Cool-to-the-touch" design
- Element temperature up to 450°C
- Built-in energy regulator
- Indicator lamps for power and heater operation
- Replaceable insulated heater cartridge
- An easy to clean, powder coated aluminium outer casing
- Non-skid feet and support rod clamps
- Added safety features such as a grounded earth screen and double fuses
- Automatic cut-off if liquid is spilled to protect the user from electric shocks
- CSA approved

CMU

Uncontrolled Mantle

CMU

Uncontrolled Mantle

CMU

Uncontrolled Mantles

2000ml - 5000ml Ordering Information

Dimensions (d x w x h), mm	320 x 320 x 220
Shipping Weight, kg	2.75

Model	Capacity	Electrical Requirements
CMU2000/E	2000ml	230V 50/60Hz, 500W
CMU2000/EX1	2000ml	115V 50/60Hz, 500W
CMU2000/EX6*	2000ml	230V 50/60HZ, 500W
CMU3000/E	3000ml	230V 50/60Hz, 500W
CMU3000/EX1	3000ml	115V 50/60Hz, 500W
CMU3000/EX6*	3000ml	230V 50/60HZ, 500W
CMU5000/E	5000ml	230V 50/60Hz, 800W
CMU5000/EX1	5000ml	115V 50/60Hz, 800W
CMU5000/EX6*	5000ml	230V 50/60Hz, 800W

MC5

Controller

MC5

Controller

Uncontrolled CMU Electromantles are designed for use with the MC5 Controller. This may be valuable when remote working is preferred, for example when experiments are being conducted in fume hoods.

Ordering Information

Model	Electrical Requirement
MC5	230V, 50/60Hz, 800W
MC5X1	115V, 50/60Hz, 460W
MC5X6*	230V, 50/60Hz, 800W

*Comes with EU Plug fitting

CMU

Contolled Mantles

Electrothermal's metal-cased CMU Electromantles are the culmination of years of experience and continuous design improvement. These well-established products are used throughout many industries for a huge variety of applications. Today, we can confidently guarantee to give you quality products whose reliability and safety continue to make them market leaders.

50ml - 250ml Ordering Information

Dimensions (d x w x h), mm	175 x 175 x 150
Shipping Weight, kg	0.75

Model	Capacity	Electrical Requirements
CMU0050/CE	50ml	230V 50/60Hz, 75W
CMU0050/CEX1	50ml	115V 50/60Hz, 75W
CMU0050/CEX6	50ml	230V 50/60Hz, 75W, EU Plug
CMU0100/CE	100ml	230V 50/60Hz, 100W
CMU0100/CEX1	100ml	115V 50/60Hz, 100W
CMU0100/CEX6	100ml	230V 50/60Hz, 100W, EU Plug
CMU0250/CE	250ml	230V 50/60Hz, 200W
CMU0250/CEX1	250ml	115V 50/60Hz, 200W
CMU0250/CEX6	250ml	230V 50/60Hz, 200W, EU Plug

500ml - 1000ml Ordering Information

Dimensions (d x w x h), mm	220 x 220 x 170
Shipping Weight, kg	1.5

Model	Capacity	Electrical Requirements
CMU0500/CE	500ml	230V 50/60Hz, 280W
CMU0500/CEX1	500ml	115V 50/60Hz, 280W
CMU0500/CEX6	500ml	230V 50/60Hz, 280W, EU Plug
CMU1000/CE	1000ml	230V 50/60Hz 380W
CMU1000/CEX1	1000ml	115V 50/60Hz, 380W
CMU1000/CEX6	1000ml	230V 50/60Hz, 380W, EU Plug

2000ml - 5000ml Ordering Information

Dimensions (d x w x h), mm	320 x 320 x 220
Shipping Weight, kg	2.75

Model	Capacity	Electrical Requirements
CMU2000/CE	2000ml	230V 50/60Hz, 500W
CMU2000/CEX1	2000ml	115V 50/60Hz, 500W
CMU2000/CEX6	2000ml	230V 50/60HZ, 500W, EU Plug
CMU3000/CE	3000ml	230V 50/60Hz, 500W
CMU3000/CEX1	3000ml	115V 50/60Hz, 500W
CMU3000/CEX6	3000ml	230V 50/60HZ, 500W, EU Plug
CMU5000/CE	5000ml	230V 50/60Hz, 800W
CMU5000/CEX1	5000ml	115V 50/60Hz, 800W
CMU5000/CEX6	5000ml	230V 50/60Hz, 800W, EU Plug

Key Features

- Round bottom flask capacity of between 50ml - 5000ml
- "Cool-to-the-touch" design
- Element temperature up to 450°C
- Built-in energy regulator
- Indicator lamps for power and heater operation
- Replaceable insulated heater cartridge
- An easy to clean, powder coated aluminium outer casing
- Non-skid feet and support rod clamps
- Added safety features such as a grounded earth screen and double fuses
- Automatic cut-off if liquid is spilled to protect the user from electric shocks
- CSA approved

CMU

Controlled Mantles

Multiple volume Electromantle

Key Features

- Multiple volume round bottom flask capacity of between 250ml - 1000ml
- "Cool-to-the-touch" design
- Element temperature up to 450°C
- Built-in energy regulator
- Indicator lamps for power and heater operation
- Replaceable insulated heater cartridge
- An easy to clean, powder coated aluminium outer casing
- Non-skid feet and support rod clamps
- Added safety features such as a grounded earth screen and double fuses
- Automatic cut-off if liquid is spilled to protect the user from electric shocks
- CSA approved

The CMUT Electromantle is a muiltiple volume CMU Electromantle, able to accommodate round bottom flasks of between 250ml to 1000ml capacity. Its key features are otherwise the same as for the CMU Electromantle.

Robust and economical

You can rely on CMU Electromantles to be the heating workhorse within your laboratory: They are economical to run, robust and easy to use, and our wide range of products caters for most sizes, making them flexible enough to meet almost all of your laboratory's heating requirements. Larger capacity products have multiple heating elements to ensure a more even and accurate heat transfer and the CMUT Electromantle has 2 separate circuits for this.

CMUT

Multiple volume Electromantle

Ordering Information

Dimensions (d x w x h), mm	220 x 220 x 170
Shipping Weight, kg	1.5

Model	Capacity	Electrical Requirements
CMUT1000/CE	250- 1000ml	230V 50/50Hz, 300W
CMUT1000/CEX1	250- 1000ml	115V 50/60Hz, 300W
CMUT1000/CEX6*	250- 1000ml	230V, 50/60Hz, 300W

**NOTE: Codes ending with the suffix CEX6 come with EU Plug fitting*

CMUA

Stirring Electromantles

The CMUA Stirring Electromantle shares all the excellent features of the CMU Electromantle but with the added functionality of magnetic stirring. For convenience and safety, the electric circuitry for stirring is built into the base of the heater, enabling powerful stirring over a wide range of solution volumes and viscosities using a magnetic stir bar.

Magnetic Stirring

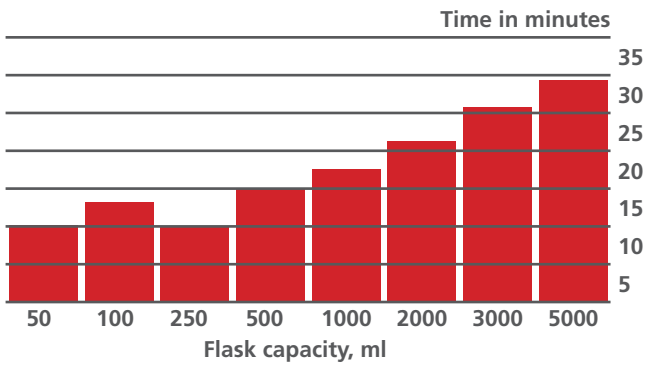
Stirring operation is simply achieved by placing the correct style and sized magnetic stir bar into the flask, selecting the minimum speed on the stirring dial control and then ramping up slowly to the required speed. The correct style and size of stir bar is determined according to the flask volume and the viscosity of its contents.

Stir speed is bi-directional and easily adjustable, and as an added feature, there is an auto-recapture switch fitted. Occasionally, the magnetic coupling to the stir bar may be interrupted and the stirring motion may be temporarily lost. Should there be a need to re-activate stirring, this can be quickly remedied by reducing the stir speed and then activating the auto-recapture switch; normal stirring can then be resumed at the desired speed.

Time required for boiling

The bar graph illustrates the time required for a half filled flask of water to reach boiling point in each of the flask capacities. For all the boiling tests the ambient temperature was 17°C.

Maximum element temp:	450°C
Voltage:	115V or 230V AC
Wattage:	Nominal wattage of each flask capacity at rated voltage



Key Features

- Round bottom flask capacity of between 50ml- 5000ml
- Stirring speed up to 2000rpm
- Auto-recapture of magnetic stir bar; simple switch to re-activate stirring
- "Cool-to-the-touch" design
- Element temperature up to 450°C
- Built-in energy regulator
- Indicator lamps for power and heater operation
- Replaceable insulated heater & stirring cartridge
- An easy to clean, powder coated aluminium outer casing
- Non-skid feet and support rod clamps
- Added safety features such as a grounded earth screen and double fuses
- Automatic cut-off if liquid is spilled to protect the user from electric shocks
- CSA approved

CMUA

CMUA
with Glassware

CMUA

Stirring Electromantles

50ml - 250ml Ordering Information

Dimensions (d x w x h), mm	175 x 175 x 150
Shipping Weight, kg	0.75

Model	Capacity	Electrical Requirements
CMUA0050/CE	50ml	230V 50/60Hz, 60W
CMUA0050/CEX1	50ml	115V 50/60Hz, 60W
CMUA0050/CEX6*	50ml	230V 50/60Hz, 60W
CMUA0100/CE	100ml	230V 50/60Hz, 75W
CMUA0100/CEX1	100ml	115V 50/60Hz, 75W
CMUA0100/CEX6*	100ml	230V 50/60Hz, 75W
CMUA0250/CE	250ml	230V 50/60Hz, 200W
CMUA0250/CEX1	250ml	115V 50/60Hz, 200W
CMUA0250/CEX6*	250ml	230V 50/60Hz, 200W

500ml - 1000ml Ordering Information

Dimensions (d x w x h), mm	220 x 220 x 170
Shipping Weight, kg	1.5

Model	Capacity	Electrical Requirements
CMUA0500/CE	500ml	230V 50/60Hz, 280W
CMUA0500/CEX1	500ml	115V 50/60Hz, 280W
CMUA0500/CEX6*	500ml	230V 50/60Hz, 280W
CMUA1000/CE	1000ml	230V 50/60Hz, 380W
CMUA1000/CEX1	1000ml	115V 50/60Hz, 380W
CMUA1000/CEX6*	1000ml	230V 50/60Hz, 380W

2000ml - 5000ml Ordering Information

Dimensions (d x w x h), mm	320 x 320 x 220
Shipping Weight, kg	2.75

Model	Capacity	Electrical Requirements
CMUA2000/CE	2000ml	230V 50/60Hz, 500W
CMUA2000/CEX1	2000ml	115V 50/60Hz, 500W
CMUA2000/CEX6*	2000ml	230V 50/60Hz, 500W
CMUA3000/CE	3000ml	230V 50/60Hz, 500W
CMUA3000/CEX1	3000ml	115V 50/60Hz, 500W
CMUA3000/CEX6*	3000ml	230V 50/60Hz, 500W
CMUA5000/CE	5000ml	230V 50/60Hz, 800W
CMUA5000/CEX1	5000ml	115V 50/60Hz, 800W
CMUA5000/CEX6*	5000ml	230V 50/60Hz, 800W

**NOTE: Codes ending with the suffix CEX6 come with EU Plug fitting*

CMUV

Stirring Electromantles

The CMUV Electromantles deliver the benefits of the CMU Electromantle, but do so for very large 60° funnels, as well as pear-shaped and round bottom flasks. This is achieved through a "V-shaped" design for the heating mantle, with funnels being accommodated through a bottom opening in the Electromantle base.

10-12 Litre Controlled CMUV Ordering Information

Dimensions (d x w x h), mm	485 x 485 x 300
Shipping Weight, kg	6

Model	Capacity	Electrical Requirements
CMUV10/CL	10L	230V 50/60Hz, 2000W
CMUV10/CLX1	10L	115V 50/60Hz, 2000W
CMUV10/CLX6*	10L	230V 50/60Hz, 2000W
CMUV12/CL	12L	230V 50/60Hz, 2000W
CMUV12/CLX1	12L	115V 50/60Hz, 2000W
CMUV12/CLX6*	12L	230V 50/60Hz, 2000W

20-22 Litre Controlled CMUV Ordering Information

Dimensions (d x w x h), mm	485 x 485 x 300
Shipping Weight, kg	8.5

Model	Capacity	Electrical Requirements
CMUV22/CL	20 to 22L	230V 50/60Hz, 3000W
CMUV22/CLX1	20 to 22L	115V 50/60Hz, 3000W
CMUV22/CLX6*	20 to 22L	230V 50/60Hz, 3000W

10-12 Litre Uncontrolled CMUV Ordering Information

Dimensions (d x w x h), mm	485 x 485 x 300
Shipping Weight, kg	6

Model	Capacity	Electrical Requirements
CMUV10/L	10L	230V 50/60Hz, 2000W
CMUV10/LX1	10L	115V 50/60Hz, 2000W
CMUV10/LX6*	10L	230V 50/60Hz, 2000W
CMUV12/L	12L	230V 50/60Hz, 2000W
CMUV12/LX1	12L	115V 50/60Hz, 2000W
CMUV12/LX6*	12L	230V 50/60Hz, 2000W

20-22 Litre Uncontrolled CMUV Ordering Information

Dimensions (d x w x h), mm	485 x 485 x 300
Shipping Weight, kg	8.5

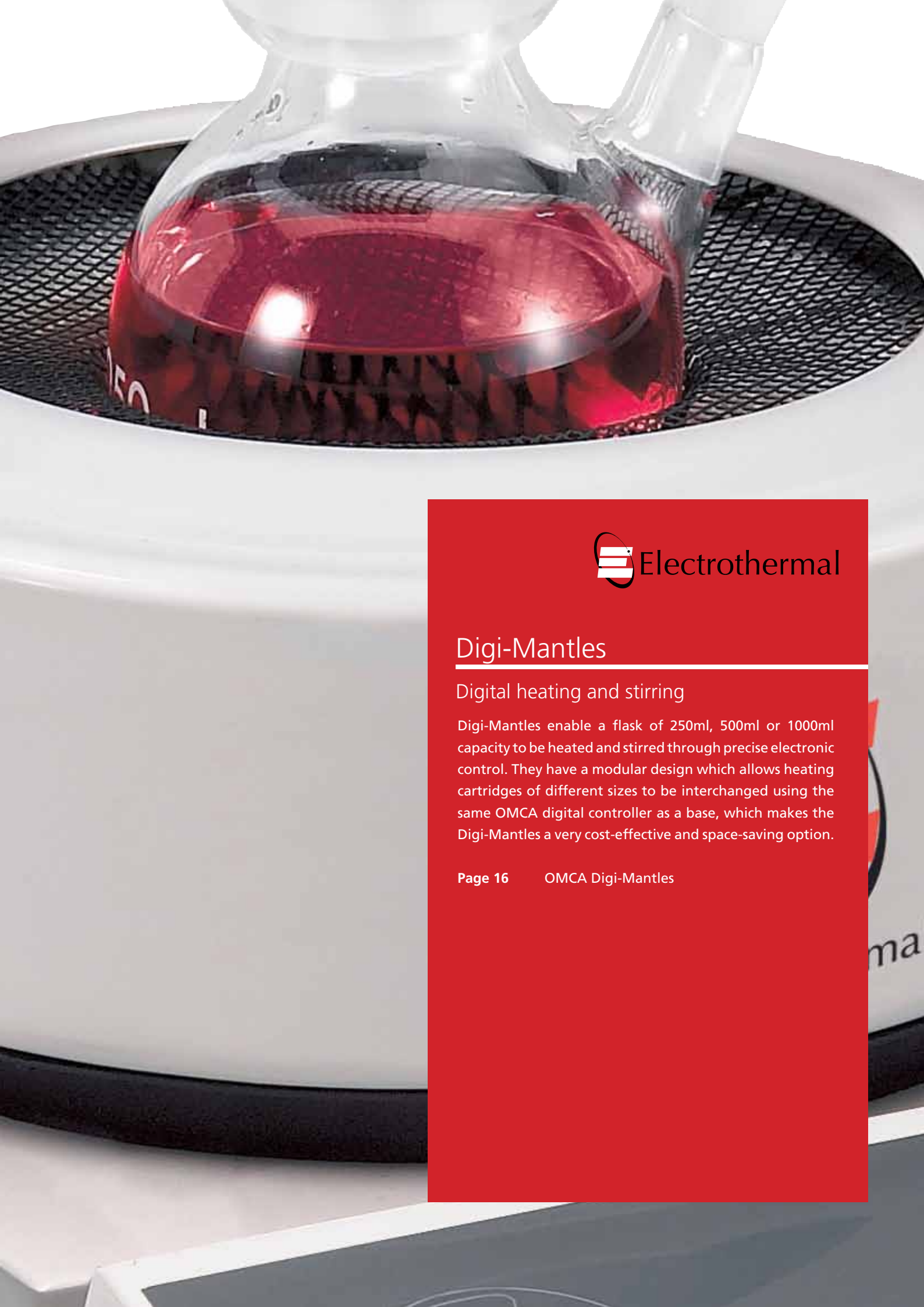
Model	Capacity	Electrical Requirements
CMUV22/L	20 to 22L	230V 50/60Hz, 3000W
CMUV22/LX1	20 to 22L	115V 50/60Hz, 3000W
CMUV22/LX6*	20 to 22L	230V 50/60Hz, 3000W

**Add X6 suffix for 230V with EU plug*

Key Features

- Accepts 60° funnels
- Accommodates pear-shaped and round bottom flasks
- Large flask/funnel capacities of between 10 to 22 litres
- Complete control of heating is provided by 3 separate electrical circuits that enable independent top, middle and bottom heating of flasks, each controlled with its own dial switch
- Spill-proof protection against electric shocks via a stainless steel screen between the flask and the heating element
- Available with and without controls
- Controller available for uncontrolled model
- "Cool-to-the-touch" design
- Element temperature up to 450°C
- Indicator lamps for power and heater operation
- Replaceable insulated heater cartridge
- An easy to clean, powder coated aluminium outer casing
- Non-skid feet and 3 support rod clamps
- Added safety features such as a grounded earth screen and double fuses
- CSA approved

CMUV



Electrothermal

Digi-Mantles

Digital heating and stirring

Digi-Mantles enable a flask of 250ml, 500ml or 1000ml capacity to be heated and stirred through precise electronic control. They have a modular design which allows heating cartridges of different sizes to be interchanged using the same OMCA digital controller as a base, which makes the Digi-Mantles a very cost-effective and space-saving option.

Page 16 OMCA Digi-Mantles

OMCA Digi-Mantle

Digital heating and stirring mantle

Digi-Mantles enable a flask of 250ml, 500ml or 1000ml capacity to be stirred and heated up to an element temperature of 450°C through precise electronic control, giving an accurate measure of temperature and stirring. The modular design allows heating cartridges of different sizes to be interchanged using the same OMCA digital controller as a base, which makes the Digi-Mantles a very cost-effective option.

Heater Cartridge

The heater cartridge ensures that the temperature is uniformly distributed across the flask. Even with the element temperature at 450°C, the outside of the heater cartridge remains "cool-to-the-touch" due to a continuous air flow through ventilation slots beneath and around the rim of the case.

The heating cartridge comes in 3 sizes for heating flasks of 250ml (OMCA0250), 500ml (OMCA0500) and 1000ml (OMCA1000) capacity.

OMCA Controller

Used to control both temperature and stirring speed independently, the OMCA digital controller has a revolutionary CTC (Capacitance Touch Control) panel, which is both easy to read and use, and you can quickly set the required temperature and stir speed using the up/down arrows. The control panel has separate indicator lights for the power, heater and stirrer functions, along with a 2 x 16 digit display indicating the actual temperature from ambient to 450°C (max element temperature). Stirring speeds from 100 to 2000rpm are obtained by lightly touching the stirrer speed keys.

Temperature Control

Heating is controlled by a modern state of the art microprocessor, which displays the heat setting as a percentage of the total power. An optional PT100 temperature probe may be used to gauge the temperature of the flask contents more accurately; the temperature probe's heating is controlled via the temperature feedback circuit and the actual temperature is displayed. The temperature probe operates up to 250°C.

Key Features

- Same OMCA controller accommodates different capacity heating cartridges, ie. interchangeable design
- Round bottom flask capacity of between 250ml - 1000ml
- "Cool-to-the-touch" design
- Greater stirring stability and speeds from 100 to 2000rpm
- Controller with display menus and touch pad interface
- Indicator lights for power, stirrer and heater operation
- Support rod clamps

OMCA

OMCA Digi-Mantle

Digital heating and stirring mantle

Improved Stirring

The OMCA digital controller and motor arrangement has recently been upgraded to allow for accurate low speed stirring control and higher stirring speeds. Uniform stirring is provided via a motorised rotating magnet assembly positioned to provide maximum flux linkage to rotate the stirrer bars in each reaction vessel.

Techincal Information

Model	Digi-Mantle 250	Digi-Mantle 500	Digi-Mantle 1000
Catalogue number	OMCA0250*	OMCA0500*	OMCA1000*
Voltage	230V & 115V	230V & 115V	230V & 115V
Flask capacity	250ml	500ml	1000ml
Controlled block temperature	Ambient	Ambient	Ambient
Temperature range	Ambient to 450°C	Ambient to 450°C	Ambient to 450°C
Stir speed range, rpm	100 - 2000	100 - 2000	100 - 2000
Dimensions (w x d x h), mm	300 x 300 x 650	300 x 300 x 650	300 x 300 x 650
Shipping Weight, kg	3.1	3.1	3.1

Ordering Information

Model	Description
OMCA*	Digi-Mantle digital controller for temperature and stirring
OMCA0250*	Digi-Mantle heating cartridge kit (250ml capacity)
OMCA0500*	Digi-Mantle heating cartridge kit (500ml capacity)
OMCA1000*	Digi-Mantle heating cartridge kit (1000ml capacity)
AZ140940	Temperature probe (thermocouple)
OM0250	Replacement 250ml Digi-Mantle heater cartridge
OM0500	Replacement 500ml Digi-Mantle heater cartridge
OM1000	Replacement 1000ml Digi-Mantle heater cartridge

**Add suffixes: X1 for 115V; X6 for 230V with EU Plug*

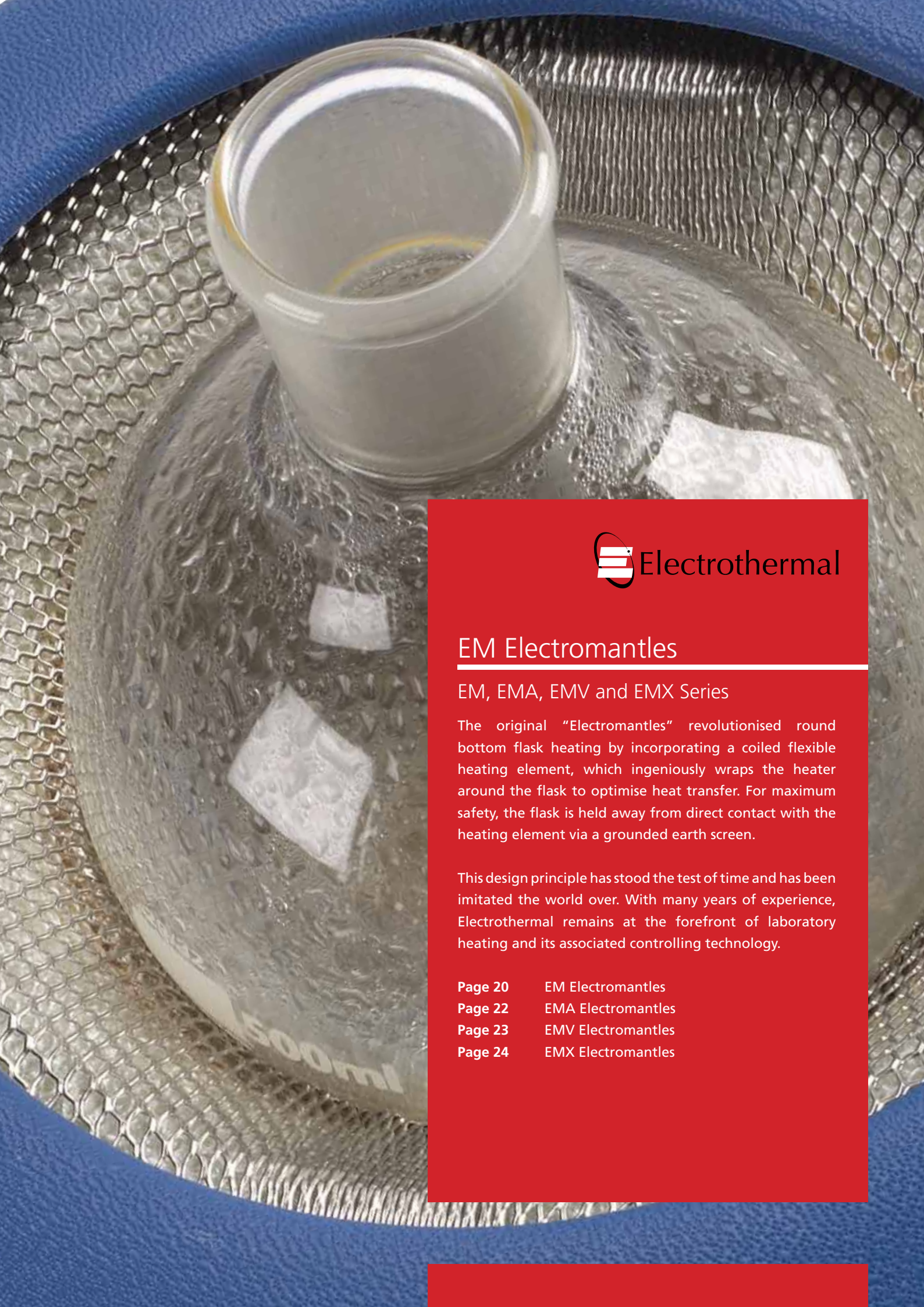
For all your heating, cooling and stirring needs

Introducing the Electrothermal range of Reaction Stations

With 70 years' experience of supplying laboratories with reliable and safe equipment, Electrothermal is a name you can trust. It is also a name that gives you results - and fast! Our STEM RS and Omni Reaction Stations can dramatically increase laboratory throughput by providing precise control of heating, cooling and stirring for between 6 to 50 vessels simultaneously, held at temperatures from -30 °C to 300 °C.

We have 9 Reaction Stations in our range to meet your needs, providing the same temperature and stirring rate at each position, so that you can directly compare the effects of varying reagent proportions and dilutions.

To make our reaction stations as useful as possible for you, we have a huge range of accessories which facilitate working under inert gas or vacuum conditions, and enable refluxing, phase separation, filtration and rotary evaporation to be carried out. In addition, more precise control of temperature and stirring can be achieved by using our temperature probes and wide selection of stir bars.



Electrothermal

EM Electromantles

EM, EMA, EMV and EMX Series

The original "Electromantles" revolutionised round bottom flask heating by incorporating a coiled flexible heating element, which ingeniously wraps the heater around the flask to optimise heat transfer. For maximum safety, the flask is held away from direct contact with the heating element via a grounded earth screen.

This design principle has stood the test of time and has been imitated the world over. With many years of experience, Electrothermal remains at the forefront of laboratory heating and its associated controlling technology.

EM Series

Heating Electromantle

The EM Electromantle series features a durable, chemically resistant, polypropylene outer housing that minimises damage from spills. They allow maximum heat transfer with minimum risk for flask breakage.

Robust and economical

Designed with simplicity, flexibility and ease of use, the EM series Electromantle is designed to be the workhorse for your heating applications. All EMs have a built-in energy regulator with indicator lamps for power and heater operation. All mantles have support rod clamps as an integral feature and incorporate a grounded earth screen and double fuses for added safety. Larger capacity products have multiple heating elements, enabling a more even and directed transfer of heat.

Key Features

- Cool-to-the-touch design
- Max element temperature 450°C
- Built-in energy regulator
- Model EME5000/CE has 2 circuits
- Replaceable insulated heater cartridge
- Indicator lamps for power and heater operation
- A chemically resistant polypropylene outer casing
- A grounded earth screen and double fuses for added safety
- Automatic cut-off if liquid is spilled to protect the user from electric shocks
- Clamps for 1.3cm diameter support

EM Series

50ml - 250ml Ordering Information

Dimensions (d x w x h), mm	260 x 175 x 127
Shipping Weight, kg	0.78

Model	Capacity	Electrical Requirements
EM0050/CE	50ml	230V 50/60Hz, 60W
EM0050/CEX1	50ml	115V 50/60Hz, 70W
EM0050/CEX6*	50ml	230V 50/60Hz, 60W
EM0100/CE	100ml	230V 50/60Hz, 60W
EM0100/CEX1	100ml	115V 50/60Hz, 70W
EM0100/CEX6*	100ml	230V 50/60Hz, 60W
EM0250/CE	250ml	230V 50/60Hz, 150W
EM0250/CEX1	250ml	115V 50/60Hz, 150W
EM0250/CEX6*	250ml	230V 50/60Hz, 150W

500ml - 1000ml Ordering Information

Dimensions (d x w x h),mm	310 x 238 x 145
Shipping Weight, kg	1.25

Model	Capacity	Electrical Requirements
EM0500/CE	500ml	230V 50/60Hz, 200W
EM0500/CEX1	500ml	115V 50/60Hz, 200W
EM0500/CEX6*	500ml	230V 50/60Hz, 200W
EM1000/CE	1000ml	230V 50/60Hz, 300W
EM1000/CEX1	1000ml	115V 50/60Hz, 300W
EM1000/CEX6*	1000ml	230V 50/60Hz, 300W

EM Series
with glassware

EM Series

Heating Electromantle

2000ml - 5000ml Ordering Information

Dimensions (d x w x h), mm	400 x 350 x 190
Shipping Weight, kg	2.58

Model	Capacity	Electrical Requirements
EM2000/CE	2000ml	230V 50/60Hz, 500W
EM2000/CEX1	2000ml	115V 50/60Hz, 500W
EM2000/CEX6*	2000ml	230V 50/60Hz, 500W
EM3000/CE	3000ml	230V 50/60Hz, 500W
EM3000/CEX1	3000ml	115V 50/60Hz, 500W
EM3000/CEX6*	3000ml	230V 50/60Hz, 500W
EM5000/CE	5000ml	230V 50/60Hz, 800W
EM5000/CEX1	5000ml	115V 50/60Hz, 800W
EM5000/CEX6*	5000ml	230V 50/60Hz, 800W

**Comes with EU Plug fitting*

EMA Series

Heating and Stirring Electromantle

The EMA Electromantle shares all the standard features of the standard EM but has the added functionality of magnetic stirring. The solid state stirring circuitry is built into the base of the main housing and provides powerful stirring over a range of capacities and viscosities. The stir speed is easily adjusted and is bi-directional. The stir bar is seldom lost due to our "auto-recapture" function.

Magnetic Stirring

The EMA stirring Electromantle has the added functionality of solution stirring which widens the range of applications. Stirring operation is simply achieved by placing the correct size bar into the flask, turning the stir control to the minimum speed and ramping up slowly. If the magnetic coupling to the stir bar is lost for any reason, the speed control should be reduced slightly and the auto-recapture switch can be activiated.

50ml - 250ml Ordering Information

Dimensions (d x w x h), mm	260 x 175 x 133
Shipping Weight, kg	1.73

Model	Capacity	Electrical Requirements
EMA0050/CE	50ml	230V 50/60Hz, 80W
EMA0050/CEX1	50ml	115V 50/60Hz, 96W
EMA0050/CEX6*	50ml	230V 50/60Hz, 80W
EMA0100/CE	100ml	230V 50/60Hz, 80W
EMA0100/CEX1	100ml	115V 50/60Hz, 96W
EMA0100/CEX6*	100ml	230V 50/60Hz, 80W
EMA0250/CE	250ml	230V 50/60Hz, 170W
EMA0250/CEX1	250ml	115V 50/60Hz, 210W
EMA0250/CEX6*	250ml	230V 50/60Hz, 170W

500ml - 1000ml Ordering Information

Dimensions (d x w x h), mm	310 x 238 x 157
Shipping Weight, kg	2.75

Model	Capacity	Electrical Requirements
EMA0500/CE	500ml	230V 50/60Hz, 220W
EMA0500/CEX1	500ml	115V 50/60Hz, 270W
EMA0500/CEX6*	500ml	230V 50/60Hz, 220W
EMA1000/CE	1000ml	230V 50/60Hz, 320W
EMA1000/CEX1	1000ml	115V 50/60Hz, 400W
EMA1000/CEX6*	1000ml	230V 50/60Hz, 320W

2000ml Ordering Information

Dimensions (d x w x h), mm	400 x 350 x 197
Shipping Weight, kg	5.68

Model	Capacity	Electrical Requirements
EMA2000/CE	2000ml	230V 50/60Hz, 520W
EMA2000/CEX1	2000ml	115V 50/60Hz, 670W
EMA2000/CEX6*	2000ml	230V 50/60Hz, 520W

**Comes with EU Plug fitting*

Key Features

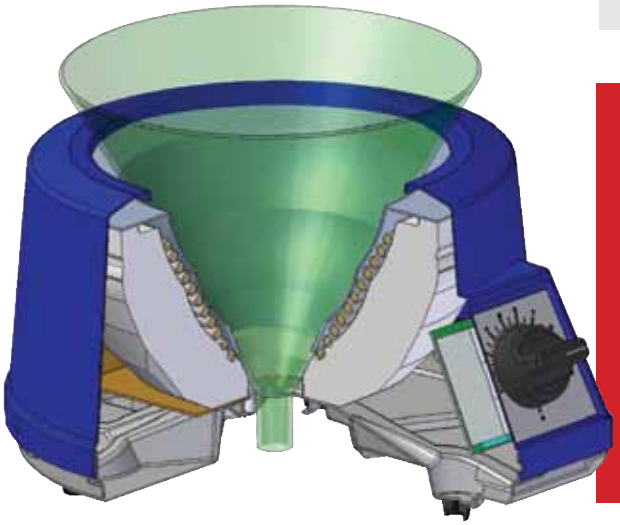
- Accepts flasks from 50ml to 2 litre capacity
- Bi-directional stirring speeds up to 520rpm
- Stir bar "auto-recapture" function
- 'Cool-to-the-touch' design
- Element temperature 450°C
- Built-in energy regulator
- Replaceable insulated heater cartridge
- A chemically resistant polypropylene outer casing
- A grounded earth screen and double fuses for added safety
- Automatic cut-off if liquid is spilled to protect the user from electric shocks

EMA Series

Key Features

- Bottom opening accommodates round bottom & pear-shaped flasks and 60° funnels
- Capacity between 10ml to 5 litres
- Coiled heating element, suspended within a thermal insulating cartridge, provides maximum heat transfer and support
- Cool-to-the-touch design
- Max element temperature of 450°C
- Built-in energy regulator
- Replaceable insulated heater cartridge
- Indicator lamps for power and heater operation
- A chemically resistant polypropylene outer casing
- A grounded earth screen and double fuses for added safety

EMV Series



EMV Series

V-Shaped Electromantle

Spill-proof Mantles and V-Shaped Mantles may accommodate 60° funnels, pear-shaped or round-bottom flasks. They have been designed to accept a large range of flask and funnel sizes for added flexibility.

Stainless steel screen on all EMV models covers the heater element to protect you from shock hazards due to spills or flask breakage.

10ml - 50ml Ordering Information

Dimensions (d x w x h), mm	260 x 175 x 127
Shipping Weight, kg	0.78

Model	Capacity	Electrical Requirements
EMV0050/CE	10 to 50ml	230V 50/60Hz, 60W
EMV0050/CEX1	10 to 50ml	115V 50/60Hz, 70W
EMV0050/CEX6*	10 to 50ml	230V 50/60Hz, 60W
EMV0250/CE	100 to 250ml	230V 50/60Hz, 150W
EMV0250/CEX1	100 to 250ml	115V 50/60Hz, 150W
EMV0250/CEX6*	100 to 250ml	230V 50/60Hz, 150W

500ml - 1000ml Ordering Information

Dimensions (d x w x h), mm	310 x 238 x 145
Shipping Weight, kg	2.76

Model	Capacity	Electrical Requirements
EMV1000/CE	500 to 1000ml	230V 50/60Hz, 300W
EMV1000/CEX1	500 to 1000ml	115V 50/60Hz, 300W
EMV1000/CEX6*	500 to 1000ml	230V 50/60Hz, 300W

2000ml - 5000ml Ordering Information

Dimensions (d x w x h), mm	400 x 350 x 190
Shipping Weight, kg	5.96

Model	Capacity	Electrical Requirements
EMV5000/CE	2000 to 5000ml	230V 50/60Hz, 800W
EMV5000/CEX1	2000 to 5000ml	115V 50/60Hz, 800W
EMV5000/CEX6*	2000 to 5000ml	230V 50/60Hz, 800W

**Comes with EU Plug fitting*

EMX Series

Spill-proof Electromantle

Spill-proof Mantles and V-Shaped Mantles may accommodate 60° funnels, pear-shaped or round-bottom flasks. They have been designed to accept a large range of flask and funnel sizes for added flexibility.

A stainless steel liner on all EMX models provides extra electrical and mechanical protection against spills and ensures easy cleaning.

500ml - 1000ml Ordering Information

Dimensions (d x w x h), mm	310 x 238 x 145
Shipping Weight, kg	2.76

Model	Capacity	Electrical Requirements
EMX1000/CE	500 to 1000ml	230V 50/60Hz, 245W
EMX1000/CEX1	500 to 1000ml	115V 50/60Hz, 240W
EMX1000/CEX6*	500 to 1000ml	230V 50/60Hz, 245W

2000ml - 5000ml Ordering Information

Dimensions (d x w x h), mm	400 x 350 x 190
Shipping Weight, kg	5.96

Model	Capacity	Electrical Requirements
EMX5000/CE	2000 to 5000ml	230V 50/60Hz, 600W
EMX5000/CEX1	2000 to 5000ml	115V 50/60Hz, 600W
EMX5000/CEX6*	2000 to 5000ml	230V 50/60Hz, 600W

**Comes with EU Plug fitting*

Key Features

- Bottom opening accommodates round bottom & pear-shaped flasks and 60° funnels
- Capacity between 500ml to 5 litres
- Coiled heating element, suspended within a thermal insulating cartridge, provides maximum heat transfer and support
- Cool-to-the-touch design
- Max element temperature of 450°C
- Built-in energy regulator
- Replaceable insulated heater cartridge
- Indicator lamps for power and heater operation
- A chemically resistant polypropylene outer casing
- A grounded earth liner and double fuses for added safety

EMX Series

Electrothermal

Multi (Extraction) Mantles

EME 3. EMEA 3, EME 6 and EMEA 6 Series

The EME & EMEA Multi (Extraction) Mantles are designed to heat between 3 & 6 round bottom flasks simultaneously. They are often used for extraction, but may be used wherever heating of multiple flasks is required.

EME3 and EMEA3 Series

3 Recess Multi-Mantles

The Multi-Mantle with three recesses has a built-in electronic controller and offers a choice of heater only (EME3) or heater/stirrer (EMEA3) combination models. The vented case's unique air flow ensures that the case remains "cool-to-touch".

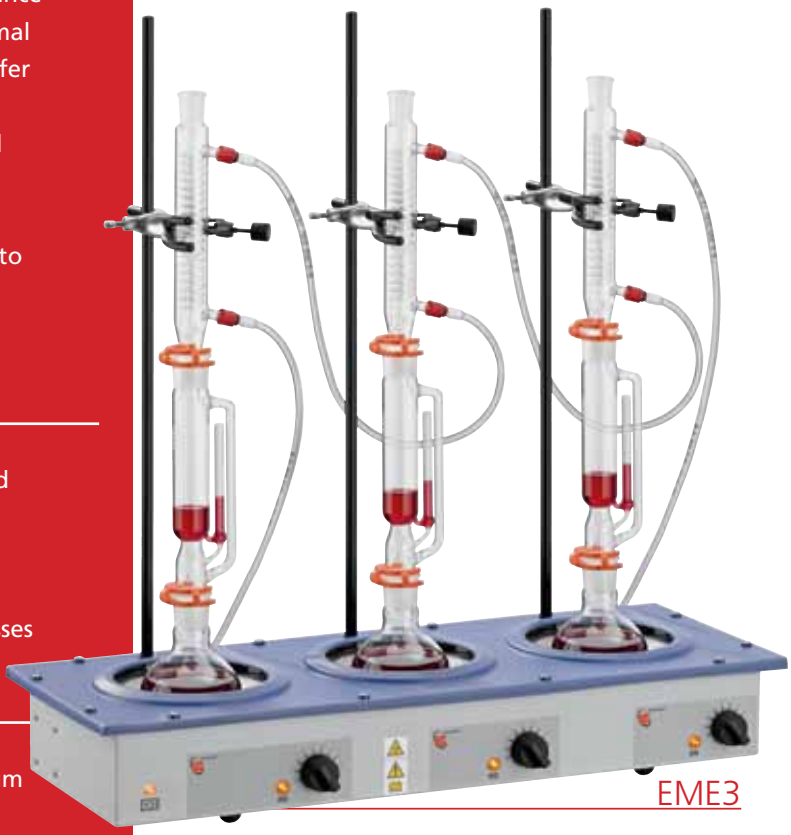
For both heater only and heater/stirrer models

- Individual built-in solid state electronic controls enable easy regulation of the heater, while removing sparking associated with mechanical switching
- 3 x 12.7mm diameter support rods are included
- Round bottom flask capacity from 100ml to 1000ml at all 3 positions
- Top cover is polypropylene and external surfaces are powder coated giving good general chemical resistance
- Coiled heating element is suspended within a thermal insulating cartridge to provide maximum heat transfer and support.
- Earth (ground) screen encloses the heater for added safety
- Individual heater cartridges are replaceable
- Pilot lights indicate when power is on and supplied to heaters and supplied to stirrers

EMEA3

Additionally for heater/stirrer EMEA3 models

- Heater/stirrer model allows the solution to be stirred and heated simultaneously
- Stirrer models provide a choice of stirring speeds of between 50 to 1000rpm
- One stirring control operates each set of three recesses



EME3

Technical Specification

Material	Polypropylene top on powder-coated aluminium
Max element temperature	450°C

Ordering Information

Heater models

Model	No. of Recesses	Flask Capacity	Electrical Requirements	Dimensions (d x w x h), mm	Shipping Weight
EME3 0100/CE	3	3 x 100ml	230V 50/60Hz, 180W	260 x 630 x 90	6.2kg
EME3 0100/CEX1	3	3 x 100ml	115V 50/60Hz, 210W	260 x 630 x 90	6.2kg
EME3 0100/CEX6	3	3 x 100ml	230V 50/60Hz, 180W, EU Plug	260 x 630 x 90	6.2kg
EME3 0250/CE	3	3 x 250ml	230V 50/60Hz, 450W	260 x 630 x 90	6.2kg
EME3 0250/CEX1	3	3 x 250ml	115V 50/60Hz, 450W	260 x 630 x 90	6.2kg
EME3 0250/CEX6	3	3 x 250ml	230V 50/60Hz, 450W, EU Plug	260 x 630 x 90	6.2kg
EME3 0500/CE	3	3 x 500ml	230V 50/60Hz, 600W	260 x 630 x 90	7.4kg
EME3 0500/CEX1	3	3 x 500ml	115V 50/60Hz, 600W	260 x 630 x 90	7.4kg
EME3 0500/CEX6	3	3 x 500ml	230V 50/60Hz, 600W, EU Plug	260 x 630 x 90	7.4kg
EME3 1000/CE	3	3 x 1000ml	230V 50/60Hz, 900W	260 x 630 x 90	7.4kg
EME3 1000/CEX1	3	3 x 1000ml	115V 50/60Hz, 900W	260 x 630 x 90	7.4kg
EME3 1000/CEX6	3	3 x 1000ml	230V 50/60Hz, 900W, EU Plug	260 x 630 x 90	7.4kg

Ordering Information

Heater/Stirrer models

Model	No. of Recesses	Flask Capacity	Electrical Requirements	Dimensions (d x w x h), mm	Shipping Weight
EMEA3 0100/CE	3	3 x 100ml	230V 50/60Hz, 220W	260 x 630 x 90	6.2kg
EMEA3 0100/CEX1	3	3 x 100ml	115V 50/60Hz, 220W	260 x 630 x 90	6.2kg
EMEA3 0100/CEX6	3	3 x 100ml	230V 50/60Hz, 220W, EU Plug	260 x 630 x 90	6.2kg
EMEA3 0250/CE	3	3 x 250ml	230V 50/60Hz, 490W	260 x 630 x 90	6.2kg
EMEA3 0250/CEX1	3	3 x 250ml	115V 50/60Hz, 490W	260 x 630 x 90	6.2kg
EMEA3 0250/CEX6	3	3 x 250ml	230V 50/60Hz, 490W, EU Plug	260 x 630 x 90	6.2kg
EMEA3 0500/CE	3	3 x 500ml	230V 50/60Hz, 640W	260 x 630 x 90	7.4kg
EMEA3 0500/CEX1	3	3 x 500ml	115V 50/60Hz, 640W	260 x 630 x 90	7.4kg
EMEA3 0500/CEX6	3	3 x 500ml	230V 50/60Hz, 640W, EU Plug	260 x 630 x 90	7.4kg
EMEA3 1000/CE	3	3 x 1000ml	230V 50/60Hz, 940W	260 x 630 x 90	7.4kg
EMEA3 1000/CEX1	3	3 x 1000ml	115V 50/60Hz, 940W	260 x 630 x 90	7.4kg
EMEA3 1000/CEX6	3	3 x 1000ml	230V 50/60Hz, 940W, EU Plug	260 x 630 x 90	7.4kg

EME6 and EMEA6 Series

6 Recess Multi-Mantles

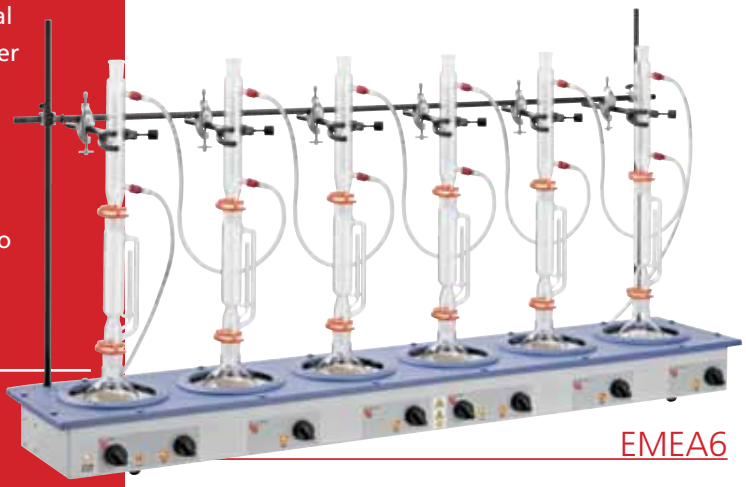
The Multi-Mantle with 6 recesses has a built-in electronic controller and offers a choice of heater only (EME6) or heater/stirrer (EMEA6) combination models.

The vented case's unique air flow ensures that the case remains "cool-to-touch".

EME6

For both heater only & heater/stirrer models

- Individual built-in solid state electronic controls enable easy regulation of heater, while removing sparking associated with mechanical switching
- 3 x 12.7mm diameter support rods are included
- Round bottom flask capacity from 100ml to 1000ml at all 6 positions
- Top cover is polypropylene and external surfaces are powder coated giving good general chemical resisitance
- Coiled heating element is suspended within a thermal insulating cartridge to provide maximum heat transfer and support
- Earth (ground) screen encloses the heater for added safety
- Individual heater cartridges are replaceable
- Pilot lights indicate when power is on and supplied to heaters and supplied to stirrers



EMEA6

Additionally for heater/stirrer EMEA6 models

- Heater/stirrer model allows the solution to be stirred and heated simultaneously
- Includes a choice of stirring speeds of between 50 to 1000rpm
- One stirring control operates each set of six recesses

Technical Specification

Material	Polypropylene top on powder-coated aluminium
Max element temperature	450°C

Ordering Information

Heater models

Model	No. of Recesses	Flask Capacity	Electrical Requirements	Dimensions (d x w x h), mm	Shipping Weight
EME6 0100/CE	6	6 x 100ml	230V 50/60Hz, 420W	260 x 1200 x 90	10.1kg
EME6 0100/CEX1	6	6 x 100ml	115V 50/60Hz, 360W	260 x 1200 x 90	10.1kg
EME6 0100/CEX6	6	6 x 100ml	230V 50/60Hz, 420W, EU Plug	260 x 1200 x 90	10.1kg
EME6 0250/CE	6	6 x 250ml	230V 50/60Hz, 900W	260 x 1200 x 90	10.1kg
EME6 0250/CEX1	6	6 x 250ml	115V 50/60Hz, 900W	260 x 1200 x 90	10.1kg
EME6 0250/CEX6	6	6 x 250ml	230V 50/60Hz, 900W, EU Plug	260 x 1200 x 90	10.1kg
EME6 0500/CE	6	6 x 500ml	230V 50/60Hz, 1200W	260 x 1200 x 90	12.5kg
EME6 0500/CEX1	6	6 x 500ml	115V 50/60Hz, 1200W	260 x 1200 x 90	12.5kg
EME6 0500/CEX6	6	6 x 500ml	230V 50/60Hz, 1200W, EU Plug	260 x 1200 x 90	12.5kg
EME6 1000/CE	6	6 x 1000ml	230V 50/60Hz, 1800W	260 x 1200 x 90	12.5kg
EME6 1000/CEX1	6	6 x 1000ml	115V 50/60Hz, 1800W	260 x 1200 x 90	12.5kg
EME6 1000/CEX6	6	6 x 1000ml	230V 50/60Hz, 1800W, EU Plug	260 x 1200 x 90	12.5kg

Ordering Information

Heater/Stirrer models

Model	No. of Recesses	Flask Capacity	Electrical Requirements	Dimensions (d x w x h), mm	Shipping Weight
EMEA6 0100/CE	6	6 x 100ml	230V 50/60Hz, 500W	260 x 1200 x 90	10.1kg
EMEA6 0100/CEX1	6	6 x 100ml	115V 50/60Hz, 440W	260 x 1200 x 90	10.1kg
EMEA6 0100/CEX6	6	6 x 100ml	230V 50/60Hz, 500W, EU Plug	260 x 1200 x 90	10.1kg
EMEA6 0250/CE	6	6 x 250ml	230V 50/60Hz, 980W	260 x 1200 x 90	10.1kg
EMEA6 0250/CEX1	6	6 x 250ml	115V 50/60Hz, 9800W	260 x 1200 x 90	10.1kg
EMEA6 0250/CEX6	6	6 x 250ml	230V 50/60Hz, 980W, EU Plug	260 x 1200 x 90	10.1kg
EMEA6 0500/CE	6	6 x 500ml	230V 50/60Hz, 1280W	260 x 1200 x 90	12.5kg
EMEA6 0500/CEX1	6	6 x 500ml	115V 50/60Hz, 1280W	260 x 1200 x 90	12.5kg
EMEA6 0500/CEX6	6	6 x 500ml	230V 50/60Hz, 1280W, EU Plug	260 x 1200 x 90	12.5kg
EMEA6 1000/CE	6	6 x 1000ml	230V 50/60Hz, 1880W	260 x 1200 x 90	12.5kg
EMEA6 1000/CEX1	6	6 x 1000ml	115V 50/60Hz, 1880W	260 x 1200 x 90	12.5kg
EMEA6 1000/CEX6	6	6 x 1000ml	230V 50/60Hz, 1880W, EU Plug	260 x 1200 x 90	12.5kg

STEM Integrity 10:

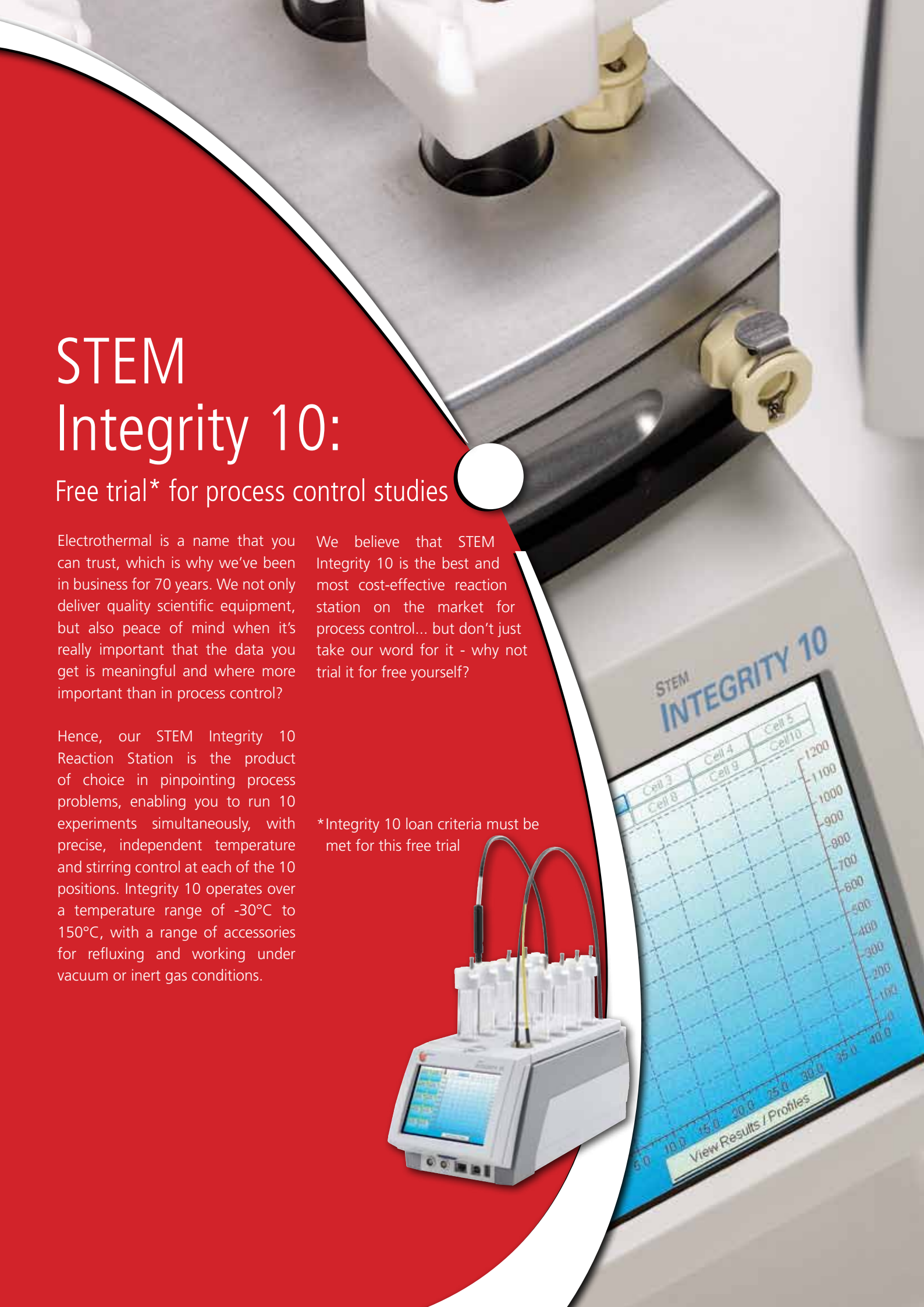
Free trial* for process control studies

Electrothermal is a name that you can trust, which is why we've been in business for 70 years. We not only deliver quality scientific equipment, but also peace of mind when it's really important that the data you get is meaningful and where more important than in process control?

Hence, our STEM Integrity 10 Reaction Station is the product of choice in pinpointing process problems, enabling you to run 10 experiments simultaneously, with precise, independent temperature and stirring control at each of the 10 positions. Integrity 10 operates over a temperature range of -30°C to 150°C, with a range of accessories for refluxing and working under vacuum or inert gas conditions.

We believe that STEM Integrity 10 is the best and most cost-effective reaction station on the market for process control... but don't just take our word for it - why not trial it for free yourself?

*Integrity 10 loan criteria must be met for this free trial



Electrothermal

Electric Bunsen

The Modern Bunsen Burner

Electrothermal's Electric Bunsen combines the advantages of a regular gas burner with the clean, easy operation of our Electromantles. Radiation from the heater is directed upwards to a focal point. The Electric Bunsen is ideal for heating test tubes, crucibles, small flasks and beakers, regardless of their shape.

Page 32 Electric Bunsen

BA6101

Electric Bunsen Mantles

Electrothermal's Electric Bunsen, combines the advantages of a regular gas burner with the clean, easy operation of our Electromantles. It is corrosion-resistant and has a cool-to-the-touch base.

Radiation from the heater is directed upwards to a focal point. The Electric Bunsen is ideal for heating test tubes, crucibles, small flasks and beakers, regardless of their shape.

Technical Specification

Flask capacity	25ml
Material	Stainless-steel
Max temperature range	800°C to 1000°C
Shipping weight, kg	0.5
Dimensions (d x h), mm	120 x177

Key Features

- Conical shaped heating element directs radiant heat to the top cavity
- Top cowl deflects heat away from your hand
- Air circulation from the vented housing keeps the base cool enough to hold during operation
- Burner consumes only 400W of power
- Recommended controller is the MC5

BA6101

with MC5 Electric Bunsen Controller

Ordering Information

Without Controller	Electrical requirements
BA6101	230V 50/60Hz, 480W
BA6101X1	115V 50/60Hz, 430W
BA6101X2	100V 50/60Hz, 480W
BA6101X3	90V 50/60Hz, 430W
BA6101X6	230V 50/60Hz, 480W, EU Plug
With Controller	**Electrical requirements**
BA6101/C	230V 50/60Hz, 480W
BA6101/CX1	115V 50/60Hz, 430W
BA6101/CX6	230V 50/60Hz, 480W EU Plug

MC5

Electric Bunsen Controller

The MC5 Controller has been designed to provide a comprehensive answer to control the heating of resistive loads such as Electric Bunsens, Electromantles, Heating Tapes and Cords for bench top operation delivering up to a maximum of 800 Watts. A rod support clamp is provided at the rear of the controller to take a standard 12.5mm diameter rod. An accessory extension mains lead is available where remote operation is required e.g. in a fume extraction unit.

Ordering Information

Model	Electrical requirements
MC5	230V, 50/60Hz, 800W
MC5X1	115V, 50/60Hz, 460W
MC5X6	230V, 50/60Hz, 800W, EU Plug

Electrothermal

Kjeldahl Equipment

For food analysis

The Macro & Micro-Kjeldahl equipment consists of multi-mantles with 2 or 6 positions which heat to an ultra-high temperature. Both can be used for the Kjeldahl analysis to determine protein content in food.

MQ Series

Macro-Kjeldahl Equipment

The Electrothermal MQ Series of Macro-Kjeldahl Equipment has been designed for Kjeldahl extraction on a macro scale.

These multibank units with either 2 or 6 recesses, have a stainless steel outer casing with back-mounted brackets (supplied with each unit), which can hold support rods of 12.7mm diameter max. There are 2 volume sizes available for both the 2 and 6 recess models, one for 100-300ml vessels and the second for 500-800ml vessels.

Each heating mantle has its own energy regulator incorporating an On/Off switch and a "Mains to Heater" amber neon indicator. There is also a "Mains On" clear neon indicator on the front panel.

The lower part of the unit houses dedicated controllers for each recess. This "cool zone" housing is separated from the heating element by a stainless steel screen and a well-ventilated air space. The heating element consists of thermally insulated element wire stitched into a cartridge, and operates in the temperature range of 550°C to 800°C max.

All MQ Macro-Kjeldahl Equipment models incorporate an earth screen to protect the user from electric shocks and are double-fused for extra safety. The rugged stainless steel outer casing is durable and easy to clean.

Technical Specification

Heating element temp	550°C - 800°C maximum
Case material	Stainless steel
Thermal insulation	Ceramic fibre/mineral wool
Clamps for support rods	Fitted with adjustable clamps to accept the standard arms supplied
Wells capacity, ml	100-300
Wells dimensions, mm	89 x 45 (diameter x depth)
Wells capacity, ml	500-800
Wells dimensions, mm	117 x 59 (diameter x depth)

Key Features

- Rugged, easy to clean stainless steel construction
- Back-mounted brackets hold flask support rods (supplied with each unit)
- Choice of 2 or 6 positions
- Choice of 2 flask capacity sizes: 100 - 300ml and 500 - 800ml for both the 2 & 6 position models
- Dedicated controllers for each recess are housed in a "cool zone"
- Grounded stainless steel earth screen covering the heating element.
- Units are double fused for added safety (except for MQ3868B which is only available as the 230V model)

MQ3822B/E

Micro-Kjeldahl Equipment

Key Features

- Rugged, easy to clean stainless steel construction
- Back-mounted brackets hold flask support rods (supplied with each unit)
- 6 positions which can accommodate flasks of between 18ml - 50ml capacity
- Dedicated controllers for each recess are housed in a "cool zone"
- Grounded stainless steel earth screen covering the heating element
- Units are double fused for added safety

The Electrothermal Micro-Kjeldahl Equipment has been designed for Kjeldahl extraction on a micro scale.

These multibank units have 6 recesses in a stainless steel outer casing with back-mounted brackets (supplied with each unit), which can hold support rods of 12.7mm diameter max. This 6 recess model accommodates flasks of between 18-50ml only.

Each heating position has its own energy regulator incorporating an On/Off switch and a "Mains to Heater" amber neon indicator. There is also a "Mains On" clear neon indicator on the front panel.

The lower part of the unit houses dedicated controllers for each recess. This "cool zone" housing is separated from the heating element by a stainless steel screen and a well-ventilated air space. The heating element consists of thermally insulated element wire stitched into a cartridge, and operates in the temperature range of 550°C to 800°C max.

The MQ Micro-Kjeldahl Equipment models incorporate an earth screen to protect the user from electric shocks and are double-fused for extra safety.

The rugged stainless steel outer casing is durable and easy to clean.

MM2313/E

Technical Specification

Heating element temp	550°C - 800°C maximum
Case material	Stainless steel
Thermal insulation	Ceramic fibre/mineral wool
Clamps for support rods	Fitted with adjustable clamps to accept the standard arms supplied
Wells capacity, ml	18-50ml

Ordering Information

Macro-Kjeldahl Extraction Heaters

Model	No of Recesses	Capacity (ml)	Operating Temperature	Electrical Requirements	Dimensions (d x w x h), mm	Weight (kg)
MQ3822B/E	2	100 to 300ml	550°C - 800°C	230V 50/60Hz, 600W	260 x 320 x 165	2kg
MQ3822B/EX1	2	100 to 300ml	550°C - 800°C	115V 50/60Hz, 600W	260 x 320 x 165	2kg
MQ3822B/EX6*	2	100 to 300ml	550°C - 800°C	230V 50/60Hz, 600W	260 x 320 x 165	2kg
MQ3824B/E	2	500 to 800ml	550°C - 800°C	230V 50/60Hz, 1100W	260 x 320 x 165	2kg
MQ3824B/EX1	2	500 to 800ml	550°C - 800°C	115V 50/60Hz, 1100W	260 x 320 x 165	2kg
MQ3824B/EX6*	2	500 to 800ml	550°C - 800°C	230V 50/60Hz, 1100W	260 x 320 x 165	2kg
MQ3866B/E	6	100 to 300ml	550°C - 800°C	230V 50/60Hz, 1800W	260 x 970 x 165	5.8kg
MQ3866B/EX1	6	100 to 300ml	550°C - 800°C	115V 50/60Hz, 1800W	260 x 970 x 165	5.8kg
MQ3866B/EX6*	6	100 to 300ml	550°C - 800°C	230V 50/60Hz, 1800W	260 x 970 x 165	5.8kg
MQ3868B/E**	6	500 to 800ml	550°C - 800°C	230V 50/60Hz, 3300W	260 x 970 x 165	5.8kg

Ordering Information

Micro-Kjeldahl Extraction Heaters

Model	No of Recesses	Capacity	Operating Temperature	Electrical Requirements	Dimensions (d x w x h), mm	Weight (kg)
MM2313/E	6	18 to 50ml	550°C - 800°C	230V 50/60Hz, 600W	160 x 520 x 162	3.5kg
MM2313/EX1	6	18 to 50ml	550°C - 800°C	115V 50/60Hz, 600W	160 x 520 x 162	3.5kg
MM2313/EX6	6	18 to 50ml	550°C - 800°C	230V 50/60Hz, 600W	160 x 520 x 162	3.5kg

**NOTE: Codes ending with the suffix EX6 come with EU Plug fitting*
***NOTE: Wired in directly and are not double-fused*

Kjeldahl Method for Protein Content

The method consists of heating a substance with sulphuric acid, which decomposes the organic substance by oxidation to liberate the reduced nitrogen as ammonium sulphate. In this step potassium sulphate is added to increase the boiling point of the medium (from 169°C to 189°C). Chemical decomposition of the sample is complete when the medium has become clear and colourless (initially very dark).

The solution is then distilled with sodium hydroxide (added in small quantities) which converts the ammonium salt to ammonia. The amount of ammonia present (hence the amount of nitrogen present in the sample) is determined by back titration. The end of the condenser is dipped into a solution of boric acid. The ammonia reacts with the acid and the remainder of the acid is then titrated with a sodium carbonate solution with a methyl orange pH indicator.

Degradation: Sample + H_2SO_4 --> $(NH4)_2SO_4$ + CO_2 + SO_2 + H_2O

Liberation of ammonia: $(NH_4)_2SO_4$ + 2NaOH --> Na_2SO_4 + $2H_2O$ + $2NH_3$

Capture of ammonia: $B(OH)_3$ + H_2O + NH_3 --> NH_4^+ $B(OH)_4^-$

Back-titration: $B(OH)_3$ + H_2O + Na_2CO_3 --> $NaHCO_3$ + $NaB(OH)_4$ + CO_2 + H_2O

The Kjeldahl method's universality, precision and reproducibility have made it the internationally-recognized method for estimating the protein content in foods and it is the accepted standard method.

Electrothermal

Heating Cords & Tapes

HT & HC Series for surface heating

The HT and HC series of Heating Tapes and Cords are a range of flexible resistance heater elements for use in a wide range of commercial/industrial surface heating applications. Once the Heating Tape /Cord has been installed around the item to be kept at an elevated temperature, it is recommended that it is connected to one of Electrothermal's MC controllers.

HC1

Glass fibre cords

HC1 Glass Fibre Cords are ideal for indoor use for dry metal and glassware applications which require observation; they are especially suited to high temperature, high wattage applications.

HC1 Glass Fibre Cords have an element wound on a glass fibre core and covered in braided glass fibre outer sheath. They are available in different lengths to accommodate a broad range of temperatures up to 450°C. As with all the tapes and cords, the use of an energy or temperature controller is recommended.

Ordering Information

Model	Length, mm	Electrical Requirements
HC101	305	230V, 60W
HC101X1	305	115V, 60W
HC102	610	230V, 120W
HC102X1	610	115V, 120W
HC103	1220	230V, 240W
HC103X1	1220	115V, 240W
HC104	2440	230V, 480W
HC104X1	2440	115V, 480W
HC105	4880	230V, 960W
HC105X1	4880	115V, 960W
HC106	9760	230V, 1920W

Please note: Outside diameter approx. 5mm

Key Features

- For high wattage applications
- Operational temperature range up to 450°C
- Cord is spiralled around the tube being heated to give a surface loading power concentration up to 4W/cm²
- Linear loading: 195W/m (60W/ft)
- Available in different lengths from 1 foot (30.5cm) to 32 feet (976cm)
- Insulated unheated flexible lead at each end (122cm)
- Approximate outside diameter of 5mm
- All models have dual voltage choice of 115V and 230V (except for the HC106 model which is available as 230V only)
- For use in dry conditions only
- Use of MC227 Single output controller, MC228 2-Way output controller or MC810B Digital controller is recommended

HC1

HT7 and HT9 Series

Glass Fibre Tapes

Key Features

Key features of both the HT7 and HT9 series Glass Fibre Tapes

- Operational temperature range up to 450°C
- Cord is spiralled around the tube being heated to give a surface loading power concentration up to 0.62W/cm² (4W/in²)
- Linear loading: 164W/m (50W/ft)
- Available in different lengths from 2 feet (61cm) to 32 feet (976cm)
- Insulated unheated flexible lead at each end of 3.5in (9cm)
- Approximate width of 25mm
- All models have dual voltage choice of 115V and 230V (except for the HT75524, HT75532, HT95524 and HT95532 models which are available as 230V only)
- For use in dry conditions only
- Use of MC227 Single output controller, MC228 2-Way output controller or MC810B Digital controller is recommended

HT7 and HT9 Glass Fibre Tapes are flexible heaters that are ideal for heating columns, pipes, valves and transfer lines, especially when these applications need to be observed.They can be applied to metal pipes as well as glassware.

Both HT7 and HT9 Series Glass Fibre Tapes have an element wound on a glass fibre core and covered in braided glass fibre outer sheath; the HT9 series additionally has a braided earth (ground) wire beneath the outer sheath.

They are available in different lengths to accommodate a broad range of temperatures with a maximum element temperature of up to 450°C. As with all the tapes and cords, the use of an energy or temperature controller is recommended.

HT7 and HT9

Ordering Information

Model	Length, mm	Electrical Requirements
HT75502	610	115 or 230V, 100W
HT95502	610	115 or 230V, 100W
HT75503	910	115 or 230V, 150W
HT95503	910	115 or 230V, 150W
HT75504	1220	115 or 230V, 200W
HT95504	1220	115 or 230V, 200W
HT75506	1830	115 or 230V, 300W
HT95506	1830	115 or 230V, 300W
HT75508	2440	115 or 230V, 400W
HT95508	2440	115 or 230V, 400W
HT75512	3660	115 or 230V, 600W
HT95512	3660	115 or 230V, 600W
HT75516	4880	115 or 230V, 800W
HT95516	4880	115 or 230V, 800W
HT75524	7320	230V, 1200W
HT95524	7320	230V, 1200W
HT75532	9760	230V, 1600W
HT95532	9760	230V, 1600W

Please note: standard width 25mm

HC5

Quartz fibre cords

HC5 Quartz Fibre Cords are ideal for indoor use for dry metal and glassware applications which require observation; they are especially suited to high temperature, high wattage applications.

HC5 Quartz Fibre Cords have a nickel/chrome-heating element wound on a quartz fibre core which is covered in a braided quartz fibre outer sheath.They are available in different lengths to accommodate a broad range of temperatures up to 800°C. As with all the tapes and cords, the use of an energy or temperature controller is recommended.

Ordering Information

Model	Length, mm	Electrical Requirements
HC501	305	230V, 100W
HC501X1	305	115V, 100W
HC502	610	230V, 200W
HC502X1	610	115V, 200W
HC503	1220	230V, 400W
HC503X1	1220	115V, 400W
HC504	2440	230V, 800W
HC504X1	2440	115V, 800W
HC505	4880	230V, 1600W

Please note: Outside diameter approx. 5mm

Key Features

- For high temperature, high wattage applications
- Operational temperature range up to 800°C
- Cord is spiralled around the tube being heated to give a surface loading power concentration up to 6.5W/cm²
- Linear loading: 328W/m (100W/ft)
- Available in different lengths from 1 foot (30.5cm) to 16 feet (488cm)
- Insulated unheated flexible lead at each end (61cm)
- Approximate outside diameter of 5mm
- All models have dual voltage choice of 115V and 230V (except for the HC505 model which is available as 230V only)
- For use in dry conditions only
- Use of MC227 Single output controller, MC228 2-Way output controller or MC810B Digital controller is recommended

HC5

Electrothermal

Controllers

For power, stirring and temperature control

Electrothermal have a comprehensive range of controllers to provide power and temperature control for all your laboratory equipment.

1-Way Controllers

Introduction

There is a choice of 3 models of 1-Way Controllers which operate up to 800W (MC5), 1800W (MC242) or 2300W (MC227); MC228X1 operates up to a maximum of 1100W. These controllers can control one piece of laboratory equipment at a time, or an equivalent load, ie. on a CMUV22/L which has 3 elements, you can have an MC5 on each element.

MC5 Controller

Operates at up to 800W

The MC5 Controller has been designed to provide a complete answer in controlling the heating of resistive loads for bench top operation. It delivers power up to a maximum of 800 Watts and is suitable for EM series Electromantles, CMU series Electromantles, Electric Bunsen and Heating Tapes/Cords.

The MC5 Controller has 2 neon indicators; "Power On" white neon light and "Mantle/Bunsen Heater On" amber neon light. It has a regulator control knob which can be turned clockwise to increase power. As the knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated.

A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (½") diameter rod. The MC5 has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

Electrical requirements	230V 50/60Hz, 800W or 115V, 50/60Hz, 460W
Controller power consumption	< 1 Watt
Dimensions (d x w x h), mm	130 x 95 x 105
Weight, kg	0.42

MC5
With Electric Bunsen

MC227 / MC228X1

MC242

Ordering Information

Model	Capacity	Electrical Requirements
MC5	MC5 Controller	230V, 50/60Hz, 800W
MC5X1	MC5 Controller	115V, 50/60Hz, 460W
MC5X6*	MC5 Controller	230V, 50/60Hz, 800W

**Model with X6 suffix comes supplied with EU plug*

MC242

Controller: Operates at up to 800W

The MC242 Controller has been designed to regulate the power input to laboratory heating equipment such as Electromantles, Heating Tapes and Cords. It operates up to a power load of 1800W for the 230V model and 1150W for the 115V model.

The MC242 Controller has 2 neon indicators:
"Power On" white neon light
"Mantle/Bunsen Heater On" amber neon light;

It has a regulator control knob which can be turned clockwise to increase power. As the knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated.

A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (½") diameter rod.

The MC242 Controller has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

For MC242 Controller

Electrical requirements	230V, 50/60Hz, 1800W
Controller power	< 1 Watt consumption

MC227 and MC228X1

Controller: Operates at up to 2300W

Both power controllers have been designed to regulate the power input to laboratory heating equipment up to 2300W. The MC227 Controller is a 230V controller, and MC228x1 is its 115V equivalent version and operates up to 1100W.

The MC227 and MC228X1 Controllers have 1 "Mantle/ Bunsen Heater On" amber neon indicator. They also have a regulator control knob which can be turned clockwise to increase power. As the knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated.

A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (½") diameter rod, so that it may be mounted on a standard ½" (12mm) diameter scaffold or retort stand, stand directly on the bench, or be wall mounted using a mounting bracket.

The MC227 and MC228X1 Controllers have a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

For MC227 Controller

Electrical requirements	230V,50/60Hz, 2300W
Controller power	< 1 Watt consumption

Ordering Information

Model	Description	Electrical Requirements	Dimensions (d x w x h)	Weight
MC227	Single place percentage On/ Off, die-cast	230V, 50/60Hz, 2300W	11.5 x 12 x 8cm	0.82kg
MC228X1	Single place percentage On/ Off, die-cast	115V, 50/60Hz, 1100W	11.5 x 12 x 8cm	0.82kg
MC227X6*	Single place percentage On/ Off, die-cast	230V, 50/60Hz, 2300W	11.5 x 12 x 8cm	0.82kg
MC242	Single place percentage On/ Off	230V, 50/60Hz, 1800W	13 x 9.5 x 10.5cm	0.42kg
MC242X1	Single place percentage On/ Off	115V, 50/60Hz, 1150W	13 x 9.5 x 10.5cm	0.42kg
MC242X6*	Single place percentage On/ Off	230V, 50/60Hz, 1800W	13 x 9.5 x 10.5cm	0.42kg

**Comes with EU Plug fitting*

MC240

2-Way Controller

The MC240 is a 2 channel device which provides the user with the option to control two pieces of laboratory equipment running simultaneously, but independently of each other. It operates up to a maximum of 800W per circuit, at either 115 or 230 Volts.

The MC240 2-Way Controller has been designed to work with:

- EM series Electromantles
- CMU series Electromantles
- Electric Bunsen
- Heating Tapes and Cords

The MC240 Controller has 3 neon indicators:

- "Power On" green neon light
- "Mantle/Bunsen Heater On" amber neon light for channel 1
- "Mantle/Bunsen Heater On" amber neon light for channel 2

In addition, for both channels there is a mains output, control knob and protection fuses. Both regulator control knobs can be turned clockwise to increase power. As each knob is turned, the controller's amber neon lamp will pulsate to show that power is being supplied to the equipment being controlled for that channel, e.g. mantle, heating tape or cord. The pulse frequency will decrease as the regulator control knob setting is increased, and at maximum setting, the amber neon will be continually illuminated. The MC240 Controller has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Specification

Controller power consumption	< 1 Watt per channel
Dimensions (d x w x h), mm	100 x 200 x 98
Weight, kg	1.1

Key Features

- Able to control two pieces of laboratory equipment simultaneously
- Three neon indicators
- Operates up to a maximum of 800W per circuit, at either 115 or 230 Volts.

MC240
2-Way Controller

Ordering Information

Model	Capacity	Electrical Requirements
MC240	Double place percentage On/Off	230V, 50/60Hz, 800W
MC240X1	Double place percentage On/Off	115V, 50/60Hz, 800W
MC240X6*	Double place percentage On/Off	230V, 50/60Hz, 800W

**Comes with EU Plug fitting*

Key Features

- PTFE-covered platinum resistance thermometer is included for measurements to 270°C
- Zinc die-cast outer case is suitable for the bench or can be mounted on a 12.7cm support rod
- Programming is done by up/down controls
- Three-digit LED display allows you to set a 1°C resolution over a range of -10°C to 800°C

MC810B
With stand

MC810B

Digital Controller

The MC810B Digital Controller provides a convenient means of temperature control, using microprocessor techniques to give ease of operation and good accuracy.

It can be used in 3 ways:

- In On/Off mode with the hysteresis loop controlling power switching
- As a PID (Proportional, Integrated, Derivative) controller
- As a temperature measuring device up to 270°C or more, depending upon the probe accessory used

The MC810B Digital Controller may be used in conjunction with a suitable heating or cooling device e.g. Electromantle or Electric Bunsen. For clear operation, the MC810B Digital Controller has an On/Off Power switch, "Power On" amber neon indicator and an Exit/Standby button.

Programming is done via the Up/Down controls on the front panel and the 3 digit LED display allows you to set a 1°C resolution over a range of -10°C to 800°C. Temperature sensing is performed by a plug-in PTFE covered platinum resistance thermometer probe which is suitable for measurements up to 270°C. There is a 5 pin DIN socket for the temperature probe. The sample temperature is displayed on the 3-digit LED display.

The MC810B Digital Controller has a zinc die-cast outer case, and is suitable for bench and retort stand mounting or wall mounting using the wall bracket and retort rod clamps provided. It has a short mains output lead with an IEC socket to connect it to the resistive load. An accessory extension mains lead is available where remote operation is required (e.g. in a fume extraction unit).

Technical Information

Electrical requirements	230V, 50/60Hz, 1500W 115V, 50/60Hz, 750W
Controller power consumption	<2W
Dimensions (d x w x h), mm	100 x 120 x 80
Weight, kg	1.1

Ordering Information

Model	Description	Electrical Requirements
MC810B	Digital Controller	230V, 50/60Hz, 1500W
MC810BX1	Digital Controller	115V, 50/60Hz, 750W
MC801BX6*	Digital Controller	230V, 50/60Hz, 1500W

**Comes with EU Plug fitting*

FM110

Flow Monitor

Flow monitors can be used in conjunction with the Multi (Extraction) Mantles EME and EMEA series. The new Electrothermal FM110 Flow Monitor has been carefully designed to provide increased safety in the laboratory by the monitoring of aqueous liquid used in heating-cooling applications and process control. The turbine assembly is comprised of components made from chemically resistant materials such as PVDF, sapphire, ceramic and viton.

Two versions of the Flow Monitor are available, covering different flow rates as follows.

FM110	0.5 to 15 litres/min
FM1102B	0.1 to 5 litres/min

A rod support clamp is provided at the rear of the controller to take a standard 12.5mm (1/2") diameter rod.

Technical Specification

Mains supply voltage	110 - 120V, 50/60Hz 220 - 240V, 50/60Hz
Maximum load current	115V = 15A 230V = 10A
Mains output	Non-detachable 3 core mains cable with moulded IEC socket (230V) or USA socket (115V)
Remote alarm output	2-pin DIN socket 5-pin DIN socket
Rod clamp size	12.7mm diameter
Manual reset control	2-position slide switch (front panel)
Reset mode control	2-position slide switch (side panel)
Operating ambient temperature	5°C to 40°C
Fluid temperature parameters	-30°C to +80°C

Ordering Information

Model	Description
FM110*	Flow monitor; 0.5 - 15 litres/min flow rate
FM1102B*	Flow monitor; 0.1 - 5 litres/min flow rate

**Note: Add X1 suffix for 115V and X6 suffix for 230V with EU plug*

Accessories - Ordering Information

Controllers

Part Code	Description
AZ6745	Mains cord and moulded IEC plug and lead set (UK).
AZ6747	Mains cord and moulded IEC plug and lead set (Schuko).
AZ6705	Temperature Probe 250°C Max.
AZ6706	Temperature Probe 400°C Max.
AZ6741	Temperature Probe 800°C Max.
M6332	Extension Lead (Europe)
M6902	Extension Lead (UK)

Electrothermal

Melting Point Apparatus

Mel-Temp® and IA9000 Series

Electrothermal's range of melting point apparatus consists of the Mel-Temp® and IA9100, IA9200, IA9300. The Mel-Temp® gives a temperature resolution of ±1°C, whereas the IA900 series has a temperature resolution of ±0.1°C and other performance enhancements.

1101D and 1102D Mel-Temp®

Digital Melting Point Apparatus

The updated 1101D Mel-Temp® Digital Melting Point Apparatus offers a quick and easy way to measure the melting points of samples at a budget price. It is ideal for multiple users, being ergonomically designed to ensure comfortable viewing for everyone, with a height-adjustable extension arm and a viewing head that may be rotated to suit each user. As a visual aid, the viewing head holds a viewing magnifier that offers 8x magnification.

As a further convenience, the extension arm is completely collapsible and can be neatly folded away into the unit, so that the unit can be stored flat to save space.

Each Digital Mel-Temp® comes supplied with a complimentary pack of 50 capillary tubes, its own power supply and power cable.

The 1101D Mel-Temp® has power requirements of 115-120V and 50-60Hz. The 1102D Mel-Temp® Digital Melting Point Apparatus has exactly the same functionality, but has power requirement of 230-240V; 50-60Hz.

Performance

- Membrane keypad with simple menus for intuitive use
- Push button controls are conveniently located to ensure that temperatures can be recorded without looking away from the sample
- Digital microprocessor with ±1°C resolution provides fast warm-up and accurate temperature control
- Samples in 3 capillary tubes may be viewed simultaneously

Safety and convenience

- 3 Audible beeps indicate that the oven temperature is stable and ready for sample
- Adjustable arm with 8x viewing magnifier can be folded away into the unit
- Adjustable object lens for sharp focus
- Rotating viewing head and safety eye piece to protect against glare and hot zone
- Integral light and wide angle 8x magnifier enhance sample observation, so that all 3 samples can be viewed without eye strain
- Units can be calibrated by the user on their site or by manufacturer/service organisation. If calibrated by the user, a calibration kit is required.

Key Features

- Temperature resolution ±1°C
- Accommodates 3 Melting point capillaries of up to 2mm outside diameter
- Tube Guide removal forcleaning and use of cold finger
- 32-bit Processor
- 4 x 1 Melt memory capacity
- 13-key membrane keypad

1101D

1102D also available

Technical Information

Colour	Black
Processor	32-bit Processor
Keypad	13-key membrane keypad
Capillary tubes	Accommodates 3 capillary tubes up to 2mm OD (Storage for pack 100)
Tube Guide	Tube Guide removal for cleaning and use of cold finger
Lens	40mm diameter lens (magnification 8x) removable and with adjustable focus
LED	White LED illuminated oven
Melt memory	4 x 1 Melt memory capacity
Temperature range	Ambient to 400°C
Fixed temperature ramp rate	1.0°C/minute
Fast temperature ramp rate	10°C/minute
Temperature resolution	±1°C
Accuracy	±1%
Temperature sensor	PT100 Platinum Resistance
Display	2 Rows of 12 characters with backlit LCD
Power requirements	115-120V, 50-60Hz for 1101D 230-240V, 50-60 Hz for 1102D
Dimensions (d x w x h), mm	355 x 200 x 80
Shipping weight, kg	2.5

Ordering Information

1101D and 1102D Mel-Temp®

Model	Description	Electrical Requirements
1102D	Mel-Temp® Fixed Ramp Rate Model	230V, 50/60Hz, 45W
1101D	Mel-Temp® Fixed Ramp Rate Model	115V, 50/60Hz, 45W
1102DX6	Mel-Temp® Fixed Ramp Rate Model	230V, 50/60Hz, 45W with EU plug

**Please note that each instrument is supplied with a pack of 50 capillary tubes, power supply and power cable.*

Accessories - Ordering Information

Part Code	Description
AZ9001	Cold Finger
AZ9002	Dust Cover
AZ9218	P-nitrotoluene
AZ9118	Carbazole (245.61deg) 0.5g
AZ9253	Calibration Key
AZ6731	Interface cable for Serial Drive Printer
AZ6733	Interface cable for Printer (PR2000)
AT4042	Capillary Tubes 1.5mm (10x100 pack)
AT4043	Capillary Tubes 2.0mm (10x100 pack)
PR2000S	Printer (with connecting ribbon cable)
AT4044	Paper Roll (2) and ribbon for printer
AZ9220	1A PSU Mains lead (UK)
AZ9220X1	1A PSU Mains Lead (115V – USA)
AZ9220X6	1A PSU mains Lead (European)

IA9100, IA9200, IA9300

Digital Melting Point Apparatus

Features of all 3 models of the IA9000 series:
The updated IA9000 series Digital Melting Point Apparatus offers a quick way to measure the melting points of samples, without sacrificing accuracy; the temperature resolution is within 0.1°C. It is ideal for multiple users, being ergonomically designed to ensure comfortable viewing for everyone, with a height- adjustable extension arm and a viewing head that may be rotated to suit each user. As a visual aid, the viewing head holds a viewing magnifier that offers 8x magnification.

As a further convenience, the extension arm is completely collapsible and can be neatly folded away into the unit, so that the unit can be stored flat to save space.

Each IA9000 series model comes supplied with a complimentary pack of 50 capillary tubes, its own power supply and power cable. The IA9000 series operates at both 115V and 230V.

Performance

- Membrane keypad with simple menus for intuitive use
- Push button controls are conveniently located to ensure that temperatures can be recorded without looking away from the sample
- Digital microprocessor with ±0.1°C resolution provides fast warm-up and accurate temperature control
- Samples in 3 capillary tubes may be viewed simultaneously

Safety and convenience

- 3 Audible beeps indicate that the oven temperature is stable and ready for sample
- Adjustable arm with 8x viewing magnifier can be folded away into the unit
- Adjustable object lens for sharp focus
- Daylight-balanced LEDs for improved sample illumination
- Rotating viewing head and safety eye piece to protect against glare and hot zone
- Integral light and wide angle 8X magnifier enhance sample observation, so that all 3 samples can be viewed without eye strain
- Units can be calibrated in the field or at the factory; if in the field a calibration kit is required
- Improved calibration procedure using a calibration key

Additional features

Additional features of the IA9200 and IA9300 series Digital Melting Point apparatus

- Temperature resolution ±0.1°C
- Selectable ramp rates between 0.2°C/min and 10°C/min; the IA9200 has a default setting of 0.2°C/min and the IA9300 has a default setting of 1°C/min
- Date and time facility
- PC output facility
- Interface with optional PR2000S Printer
- Printer output facility via RS232-C serial port
- USB output to flash drive
- 3 x 2 Melt memory capacity (IA9300 only)
- Batch memory of 500 Melts (IA9300) and 1000 Melts (IA9200)

IA9100

IA9200, IA9300 also available

Technical Information

Model	IA9100	IA9200	IA9300
32-bit Processor	•	•	•
Accommodates 3 Capillary Tubes up to 2mm OD (Storage for pack 100)	•	•	•
Tube Guide removal for cleaning and use of cold finger.	•	•	•
40mm diameter Lens (magnification x 8) removable and with adjustable focus	•	•	•
Oven temperature range (ambient to 400°C)	•	•	•
Temperature resolution ±0.1°C	•	•	•
Accuracy ±1%	•	•	•
13-key membrane keypad	•	•	•
Sample preparation	•	•	•
Cooling temp selection	•	•	•
Selectable ramp rate of 1.0°C/min & 10°C/min	•		•
Selectable ramp rates of 0.2 - 10°C/min		• (default 0.2°C/min)	• (default 1.0°C/min)
Fast ramp rate of 10°C/minute.	•	•	•
White LED illuminated oven	•	•	•
Nicad battery for memory, clock back-up		•	•
Date & Time facility		•	•
PC Output facility		•	•
Printer Output facility		•	•
USB Output to flash drive		•	•
Display (2 rows of characters with backlit LCD)	•	•	•
4 x 1 Melt memory capacity	•	•	
3 x 2 Melt memory capacity			•
Batch memory capacity of 500 melts			•
Batch memory capacity of 1000 melts		•	
Serial (RS232-C) Port for Printer		•	•
Dimensions (d x w x h), mm	355 x 200 x 80	355 x 200 x 80	355 x 200 x 80
Shipping Weight, kg	2.5	2.5	2.5

IA9100, IA9200, IA9300

Digital Melting Point Apparatus

Ordering Information

Model	Description	Electrical Requirements
IA9100	Fixed Ramp Rate Model	230V, 50/60Hz, 45W
IA9100X1	Fixed Ramp Rate Model	115V, 50/60Hz, 45W
IA9100X6	Fixed Ramp Rate Model	230V, 50/60Hz, 45W, EU Plug
IA9200	Programmable Ramp Rate Model	230V, 50/60Hz, 45W
IA9200X1	Programmable Ramp Rate Model	115V, 50/60Hz, 45W
IA9200X6	Programmable Ramp Rate Model	230V, 50/60Hz, 45W, EU Plug
IA9300	Beginning/Ending Recording Model for Pharmacopeia Requirements	230V, 50/60Hz, 45W
IA9300X1	Beginning/Ending Recording Model for Pharmacopeia Requirements	115V, 50/60Hz, 45W
IA9300X6	Beginning/Ending Recording Model for Pharmacopeia Requirements	230V, 50/60Hz, 45W, EU Plug

**Please note that each instrument is supplied with a pack of 50 capillary tubes, power supply and power cable.*

Accessories

Digital Melting Point Apparatus

Ordering Information

Part Code	Description
AZ9001	Cold Finger
AZ9002	Dust Cover
AZ9218	P-nitrotoluene
AZ9118	Carbazole (245.61deg) 0.5g
AZ9253	Calibration Key
AZ6731	Interface cable for Serial Drive Printer
AZ6733	Interface cable for Printer (PR2000)
AT4042	Capillary Tubes 1.5mm (10x100 pack)
AT4043	Capillary Tubes 2.0mm (10x100 pack)
PR2000S	Printer (with connecting ribbon cable)
AT4044	Paper Roll (2) and ribbon for printer
AZ9220	1A PSU Mains lead (UK)
AZ9220X1	1A PSU Mains Lead (115V – USA)
AZ9220X6	1A PSU mains Lead (European)

Electrothermal

Histology & Pathology Products

Equipment for preparing samples

This range consists of three products. Electrothermal's Paraffin Wax Dispenser heats wax to a liquid state and provides convenient 'wax on tap' for pathology and histology laboratories. The Paraffin Section Mounting Bath is designed to assist with the handling of paraffin wax samples in histology and pathology laboratories. It is essentially a hot distilled water floating out bath that allows for the manipulation of paraffin wax sections onto glass slides. The Slide Drying Bench aids in the preparation of microscope slides at the specimen mounting stage.

MH8523B

Paraffin Wax Dispenser

Electrothermal's Paraffin Wax Dispenser heats wax to a liquid state and provides convenient 'wax on tap' for pathology and histology laboratories. It complements both the Paraffin Wax Mounting Bath and the Slide Drying Bench to provide a complete set of paraffin wax sampling equipment for the modern laboratory. The Paraffin Wax Dispenser has a 4.5 litre capacity to ensure an ample supply of wax on tap. It is intended to be used solely for paraffin wax with a melting range from 45°C to 65°C inclusive.

An excellent feature is that the wax dispenser tap is kept heated to ensure that the wax always remains flowing and on tap. The dispenser tap is heated by an independent temperature-controlled element mounted inside it, which prevents the wax from cooling down, solidifying and blocking the tap. The tap is a non-drip swivel lever and has a replaceable filter. There is a mains power On/Off switch, with 4 additional neon lights to indicate:

- "Power On" (white neon)
- "Wax Bath Heater On" (amber neon)
- "Tap Heater On" (amber neon)
- "Wax Bath Over Temperature" (red warning neon)

The bath heater rotary control dial has a graded temperature scale, and the temperature of the paraffin wax dispenser is controlled by a built-in thermostat controlling the temperature from ambient to 75°C. The tap has its own tap heater adjustment control.

If an over temperature condition occurs, a "Wax Bath Over Temperature" red neon light will illuminate and the heater control for the bath will automatically turn off at 105°C. For added safety, a non-resettable thermal fuse has also been included. The Paraffin Wax Dispenser has a black PTFE coated aluminium interior, a powder coated black and white aluminium exterior and a durable black metal lid. It is virtually maintenance free and extremely easy to clean.

Technical Information

Material	Powder coated aluminium case
Temperature	Ambient +5°C to 75°C (10 - 80°C scale)
Weight	4.5kg
Dimensions (h x d), mm	3000 x 280 100mm overhang for the tap assembly.

Key Features

- 4.5 litre capacity
- Ambient to 75°C operating temperature range
- Fitted with safety over-temperature cut-out at 105°C and non-resettable thermal fuse
- Heated tap to prevent wax from solidifying in the tap
- Swivel lever non-drip tap with replaceable fitter

MH8523B

Ordering Information

Model	Capacity	Electrical Requirements
MH8523B	4.5 litres	230V 50/60Hz, 185W
MH8523BX1	4.5 litres	115V 50/60Hz, 175W
MH8523BX6	4.5 litres	230V 50/60Hz, 185W, EU Plug

MH8516

Paraffin Section Mounting Bath

Key Features

- PTFE black interior and powder coated white aluminium exterior is virtually maintenance free and extremely easy to clean
- Excess or damaged sections may be simply removed by skimming a filter paper over the water surface
- 70ºC nominal temperature for 2 litres of water attained within 120 minutes

The MH8516 Paraffin Section Mounting Bath is designed to assist with the handling of paraffin wax samples in histology and pathology laboratories. It is essentially a hot distilled water floating out bath that allows for the meticulous manipulation and location of paraffin wax sections onto glass slides. In the event of having any damaged sections or an excess of wax, both may be easily removed by skimming a filter paper across the water surface.

A white neon light indicates “Power On”, and an amber neon light indicates “Heater On”. The required temperature is selected using the heater dial and a nominal temperature of 70°C is typically achieved with 2 litres of water within 120 minutes.

Accurate water temperature is then maintained through an energy regulator which supplies power to a silicone rubber mat heater in controlled timed pulses. Overheating of the bath is prevented by a thermal fuse within the heater mat which automatically cuts out at too high a temperature.

The Paraffin Section Mounting Bath has a PTFE black interior and powder coated white aluminium exterior, which makes it virtually maintenance free and extremely easy to clean. It comes supplied with an IEC moulded cord and lead set and the IEC socket houses protection fuses for both the live and neutral power supply lines.

If required, the lid is supplied separately as part number AZ9241.

MH8516

Technical Information

Bath material	Aluminium base with PTFE coated interior
Temperature	Ambient + 5ºC to 75ºC using arbitrary 1- 10 scale
Dimensions (d x w x h), mm	330 x 330 x 140
Weight, kg	2.7

Ordering Information

Model	Capacity	Electrical Requirements
MH8516	2.25 litres	230V 50/60Hz, 240W
MH8516X1	2.25 litres	115V 50/60Hz, 240W
MH8516X6	2.25 litres	230V 50/60Hz, 240W, EU Plug
AZ9241	Paraffin Section Mounting Bath Lid	

MH6616

Slide Drying Bench

The Slide Drying Bench aids in the preparation of microscope slides at the specimen mounting stage. It complements both the Paraffin Wax Dispenser and the Paraffin Wax Mounting Bath to provide a complete set of paraffin wax sampling equipment for the modern laboratory.

Accepting up to 50 slides (76 x 25mm), the Slide Drying Bench has the facility for drying slides in different orientations- across the drying support bars, angled from the bars, or flat without the bars.

There is an On/Off switch, and "Power On" white neon and "Heater On" amber neon indicators.

The silicone rubber mat element heater provides heating up to 100°C, and the temperature is controlled from 10°C to 100°C by a built-in energy regulator.

The case and top are powder-coated aluminium and the unit comes complete with handy carrying handles.

Key Features

- Up to 50 slides capacity
- Different drying orientations
- Operates up to 100°C max
- Replacement elements are easily fitted

MH6616

Technical Information

Material	Powder coated aluminium base and top
Max Element Temp.	100°C
Dimensions (d x w x h), mm	180 x 390 x 95
Weight, kg	1.8

Ordering Information

Model	Capacity	Electrical Requirement
MH6616	50 slides	230V 50/60Hz, 150W
MH6616X1	50 slides	115V 50/60Hz, 150W
MH6616X6	50 slides	230V 50/60Hz, 150W, EU Plug

Electrothermal

Stirrers

Equipment for stirring up to 24 litres of fluid

Our range of stirrers includes low profile single and multi-position stirrers, mini-stirrers, slow speed stirrers and immersible stirrers which can operate underwater. Many of our stirrers have the choice of integral control or may be controlled by an external controller.

Low Profile Stirrer

Stirrers

Low profile stirrers may be used either with an integral controller or an external remote controller (AS645). The maximum achievable stirring speed of 2000rpm is affected by the stir bar, type, shape of the vessel, the volume and the viscosity of the solution.

- Uses Stir Trac technology which has strong magnetic coupling
- Rated for continuous use and sealed to IP65 standards
- Stirring speed range from 350 to 2000rpm
- Operating temperature 0 to 50°C
- Case material is glass moulded resin
- Recommended controller is the AS645 controller

Technical Information

Dimensions (d x w x h) 255 x 255 x 60mm

Integrated Controllers - Ordering Information

Integrated controllers, same speed at all positions

Part Code	Model	No. of positions	Capacity	Description	Weight	Electrical Requirements
PS60040	AS629	1	2L	Stir platform	0.8kg	230V, 50/60Hz, 7W
PS60057	AS639	1	24L	Stir platform	1.9kg	230V, 50/60Hz, 7W
PS60042	AS631	4	1L	Stir platform	2.4kg	230V, 50/60Hz, 28W
PS60043	AS632	5	400ml	Stir platform	2.7kg	230V, 50/60Hz, 35W
PS60044	AS633	9	250ml	Stir platform	3.2kg	230V, 50/60Hz, 63W

Remote Controllers - Ordering Information

Remote controllers, same speed at all positions use with stir bar stirrers; all to be used with AS645 Controller

Part Code	Model	No. of positions	Capacity	Description	Weight	Electrical Requirements
PS60062	AS644	1	24L	Stir platform	1.9kg	230V, 50/60Hz, 7W
PS60030	AS626	4	1L	Stir platform	2.4kg	230V, 50/60Hz, 28W
PS60032	AS628	5	400ml	Stir platform	2.7kg	230V, 50/60Hz, 35W
PS60031	AS627	9	250ml	Stir platform	3.2kg	230V, 50/60Hz, 63W
PS60063	AS645	Remote controller				

Mini-Stirrer

Stirrers

Small and convenient, mini-stirrers can stir up to a volume of 1 litre fluid, over a stirring speed range of 350 - 2000rpm.

A digital version is available which has an LED display to show the actual stirrer speed.

- Stir speed of between 350 - 2000rpm
- Up to 1 litre stir capacity

Technical Information

Dimensions (d x w x h)	143 x 143 x 66mm
Weight	0.5kg
Electrical requirements	230V, 50/60Hz

Integrated Controllers - Ordering Information

Integrated controllers, same speed at all positions

Part Code	No. of positions	Capacity	Description	Weight	Electrical Requirements
PS61013	1	1L	Standard Mini stirrer	0.5kg	230V, 50/60Hz
PS61014	1	1L	Digital Mini stirrer	0.5kg	230V, 50/60Hz
PS61066	1	1L	Unbranded Mini stirrer	0.5kg	230V, 50/60Hz
PS61034	-	-	Mini stirrer 12V transformer (UK)		
PS61035	-	-	Mini stirrer 12V transformer (EU)		
PS61036	-	-	Mini stirrer 12V transformer (US)		
PS60081	-	-	Power adaptor 12V D (110V)		

Slow Speed Stirrers

Stirrers with Integral Control

Slow speed stirrers feature sophisticated, electronically controlled magnetic drivers for precision stirring, which is reproducible to better than 1rpm. They are designed for stirring cell culture media or similar substances at slow speed, and may be used with a choice of suspended, pendulum or stir bar stirrers.

- Designed for stirring cell culture media or similar substances at slow speed.
- They may be used with an external controller
- Recommended controller is the AS614 controller
- Splash-proof non-corrosive polymer case
- Low-profile, easy-to-clean design
- Speed range from 0 to 150rpm

Accessories - Ordering Information

Slow Speed Stirrers

Part Code	Model	Description
PS60019	AS614	Remote controller with LCD
AT60064	-	PTFE coated magnetic stir bar 60mm x 10mm (5 pack)
AT60066	-	PTFE coated magnetic stir bar 25mm x 6mm (5 pack)

Integral Controller - Ordering Information

Integral controllers, use with suspended & stir bar stirrers

Part Code	Model	No. of positions	Capacity	Description	Dimensions (d x w x h), mm	Weight (kg)	Electrical Requirements
PS60046	AS635	1	2L	Stir platform	150 x 150 x 70	0.8	230V, 50/60Hz, 10W
PS60059	AS641	1	5L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60060	AS642	1	10L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60055	AS637	1	24L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60058	AS640	4	2L	Stir platform	260 x 260 x 70	2.7	230V, 50/60Hz, 10W

Integral Controller - Ordering Information

Integral controllers, use with pendulum stirrers

Part Code	Model	No. of positions	Capacity	Description	Dimensions (d x w x h), mm	Weight (kg)	Electrical Requirements
PS60046	AS635	1	2L	Stir platform	150 x 150 x 70	0.8	230V, 50/60Hz, 10W
PS60059	AS641	1	5L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60060	AS642	1	10L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60055	AS637	1	24L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60058	AS640	4	2L	Stir platform	260 x 260 x 70	2.7	230V, 50/60Hz, 10W

Remote Controller - Ordering Information

Remote controllers, use with suspended and stir bar stirrers; all to be used with AS614 controller

Part Code	Model	No. of positions	Capacity	Description	Dimensions (d x w x h), mm	Weight (kg)	Electrical Requirements
PS60017	AS612	1	5L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60018	AS613	1	10L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60054	AS636	1	24L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60016	AS640	4	2L	Stir platform	260 x 260 x 70	2.7	230V, 50/60Hz, 10W

Remote Controller - Ordering Information

Remote controllers, use with pendulum stirrers; all to be used with AS614 controller

Part Code	Model	No. of positions	Capacity	Description	Dimensions (d x w x h)	Weight (kg)	Electrical Requirements
PS60068	AS646	1	5L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60069	AS647	1	10L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60070	AS648	1	24L	Stir platform	260 x 260 x 70	2	230V, 50/60Hz, 10W
PS60016	AS611	4	2L	Stir platform	260 x 260 x 70	2.7	230V, 50/60Hz, 10W

Immersible Stirrers

Stirrers

Immersible Stirrers are completely sealed for use when immersed or in high humidity applications. They are ideal for stirring in water baths, incubators and environmental chambers up to a temperature of 50°C.

They can accommodate stir volumes of 400ml to 2 litres and can be used with or without a controller; the recommended controller is the AS625 2-channel remote controller.

- Immersible stirrers can be used with the 2-channel remote controller (AS625)
- Control up to six stir pads with one controller
- Stirring capacities from 400ml to 2L
- Case material is moulded ABS
- Stir speed range from 0 to 150rpm
- Includes oval stir bar

Technical Information

Stirring Range	350 to 2000rpm
Temperature Range	- 5 to 50°C

Immersible Stirrer with Integral Control - Ordering Information

Integral contollers, use with suspended & stir bar stirrers

Electrical Requirements 230V, 50/60Hz, 12W

Part Code	No. of positions	Capacity	Description	Dimensions (d x w x h), mm	Weight (kg)
PS60002	1	400ml	Stir pad	77 dia x 68	0.5
PS60003	1	1L	Stir pad (AS604)	102 dia x 68	0.9
PS60004	1	2L	Stir pad (AS606)	152 dia x 68	1.5

Immersible Stirrer with Remote Control- Ordering Information

Remote controller, same speed at all positions use with stir bar stirrers;

All to be used with AS625 controller

Electrical Requirements 230V, 50/60Hz, 12W

Part Code	No. of positions	Capacity	Description	Dimensions (d x w x h), mm	Weight (kg)
PS60084X1	1	400ml	Stir pad	77 dia x 68	0.5
PS60086X1	1	1L	Stir pad	102 dia x 68	0.9
PS60085X1	1	2L	Stir pad	152 dia x 68	1.5
PS60029			AS625 2-Channel remote controller		

Add X1 sufix for 115V and X6 suffix for 230V with EU plug

Multi-Position Stirrers offer six individually controlled stirring positions. These multi-position stirrers control multiple experiments with varied speeds from 350 to 2000 rpm.

Includes: Stirrer, 6-channel external controller (AS601) and 1 stir bar for each position.

- Low-profile design is stable and easy to clean
- Each position is controlled independently using external controller
- AS601 6-channel remote is recommended controller
- Material is moulded ABS (high impact)
- Operating temperature: 0 to 40°C
- Stir speed range: 350 - 2000rpm

Technical Information

No. of Stirring Positions	6
Capacity	250ml per position
Dimensions (d x w x h), mm	165 x 250 x 63
Weight	2.5kg

Multi-position stirrers - Ordering Information

Remote controller, indiviual speed control at all positions to be used with AS601 controller

Electrical Requirements 230V, 50/60Hz, 63W

Part Code	Model	No. of positions	Capacity	Description
PS60001	AS602	6	250ml	Stir platform for use with AS601Controller
PS60006	AS601	-	-	6-Channel remote controller

Add X1 suffix for 115V and X6 suffix for 230V with EU plug

Electromantles' Emporium with over 50 varieties

The Electrothermal range of Heating Mantles

Electrothermal's Electromantle heating mantles come in all sizes to heat round bottom and pear-shaped flasks and funnels from just 10ml to 22,000 ml capacity. With a choice of metal or polypropylene cases, we have Electromantles that can function with an integral or external controller, and can also stir and have adjustable volume capacity if required.

Our Multi-Mantles with 3 or 6 positions in series are often used for extraction, but can be used for any heating application up to 450°C. We also have a range of Digi-Mantles that offer full fingertip control through a digital touchscreen for both heating and stirring, giving superb accuracy.

Electrothermal's Electromantles are world-renowned for their quality and reliability, having been around for 70 years. They are super-safe, automatically cutting out if any liquid is spilled onto the element, to protect you from electric shocks. All models are cool-to-touch during operation, so that they can be picked up without injury, even when the element temperature is at 450°C. This is critically important in a busy laboratory, especially for schools and colleges.

Electrothermal

STEM RS Reaction Stations

Equipment for parallel synthesis

The STEM RS series Reaction Stations enable parallel synthesis to be carried out by offering the same controlled temperature and stirring rates at several reaction positions simultaneously.

The STEM RS Reaction Stations give you a choice of:

- 6 to 50 positions
- Working sample columes of between 10-30ml (but up to 250ml for RS600)
- Operational temperature range of ambient to 150°C
- Optional higher temperature models for up to 300°C
- Powerful stirring rate of between 400 - 2000rpm
- Wide range of accessories

RS600, RS900, RS1000, RS2500, RS5000, RS9000

STEM RS Reaction Stations

The Stem RS Reaction Stations enable parallel synthesis to be carried out by offering the same controlled temperature and stirring rates at several reaction positions simultaneously. They can be used for a wide range of applications from simple synthesis to process optimisation. The RS9000 is the exception in that it carries out controlled heating and shaking, as opposed to stirring.

The STEM RS Reaction Station range accommodates sample sizes from 2ml to 250ml in a wide range of vessel sizes and heating formats. Adaptor sleeves can be used to accommodate non-standard vessel sizes. The well-insulated reaction unit keeps the casework cool-to-touch; it gives quick heat-up times, excellent temperature uniformity across the block, and a thermal cut-out eliminates runaway conditions. High performance magnetic stirrers beneath each sample position ensure maximum coupling between the stirrer bar in the sample and the powerful motor. The combination of precise electronic control and rugged design ensures operator safety, while a PTFE coating protects the unit from chemical spills.

There are 5 models of STEM RS Heater/Stirrer Reaction Stations, giving you a choice of:

- 6 to 50 positions depending upon model (RS600 has 6 positions; RS900 and RS1000 have 10 positions; RS2500 has 25 positions and RS5000 has 50 positions)
- Working sample volumes of between 10-30ml, (but up to 250ml for RS600 only)
- RS600 model accommodates 57.5mm diameter vessels (also accommodates 40mm and other diameter vessels with appropriate adaptor sleeves)
- RS900, RS1000, RS2500, RS5000 models accommodate 24mm/25mm diameter vessels (also accommodate 16mm and other diameter vessels with appropriate adaptor sleeves)
- Operational temperature range of ambient to 150°C (ambient to 250°C for RS600 only)
- Optional higher temperature models for up to 300°C for some models (ie. RS600H, RS1000H)
- Powerful stirring rate of between 400 - 2000rpm, with bi-directional stirring option
- Optional PC-based external control software is available to schedule stir/heat profiles over varying time delays
- Wide range of accessories, including reflux and inerting head accessory, rotary evaporator adaptors, phase separation heads, filtration adaptors, glass condensers, temperature probes, and a selection of stir bars.

Part Code (230V)	PS80034	PS80067	PS80010	PS80025	PS80050
Part Code (115V)	PS80043	PS80068 (24mm)	PS80033 (24mm)	PS80036 (24mm)	PS80037 (24mm)
Model	RS600	RS900	RS1000	RS2500	RS5000
Higher temperature model	RS600H		RS1000H		
Stirred positions	6	10	10	24 or 25	50
Tube diameter	57.5 mm	24 or 25mm	24 or 25mm	24 or 25mm	24 or 25mm
Tube diameter with sleeves	40mm	16mm, 20mm	16mm, 20mm	16mm, 20mm	16mm, 20mm
Sample volume	Up to 250ml	10- 30ml	10- 30ml	10-30ml	10-30ml
Stir speed range	400 - 2000rpm	400 - 2000rpm	400 - 2000rpm	400 - 2000rpm	400 - 2000rpm
Soft start (to full ramp)	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins	Adjustable 0 – 10 mins
Temperature Range (Ambient)	Ambient to 250°C Ambient to 300°C for RS600H	Ambient to 150°C	Ambient to 150°C Ambient to 300°C for RS1000H	Ambient to 150°C	Ambient to 150°C
Temp Stability	± 0.5°C	± 0.5°C	± 0.5°C	± 0.5°C	± 0.5°C
Time to max/min temp	15 min	15 min	15 min	30 min	30 min
Interface port	RS232/RS485 & manual	RS232 & manual	RS232/RS485 & manual	RS232/RS485 & manual	RS232/RS485 & manual
Electrical req. (All 230V)	50/60Hz, 600W	50/60Hz, 300W	50/60Hz, 600W	50/60Hz, 800W	50/60Hz, 800W
Dimensions, (w x h x d), mm	248 x 312 x 157	240 x 140 x 215	80 x 150 x 305	250 x 145 x 365	250 x 145 x 460
Shipping Weight, kg	10kg	5.4kg	4kg	10kg	13.8kg

Key Features

- 6 position reaction station
- 57.5mm diameter vessels
- Can accommodate 40mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes up to 250ml
- Controlled temperature range from ambient to 250°C
- Powerful stir speed from 400 to 2000rpm
- Bi-directional stir speed
- Manual control or external control via the RS232/RS485 interface ports
- Optional PC-based external control software available to schedule stir/heat profiles over varying time delays
- Variety of accessories available including reflux and inerting head accessory, rotary evaporator adaptors, phase separation heads, filtration adaptors, glass condensers, temperature probes, and a selection of stir bars
- High temperature RS600H option with temperature range from ambient to 300°C
- Compact footprint for easy integration onto a robotic platform

RS600H

High temperature model

STEM RS600

Reaction Station

The RS600 is a six position reaction station designed for 57.5mm diameter vessels (also 40mm and other diameter vessels with appropriate adaptor sleeves), and sample sizes up to 250ml.

With a controlled temperature range from ambient +5°C to 250°C, it has a powerful stir speed from 400 to 2000rpm, including a bi-directional stirring option. It has either manual control or external control via the RS232/RS485 interface ports.

Optional PC-based external control software is available to schedule stir/heat profiles over varying time delays.

The RS600 can be used with a reflux and inerting head accessory, plus a range of accessories including rotary evaporator adaptors, phase separation heads, filtration adaptors, glass condensers, temperature probes, and a selection of stir bars.

It is also available as a high temperature RS600H option with temperature range from ambient to 300°C.

Technical Information

Model	RS600
High temp model	RS600H
Stirred positions	6
Tube diameter	57.5mm
Tube diameter sleeves	40mm
Sample volume	Up to 250ml
Stir speed range	400 - 2000rpm
Soft start (to full ramp)	0 - 10mins (Adjustable)
Temperature range (ambient)	Ambient to 250°C Ambient to 300°C for RS600H
Temperature stability	±0.5°C
Time to max/min temp	15mins
Interface port	RS485 RS232 & manual
Dimensions (w x d x h), mm	248 x 157 x 312
Shipping weight, kg	10kg

Ordering Information

Part Code	Model	Voltage	No. of Bores	Bore Diameter
PS80034*	RS600	230V	6	57.5mm
PS80043	RS600	115V	6	57.5mm
PS80034H*	RS600H	230V	6	57.5mm
PS80043H	RS600H	115V	6	57.5mm

**Comes with EU Plug fitting*

STEM RS900

Reaction Station

The RS900 is a 10 position reaction station designed for 24mm/25mm diameter vessels (also 16mm and other diameter vessels with appropriate adaptor sleeves), and sample sizes from 10ml to 30ml.

The unit has a controlled temperature range from ambient to 150°C, along with a powerful stir speed from 400 to 2000rpm.

Technical Information

Model	RS900
Stirred positions	10
Tube diameter	24 or 25mm
Tube diameter sleeves	16mm, 20mm
Sample volume	10 - 30ml
Stir speed range	400 - 2000rpm
Soft start (to full ramp)	0 - 10mins (Adjustable)
Temperature range (ambient)	Ambient to 150°C
Temp stability	±0.5°C
Time to max/min temp	15mins
Interface port	RS232 & manual
Dimensions (w x d x h), mm	240 x 215 x 140
Shipping weight, kg	5.4

Ordering Information

Part Code	Model	Voltage	No. of Bores	Bore Diameter
PS80067*	RS900	230V	10	24mm
PS80067A*	RS900	230V	10	25mm
PS80068	RS900	115V	10	24mm
PS80071A	RS900	115V	10	25mm

**Comes with EU Plug fitting*

Key Features

- 10 position reaction station
- 24mm/25mm diameter vessels
- Can accommodate 16mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes from 10ml to 30ml
- Controlled temperature range from ambient to 150°C
- Powerful stir speed from 400 to 2000rpm
- Manual/external control via the RS232 interface port
- Compact footprint for easy integration onto a robotic platform

RS900

Key Features

- 10 position reaction station
- 24mm/25mm diameter vessels
- Can accommodate 16mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes from 10ml to 30ml
- Controlled temperature range from ambient to 150°C
- Powerful stir speed from 400 to 2000rpm
- Manual/external control via the RS232/RS485 interface ports
- Compact footprint for easy integration onto a robotic platform
- High temperature RS1000H option with temperature range from ambient to 300°C

RS1000

STEM RS1000

Reaction Station

The RS100 is a 10 position reaction station designed for 24mm/25mm diameter vessels (also 16mm and other diameter vessels with appropriate adaptor sleeves), and sample sizes from 10ml to 30ml, along with a controlled temperature range from ambient to 150°C.

The unit has a powerful stir speed from 400 to 2000rpm, and permits both manual, and external control via the RS232/RS485 interface ports. It has a compact footprint for easy integration onto a robotic platform.

The RS100 is also available as a high temperature RS1000H option with temperature range from ambient to 300°C.

Technical Information

Model	RS1000
High temp model	RS1000H
Stirred positions	10
Tube diameter	24 or 25mm
Tube diameter sleeves	16mm, 20mm
Sample volume	10 - 30ml
Stir speed range	400 - 2000rpm
Soft start (to full ramp)	0 - 10mins (Adjustable)
Temperature range (ambient)	Ambient to 150°C Ambient to 300°C for RS1000H
Temperature stability	±0.5°C
Time to max/min temp	15mins
Interface port	RS232/RS485 & manual
Dimensions (w x h x d), mm	80 x 150 x 305
Shipping weight, kg	4

Ordering Information

Part Code	Model	Voltage	No. of Bores	Bore Diameter
PS80010*	RS1000	230V	10	24mm
PS80010A*	RS1000	230V	10	25mm
PS80033	RS1000	115V	10	24mm
PS80033A	RS1000	115V	10	25mm
PS80071*	RS1000H**	230V	10	24mm
PS80071A*	RS1000H**	230V	10	25mm
PS80073	RS1000H**	115V	10	24mm
PS80073A	RS1000H**	115V	10	25mm

**Add X6 suffix for 230V with EU plug*
***Model numbers with suffix H are high temperature models*

STEM RS2500 and RS2400

Reaction Stations

The RS2500 is a 25 position reaction unit & the RS2400 a 24 position reaction station, designed for 24mm/25mm diameter vessels. They both accommodate 16mm and other diameter vessels with appropriate adaptor sleeves), and sample sizes from 10ml to 30ml. They have a controlled temperature range from ambient to 150°C, along with a powerful stir speed from 400 to 2000rpm.

Both manual and external control are permitted via the RS232/ RS485 interface ports and they have a compact footprint for easy integration onto a robotic platform.

Key Features

- Choice of 25 position (RS2500) or 24 position (RS2400) reaction stations
- 24mm/25mm diameter vessels
- Can accommodate 16mm and other diameter vessels with appropriate adaptor sleeves
- Controlled temperature range from ambient to 150°C
- Powerful stir speed from 400 to 2000rpm
- Manual, and external control via the RS232/ RS485 interface ports
- Compact footprint for easy integration onto a robotic platform

RS2500

Technical Information

Model	RS2500/RS2400
Stirred positions	25/24
Tube diameter	24 or 25mm
Tube diameter sleeves	16mm, 20mm
Sample volume	10 - 30ml
Stir speed range	400 - 2000rpm
Soft start (to full ramp)	0 - 10mins (Adjustable)
Temperature range (ambient)	Ambient to 150°C
Temperature stability	±0.5°C
Time to max/min temp	30 mins
Interface port	RS485/RS232 & manual
Dimensions (w x h x d), mm	250 x 145 x 365
Shipping weight, kg	10

Ordering Information

Part Code	Model	Voltage	No. of Bores	Bore Diameter
PS80054	RS2400	115V	24	24mm
PS80054A	RS2400	115V	24	25mm
PS80057*	RS2400	230V	24	24mm
PS80057A*	RS2400	230V	24	25mm
PS80025*	RS2500	230V	25	24mm
PS80025A*	RS2500	230V	25	25mm
PS80036	RS2500	115V	25	24mm
PS80036A	RS2500	115V	25	25mm

**Comes with EU Plug fitting*

STEM RS5000

Reaction Station

The RS5000 is a 50 position reaction station designed for 24mm/25mm diameter vessels (also 16mm and other diameter vessels with appropriate adaptor sleeves), and sample sizes from 10ml to 30ml. It has a controlled temperature range from ambient to 150°C and a powerful stir speed from 400 to 2000rpm.

Key Features

- 50 position reaction station
- 24mm/25mm diameter vessels
- Can accommodate 16mm and other diameter vessels with appropriate adaptor sleeves
- Sample sizes from 10ml to 30ml
- Controlled temperature range from ambient +5°C to 150°C
- Powerful stir speed from 400 to 2000rpm
- Manual/external control via the RS232/RS485 interface ports
- Compact footprint for easy integration onto a robotic platform

RS5000

Technical Information

Model	RS5000
Stirred positions	50
Tube diameter	24 or 25mm
Tube diameter sleeves	16mm, 20mm
Sample volume	10 - 30ml
Stir speed range	400 - 2000rpm
Soft start (to full ramp)	0 - 10mins (Adjustable)
Temperature range (ambient)	Ambient to 150°C
Temperature stability	±0.5°C
Time to max/min temp	30 mins
Interface port	RS485/RS232 & manual
Dimensions (w x h x d), mm	250 x 145 x 460
Shipping weight, kg	13.8

Ordering Information

Part Code	Model	Voltage	No. of Bores	Bore Diameter
PS80037	RS5000	115V	50	24mm
PS80037A	RS5000	115V	50	25mm
PS80050*	RS5000	230V	50	24mm
PS80050A*	RS5000	230V	50	25mm

** Add X6 suffix for 230V with EU plug fitting*

STEM RS9000

Heater/Shaker Reaction Station

The RS 9000 Heater/Shaker Reaction Station can be used within a robotic workstation or as a stand-alone apparatus in the lab. On a robotic platform, heating and shaking cycles can be controlled by external software or as part of a fully automated system through the RS232/ RS485/ GSIOC ports; for standalone use, there is the additional option of controlling heating and shaking cycles via the user friendly touchscreen.

The CTC panel (Capacitance Touch Control) of the touchscreen enables the temperature and shaking speeds to be changed using up/down arrows and the actual values are clearly displayed on a high definition LCD display which has an anti-glare coating. The LCD display is cool blue to be visible in both bright and dim lighting conditions, without deleteriously affecting light-sensitive chemicals. The touchscreen has a laminated toughened glass panel that is chemically resistant to most acids and solvents.

Temperature probe

The RS9000 operates over a temperature range of ambient 5°C to 150°C. An optional temperature probe can be purchased and plugged into the din socket on the front panel.

X-Y Gyration system

The RS9000 can handle heavy workloads and give 24 hour continuous operation with uniform agitation of between 100-600rpm. For stability, the RS9000 has a solid bronze chassis on which the X–Y gyration system is mounted, which is a robust two axis slide plate mechanism. Tapered roller bearings ensure smooth agitation cycles and give accurate control of agitation speed even at low revolutions. Advanced micro-controllers monitor temperature and agitation speed constantly and make the required adjustments as necessary which has been proven to provide many years of reliable service.

Interchangeable blocks

The RS9000 has a range of different reaction blocks that can be inter-changed to give a choice of both reaction vessel capacities and formats that can be fitted into the same working footprint. If desired, the reaction blocks can also be customised to accept different vessels and tray sizes.

Auto-Park

The RS9000 has a unique "auto-park" feature which ensures the platform always stops in the same X-Y co-ordinate This allows for automated sampling and additions.

Key Features

- Very versatile as reaction blocks can be inter-changed to accommodate different vessels and tray formats
- Can be used on a robotic platform or within a laboratory
- Choice of touchscreen control or external control via RS232/ RS485/ GSIOC ports
- Operates over a temperature range of ambient to 150°C
- Agitation speed of 100-600 rpm
- Optional temperature probe
- 2-axis X-Y gyration system on solid bronze chassis that is both reliable and stable
- Auto-park feature enables use on robotic platforms
- Soft start ramping to minimise splashing
- Very safe to operate
- Provides many years of reliable use with continuous 24 hours heating and agitation

RS9000

Safety Features

The RS9000 has a thermal cut-off that eliminates runaway conditions. The 'Hot block' warning via a highly visible warning display icon alerts you to when the block temperature is above 50°C, even when the apparatus is unplugged from the power supply. The RS9000 can be stopped rapidly in case of emergency by pressing down on the front sliding door; the front display will indicate "Door Open" and immediately stop. Heating and stirring can be reset after stopping by closing the door and pressing the function key zones on the front panel to reactivate.

Soft Start Ramping

Soft Start Ramping allows controlled build-up to the set speed (from 0 to 10 mins). This feature minimises splashing of vessel contents, wetting of flask closures and fragmentation of specimens.

Technical Specification

Electrical requirements	230V, 50-60Hz, 900W
Heating temp. range	Ambient + 5°C to 150°C
Timer range	1 - 99 hours
Agitation speed	100 - 600 rpm
LCD display	Backlit blue double line13 dot matrix
Glass touch panel	3mm clear with 2mm anti-reflective clear with a toughed grey laminate bonded sandwich
Touch key zones	Capacitance sensor touch
Product weight.	42kg (excluding a reaction block being in place)
Max. load weight	7 kg max for each reaction block
Dimensions (w x d x h), mm	240 x 510 x 165

Ordering Information

Part Code	Description
PS83000*	RS9000 Agitator Reaction Station
AZS4141	Heater Cartridge (110V)
AZS4142	Heater Cartridge (230V)
M7876	Motor Brushes. (2 per)
PS80052	Reaction Block for test tubes, 96 x 16mm OD
PS80064	Reaction Block for test tubes, 40 x 24mm OD
PS80074	Reaction Block for 4 x standard Micro-titre plates
PS80047	Reaction Block for 4 x 96 well PTFE Micro-titre plates
PS80065	Reactor for Charybdis Calypso System
PS80048	96 well PTFE Micro-titre plate, 9 x 8mm ID
PS80114	Reaction Block for 96 x 1.5ml Micro-titre tubes
PS80049	96 well PTFE Micro-titre plate lid
PS80051	96 well PTFE Micro-titre complete with lid
AZ140940	Temperature probe (external)

*Add x1 suffix for 115V model

Note: Customised reactor blocks also available

Accessories

For RS Series Reaction Stations

Part Code	Accessory	RS Model				
		600	900	1000	2500	5000
AT60067	Stir bar PTFE coated15mm x 4mm		•		•	•
ATS10101	Adaptor sleeve 11mm - 25mm (10 pack)		•			
ATS10210	Adaptor sleeve 12mm - 25mm (10 pack)		•			
ATS10211	Adaptor Sleeve 25mm - 23mm (10 pack)		•			
ATS10212	Adaptor Sleeve 25mm -18/16mm (10 pack)		•			
PS80087	Temperature probe	•	•	•	•	•
PS80155	Adaptor sleeve RS900 25-22mm (10 pack)		•			
AZ6745	Power cable without plug	•	•	•	•	•
AZ6746	115V Power cable with US plug	•	•	•	•	•
AZ6747	230V Power cable with EU plug	•	•	•	•	•
AZS4024	Fuse 8A SLO BLO	•	•			
AZS4010	Motor			•		
AZS4100	PCB Display			•		
AZS4101	PCB Microprocessor			•		
AZS4186	RS1000 front fascia label			•		
AZS4189	RS1000 115V power PCB assy			•		
AZS4310	Adaptor sleeve 25-24 dia (25 pack)				•	•
ATS10031	Stir bar retriever			•		
ATS10019	Inerting cap without valve (6 pack).			•		
ATS10020	Inerting cap assembly – (6 pack)			•		
ATS10025	Temp probe inerting caps (6 pack)			•		
ATS10026	Spare plug for ATS10025 (6 pack)			•		
ATS10028	Large elliptical mag bar (20 pack)			•		
ATS10029	Large octagonal mag bar (20 pack)			•		
ATS10030	Cross shape mag bar Medium (20 pack)			•		
ATS10033	Octagonal stir bar small (40 pack)			•		
ATS10034	Cross stir bar – small (40 pack)			•		
ATS10035	Elliptical stir bar – small (40 pack)			•		
PS80088	Reaction pot	•				
PS80013	PTFE caps sili septa to fit 80112 (100 pack)	•				
PS80134	Adaptor sleeve 57.5 to 35mm (6 pack)	•				
PS80142	Adaptor sleeve 57.5 to 50.5mm (6 pack)	•				
AZS4192	RS600 Motor	•				
AZ4194	RS600 M2 PT100 PCB	•				
AZ4195	RS600 Transformer	•				
ATS10056	Adaptor sleeve 24mm to 16mm (10 pack)		•	•		
ATS10201	Adaptor sleeve H/Pres RS600 (6 pack)	•				
ATS10240	Adaptor sleeve 56-28 (6 pack)	•				
ATS10242	Adaptor sleeve 44.0 to 26 dia. (1 off)	•				
ATS10381	Adaptor sleeve 56 - 24 (6 pack)	•				
PS80011	Adaptor sleeve 24mm to 20mm tubes (10 pack)		•	•		
PS80011A	Adaptor sleeve 25-20mm (10 pack)		•	•		
PS80012	Adaptor sleeve 24mm to 16mm (10 pack)		•	•		
PS80012A	Adaptor sleeve 25mm to 16mm tubes (10 pack)		•	•		
PS80013	Adaptor sleeve 24mm to 20mm tubes (10 pack)		•	•		
PS80013A	Adaptor sleeve 25mm x 20mm tubes (25 pack)				•	
PS80014	Adaptor sleeve 24mm x 16mm tubes (25 pack)				•	

**Note: For 115V, add X1 suffix For 230V with EU plug, add X6 suffix*

Part Code	Accessory	RS Model				
		600	900	1000	2500	5000
PS80014A	Adaptor sleeve 25 - 16mm (25 pack)				•	
PS80015A	Adaptor sleeve 25 - 18mm (10 pack)		•	•		
PS80016	Adaptor sleeve 24 - 20mm tubes		•	•	•	•
PS80016A	Adaptor sleeve 25 - 20mm tubes		•	•	•	•
PS80017	Adaptor sleeve 24 - 16mm tubes		•	•	•	•
PS80017A	Adaptor sleeve 25 - 16mm TU tubes BES		•	•	•	•
PS80018	Adaptor sleeve VE Liquid reflux 24-25mm tubes		•	•	•	•
PS80041	Adaptor sleeve 56mm to 47mm bottles (6 pack)	•				
PS80081	Adaptor sleeve 25mm to 24mm tubes (10 pack)		•	•		
PS80156	Adaptor sleeve 25mm to 17mm (50 pack)					•
PS80126	Adaptor sleeve 25mm to 20mm reflux unit (50 pack)					•
PS80131	Adaptor sleeve 57.5mm to 25mm (6 pack)	•				
PS80133	Adaptor sleeve 57.5mm to 45mm (6 pack)	•				
PS80134	Adaptor sleeve 57.5mm to 35mm (6 pack)	•				
PS80142	Adaptor sleeve 57.5mm to 50.5mm (6 pack)	•				

**Note: For 115V, add X1 suffix For 230V with EU plug, add X6 suffix*

Easy, accurate and ergonomic

The all-new IA 9000 series Melting Point Apparatus

The all-new IA9000 series Digital Melting Point Apparatus offers a quick way to measure the melting points of samples without sacrificing accuracy, with a temperature resolution of ±0.1°C.

It is ideal for a busy laboratory, being ergonomically designed to ensure comfortable viewing for everyone, with a height-adjustable extension arm and an 8x magnification viewing head that rotates to suit each user. The extension arm is collapsible and can be neatly folded away into the unit, so that the unit can be stored flat to save space.

Key features are:

- 3 samples may be run simultaneously
- Membrane keypad with simple menus for intuitive use
- Selectable ramp rates between 0.2°C/min and 10°C/min
- Improved calibration procedure using a calibration key
- Results are recordable and held in batch memory
- PC output facility with optional printer

Electrothermal

STEM Omni Reaction Stations

Equipment for Parallel Synthesis

The STEM Omni Reaction Stations enable you to conduct parallel synthesis for either 6 or 10 reaction positions simultaneously, maintaining the same controlled temperature and stirring rate at each position.

The STEM Omni Reaction Stations give you a choice of:

- 6 or 10 positions
- Working sample volumes of between 2 to 250ml
- Operating temperature range of ambient to 220°C
- Temperature range may be extended down to -30°C with a cooling plug and chiller accessory
- Stirring rate of between 100 - 2000rpm
- Wide range of accessories

Omni 1000 and 6000 Series

STEM Omni Reaction Stations

The STEM Omni Reaction Stations enable you to conduct parallel synthesis for either 6 or 10 reactions simultaneously. They offer a modular design which enables you to build up your own parallel synthesis system in 5 steps, by ordering your choice of:

Step	Part Description
1	Omni Controller (same for all Omni range)
2	Omni heater cartridge
3	Omni cooling plug
4	Omni reaction vessels
5	Omni reflux head

The Omni Controller base unit remains the same for all Omni models, and one base unit can accommodate sample volumes from 2ml to 250ml. All heating blocks, glassware and reflux heads are interchangeable. The Omni Reaction Station footprint is compact and can be placed into any fume hood, or within a small bench space.

You have a choice of either 10 or 6 positions within your Omni Reaction Station. 10 position units allow up to 10 reactions with working volumes of:

Working volume	Omni Model
2 - 25ml	OS1025

6 place units allow up to 6 reactions with working volumes of:

Working volume	Omni Model
5 - 50ml	OS6050
50 - 100ml	OS6100
100 - 250ml	OS6250

Part Code	Description
OS1025*	Series 1025 kit for 10 position Omni Reaction Station (working vol. 2 - 25ml)
OS6050*	Series 6050 kit for 6 position Omni Reaction Station (working vol. 5 - 50ml)
OS6100*	Series 6100 kit for 6 position Omni Reaction Station (working vol. 50 - 100ml)
OS6250*	Series 6250 kit for 6 position Omni Reaction Station (working vol. 100 - 250ml)
OSCA*	Omni station controller
ATS10112*	Cooling plug for OS6050, OS6100 and OS6250
ATS10114*	Cooling plug for OS1025

**Add X1 suffix for 115V and X6 for 230V with EU plug*

Key Features

With the exception of different working volumes, all of the models within the Omni 1000 and 6000 series STEM Omni Reaction Stations offer the same outstanding performance features:

- Interchangeable, modular design
- Stirring stability and speeds of 100 - 2000 rpm
- Simple menus and touch pad interface to control the system performance
- All heater cartridges are equipped with “in block heaters” that allow temperatures up to 220°C
- High level of stability (± 1.5°C) across the heater cartridge itself
- An external temperature probe to increase temperature accuracy to ±0.5°C
- A “cool to touch” outer casing
- Selected cartridges can also be used in conjunction with a cooling plug to extend the operating temperature range from - 30°C to 220°C

OS1025

Technical Specification

Cat no	OS1025	
Model	**Series 1025**	
Voltage	230 & 115 V*	
Number of positions	10	
Well diameter, mm	24.5/ 25.5mm	
Working volume, ml	2- 25 ml	
Temperature range	Ambient to 220°C	
Temperature range using cooling plug and chiller	-30°C to 220°C	
Stir speed range rpm	100 - 2000 rpm	
Electrical requirements	All 230V models: 50/60Hz, 500W	All 115V models: 50/60Hz, 500W
Dimensions (w x d x h), mm	235 x 330 x 300	
Shipping Weight (kit), kg	10kg for all models, (with glassware)	
Shipping Weight (unit), kg	4.1kg for all models, (without glassware)	

Cat no	OS6050	OS6100	OS6250
Model	**Series 6050**	**Series 6100**	**Series 6250**
Voltage	230 & 115 V*	230 & 115 V*	230 & 115 V*
Number of positions	6	6	6
Well diameter, mm	40.5mm	56.5 mm	56.5 mm
Working volume, ml	5- 50ml	50- 100ml	100- 250ml
Temperature range	Ambient to 220°C	Ambient to 220°C	Ambient to 220°C
Temperature range using cooling plug and chiller	-30°C to 220°C	-30°C to 220°C	-30°C to 220°C
Stir speed range rpm	100 - 2000 rpm	100 - 2000 rpm	100 - 2000 rpm
Electrical requirements	All 230V models: 50/60Hz, 500W		All 115V models: 50/60Hz, 500W
Dimensions (w x d x h), mm	235 x 330 x 450	235 x 330 x 450	235 x 330 x 550
Shipping Weight (kit), kg	10kg for all models, (with glassware)		
Shipping Weight (unit), kg	4.1kg for all models, (without glassware)		

Add X1 suffix for 115V and X6 suffix for 230V model with EU plug

Included in the Omni Reaction Station Kit

Part Code	OS1025 kit	OS6050 kit	OS6100 kit	OS6250 kit
Omni controller, 230V	•	•	•	•
Omni heater cartridge	10 x 25mm bores	6 x 56mm bores	6 x 56mm bores	6 x 56mm bores
Reducing sleeves* Not included for 115V models		•	•	•
Omni reaction vessels (glassware) Not included for 115V models	10 x 25ml	6 x 50ml	6 x 100ml	6 x 250ml
Inerting caps Not included for 115V models	•	•	•	•
Stirrer bars	•	•	•	•
Omni reflux head	•	•	•	•

Notes: *Reducing sleeves may be ordered separately for OS1025
Omni cooling plug is not contained within the kits, but may be ordered separately

Components of Omni 1000 and 6000 Series

STEM Omni Reaction Stations

Omni Temperature Sensor

1

For fast and more precise temperature control, the temperature probe can be inserted either into a machined pocket in the reaction block or via a thermocouple pocket directly in one of the reaction vessels. The temperature sensor attaches directly into the Omni Controller

Omni Gas-tight PTFE caps

2

By using a simple bi-directional open/close lever, each reaction vessel can be controlled separately. Each vessel cap has a septum to allow sampling at each vessel position.

Omni Reflux Head

3

Efficient condensing and refluxing, for samples up to 25ml, is provided through the use of a liquid-cooled aluminium reflux head. Cooing is introduced through the inlet/outlet ports. Individual reaction positions are numbered (1-10) for simplified tube and sample identification. A central gas inlet/outlet port, combined with the gas-tight PTFE caps allows for a vacuum to be pulled and/or inert gas (nitrogen) to be ported into each individual tube.

Omni Reaction Vessels

4

24mm and 25mm x 150mm threaded glass reaction vessels which can handle volumes from 2 – 250ml. Solutions can be added and removed through the top of the reaction vessel.

Omni Cooling Plug

5

Allows the reaction unit to cool down to -30°C, greatly expanding the types of chemistry you can perform with this equipment. The cooling plug is simple to use: Insert the cooling plug into the reaction unit and attach cooling lines to the inlet/outlet via quick disconnects. Melting ice is no longer a problem with the cooling plug.

Omni Heater Cartridge

6

Encased reaction unit ensures accurate temperature uniformity across the unit. Unique patented air flow through ventilation slots beneath and around the rim of the case ensures a cool case temperature, allowing it to be safe to touch.

Omni Controller

7

Used to control both temperature and stirring speed, the Omni Controller is easy to operate. Temperature and speed can be separately enabled to provide complete control of reactions. Both temperature and speed are individually adjustable by depressing the up/down keys on the interface. The control panel (on the controller) has 3 indicator lights: “Power On”, “Heater On” and “Stirrer On”, so that you can closely view the performance of your system. A 2 x 16 digit display indicates the actual temperature from -30C to 220°C. Stirring speed is reflected by simply touching the stirrer speed knob.

OS6100

Ordering Information

Part Code	Accessory	Model		
		O6050	OS6100	OS6250
	Round Bottom Flask Capacity	50ml	100ml	250ml
OSCA*	Omni-Station Controller, 230V	•	•	•
ATS10096	Reducing column R45 22SVL (6 pack)	•	•	•
ATS10111	Dean & Stark R45 reducer column (2 pack)	•	•	•
ATS10116	Reflux/Inerting head. 6 x 56		•	•
ATS10108	50ml Round Bottom flask, 40mm OD,R45, (6 pack)	•		
ATS10092	100ml Round Bottom flask R45 (6 pack)		•	
ATS10094	250ml Round Bottom flask (6 pack)			•
ATS10110	Reducer sleeves 56-40mm (6 pack)	•		
ATS10141	Inerting cap 22mm, (6 pack)	•	•	•
ATS10143	Inerting Caps, 22SVL Twin septum (6 pack)	•	•	•
ATS10097	Stir bar 15 x 10 Elip, Rare Earth	•	•	•
ATS10186	Stir bars 25 x 14 ELI, Rare Earth (6 pack)	•	•	•
OSD656	Block cartridge 6 x 56, 230V	•	•	•
ATS10095	Condenser Rotavis (1 off)	•	•	•
ATS10112	Cooling plug OM 6 x 56mm	•	•	•
ATS10145	50ml Round Bottom flask, 40OD, Baf, R45, (2 pack)	•		
ATS10148	50ml Round Bottom flask, 40OD, Crys, R45, (2 pack)	•		
ATS10146	100ml Round Bottom flask, 56OD, Baf, R45, (2 pack)		•	
ATS10149	100ml Round Bottom flask, 56OD, Cry, R45, (2 pack)		•	
ATS10147	250ml Round Bottom flask, 56OD, Baf, R45, (2 pack)			•
ATS10150	250ml Round Bottom flask, 56OD, Cry, R45, (2 pack)			•
ATS10157	Rotary evaporator, Plain, A24 Rodaviss 45, (2 pack)	•	•	•
ATS10158	Rotary evaporator, HiBoil, A24 Rodaviss 45, (2 pack)	•	•	•
ATS10159	Rotary evaporator, Filterd, A24 Rodaviss 45, (2 pack)	•	•	•
ATS10160	Plain B34 to Rotavis 45 rotary evaporator (2 pack)	•	•	•
ATS10161	Plain B29 to Rotavis 45 rotary evaporator (2 pack)	•	•	•
ATS10162	Rotary evaporator B34 hiboil Rod45 (2 pack)	•	•	•
ATS10163	Rotary evaporator B29 HiBoil Rod45 (2 pack)	•	•	•
ATS10164	Rotary evaporator Filtered Plain B34 to Rodaviss 45 (2 pack)	•	•	•
ATS10165	Rotary evaporator Filtered Plain B29 to Rodiviss 45 (2 pack)	•	•	•
ATS10169	Nitrogen bubbler (2 pack)	•	•	•
ATS10170	Dropping funnel, cranked, 50ml	•		

*Add X1 suffix for 115V model and X6 for 230V with EU plug

Accessories for the OS1025

STEM Omni Reaction Station

Ordering Information

Part Code	Accessory	Model
		OS1025
	Round Bottom Flask Capacity	50ml
OSCA*	Omni Station Controller 230V	•
ATS10075	Test tubes 24x150mm 22 thread (10 pack)	•
ATS10377	Inerting cap and probe hole (10 pack)	•
AZS4206	Stir bars 10 x 6 oval R/E (10 pack)	•
OSD1025	Block cartridge, 10 x 25, 230V	•
ATS10115	Reflux/inert head, 10 x 25mm	•
ATS10031	Stir bar retriever	•
ATS10063	Temperature probe, 5 pin, PT100	•
ATS10075	Test tubes, 24 x 150mm, 22 thread (10 pack)	•
ATS10076	Test tubes, 24 x 150mm, 22 thread pocket (10 pack)	•
ATS10077	Dean & Stark, 24 x 150mm, 22 thread (10 pack)	•
ATS10079	Phase separation head, 22svl (2 pack)	•
ATS10080	Mini condenser, 22svl (2 pack)	•
ATS10081	Filtration adaptor/tap, 9.5 dia (2 pack)	•
ATS10082	Rotary Evaporator Adaptor, Plain A24-22mm,(2 pack)	•
ATS10083	Rotary Evaporator, HiBoil, A24-22mm (2 pack)	•
ATS10084	Rotary Evaporator, Plain, B34-22,(2 pack)	•
ATS10085	Rotary Evaporator Adaptor, HiBoil B34-22 (2 pack)	•
ATS10086	Rotary Evaporator Adaptor, Filtr B34-22 (2 pack)	•
ATS10087	Rotary Evaporator Adaptor Plain B29-22 (2 pack)	•
ATS10088	RRotary Evaporator Adaptor, HiBoil B29-22, (2 pack)	•
ATS10089	Rotary Evaporator Adaptor, Filter B29-22, (2 pack)	•
ATS10090	Rotary Evaporator Adaptor, Filter, A24-22mm, (2 pack)	•
ATS10114	Cooling Plug	•
ATS10118	Cap Pressure Reaction 24/25OD	•
ATS10119	Pressurised Vessel 24mm (1 pack)	•
ATS10134	RV small 24mm crystal (10 pack)	•
ATS10135	RV large 24mm crystal (10 pack)	•
ATS10137	Stir-Bar, D-Cross,13x17D, Rare Earth, 20P	•
ATS10144	Inerting Caps, 22svl, Twin septum (10 pack)	•

*Add X1 suffix for 115V model and X6 for 230V with EU plug

Electrothermal

STEM Integrity Reaction Stations

Equipment for parallel synthesis

The STEM Integrity 10 Reaction Station enables you to conduct 10 different reactions simultaneously within the same reaction unit, each reaction being conducted within its own cell, at its own individual temperature and stir rate. The newly launched STEM Integrity 6 Reaction Station enjoys shares the same performance characteristics of Integrity 10, but has 6 positions instead of 10. Its larger cell working volumes make Integrity 6 particularly suited for chemistry labs.

STEM Integrity 10

Reaction Station

The STEM Integrity 10 Reaction Station can control 10 different reaction processes simultaneously and monitor each of the Integrity 10 reaction cells independently.

The temperature is controllable from -30 to 150°C with a very high degree of accuracy and maintained by either the block itself or by using a probe in the solution.

With a temperature stability of ± 0.2°C and a minimal set point overshoot of 0.1°C, extreme accuracy is guaranteed.

Each cell has an individually controlled magnetic stirrer and can accommodate sample volumes of between 2 and 25ml. Intrusive or non-intrusive IR turbidity probes are available to determine solubility/crystallisation measurements via turbidity.

Technical Specification

Number of positions	10
Cell cavity diameter	25.5 mm
Glass vessel fill level	2 - 25 ml
Temperature range	- 30 to + 150°C
Temperature difference between any two positions	180°C
Temperature overshoot (max)	0.1°C
Max. controlled heating/cooling rate	5°C/min
Controlled heating/cooling ramp rate	0.1°C/min to 5°C/min in 0.1°C/min steps
Stir speed range	350 - 1200rpm/min
Viscosity capacity	glycerine at 25°C
Recommended stir bars	12/ 4.5 mm (cylindrical) or 10/ 6 mm (oval)

Measured external temp. (optional thermometer) range

Temperature range		-40 to + 160°C
Temperature resolution		±0.01°C
Temperature accuracy		±0.5°C
Stirrer speed range		350 - 1200/min
Stirrer resolution		1rpm/min
Stirrer accuracy		±1rpm/min
Electrical requirements		230V, 50/60Hz, 1500W
Dimensions	(unit) (w x d x h), mm	153 x 430 x 160
	(power supply), mm	153 x 415 x 160
Weight	(unit), kg	9.5
	(power supply), kg	10.5

Key Features

- 10 individual cells in one reaction station
- Individual control of temperature and stirring rate for each cell
- Temperature range of -30°C to 150°C
- Stirring rate of 350rpm - 1200rpm
- Cell working volume of 2ml - 25ml
- Optional attachments for refluxing, and working under vacuum or inert gas conditions
- Optional multi-temp temperature probes for temperature control by contents
- Optional multi-infrared probes for solubility/crystallisation studies
- Automatic microprocessor control through a touchscreen
- Warranty: 3 years parts and labour

Integrity10

Part Code: PS20000

Notes:

- Minimum temperature is linearly dependent upon the temperature of the cooling fluid. Specified range assumes a cooling fluid temperature supply of 5°C at a flow rate of ≥ 2.5L/min and a cooling capacity of 1100W
- Stir performance only guaranteed using recommended stir bars
- RS232 & RS485 ports, RJ45 ethernet socket & GSI0C protocol socket for connecting and controlling Integrity 10 as part of an integrated system
- SD card acts as Integrity 10 hard drive; optional USB port for data storage

Ordering Information

Part Code	Description
PS20000*	Integrity 10 with 10 individually controlled cells with PSU
ATS20001	Integrity 10 Reflux unit with inerting caps
ATS10075	Glass tubes 24/150 mm, 22 thread (10 Pack)
AZS4206	Stirrer bars 10/ 6 mm (10 Pack)
ATS10001	Multi-Temp 10 module
ATS10027	Thermocouple probe (6 Pack)
ATS10027/10	Thermocouple probe (10 Pack)
ATS10232E	Multi IR box
ATS10360/1	Non Intrusive IR sensor
ATS10360/5	Non Intrusive IR sensor (5 Pack)
ATS10360/10	Non Intrusive IR sensor (10 Pack)
ATS11005	Integrity software
ATS10230	Intrusive IR probe stainless steel PID-NIR5-BNSD (Pack 1)
ATS10231	IR Probe DIP-NIR5-BNSD (10 Pack)
ATS10230H	Intrusive IR probe in Hastelloy (nickel-based alloy withhigh corrosion resisitance)

**Note: For 115V, add X1 suffix, for 230V with EU plug, add X6 suffix*

STEM Integrity 6

Reaction Station

The STEM Integrity 6 Reaction Station enables you to conduct 6 different reactions simultaneously within the same reaction unit, each reaction being conducted within its own cell, at its own individual temperature and stir rate. If desired, fast heating and cooling rates can be selected, with temperature ramps of between 0.1°C/min to 5°C/min. There is also a crash function for even faster temperature changes, which is ideal for kinetic determinations.

Extreme temperature accuracy is guaranteed, with a temperature stability of ± 0.2°C and a maximum set point overshoot of 0.1°C. The temperature may be maintained either through the block itself or by using a probe within each cell's solution.

This accuracy can be maintained over a wide temperature range of -30°C to 150°C, with precise, independently controlled temperature profiles, and homogeneous sample mixing may be assured with stirring rates of between 0rpm to 1300rpm using magnetic stirrers.

With working volumes of between 10ml to 50ml, the STEM Integrity 6 is an excellent screening tool for most laboratories and can also be used to establish ideal process conditions.

Technical Specification

Number of positions	6
Cell cavity diameter	40.5 mm
Cell working volume	10 – 50ml
Glass vessel fill level	2 - 25 ml
Temperature range	-30 to + 150°C
Temperature difference between any two positions	180°C
Temperature overshoot (max)	0.1°C
Max. controlled heating/cooling rate	5°C/min
Controlled heating/cooling ramp rate	0.1°C/min to 5°C/min in 0.1°C/min steps
Stir speed range	0 - 1300rpm/min
Viscosity capacity	glycerine at 25°C
Recommended stir bars	12/ 4.5 mm (cylindrical) or 10/ 6 mm (oval)

Measured external temperature (optional thermometer) range

Temperature range		-40 to + 160°C
Temperature resolution		±0.01°C
Temperature accuracy		±0.5°C
Stirrer speed range		350 - 1200/min
Stirrer resolution		1rpm/min
Stirrer accuracy		±10rpm/min
Electrical requirements		230V, 50/60Hz, 1500W
Dimensions	(unit) (w x d x h), mm	153 x 430 x 160
	(power supply), mm	153 x 415 x 160
Weight	(unit), kg	9.5
	(power supply), kg	10.5

Key Features

- 6 individual cells in one reaction block
- Individual control of temperature and stirring rate for each cell
- Temperature range of -30°C to 150°C
- Stirring rate of 0 rpm- 1300 rpm
- Cell working volume of 10ml- 50ml
- Optional attachments for refluxing, and working under vacuum or inert gas conditions
- Optional multi-infrared probes for solubility/ crystallisation studies
- Automatic microprocessor control through a touchscreen
- Warranty: 3 years parts and labour

STEM Integrity 6

Reaction Station

Electrothermal

Technical Information

Electrothermal have a dedicated Technical Support team who are on hand to help with any applications advice and questions you may have about our products and how to use them. We also have a team of dedicated engineers whose expertise you can draw upon. There are two fully equipped laboratories which are used for developing applications, testing new products and assisting with customer protocols.

Service and Repair

Technical information

Electrothermal's products are manufactured to the highest standards, but should your equipment develop a fault or simply need a service, we have a dedicated service team on hand to help you.

In the first instance, to discuss your requirements, please contact us on:

Please mark your returned goods with the reference number and mark for the attention of the Service Department at:

Electrothermal
Electrothermal House
Unit 12A, Purdey's Way,
Purdey's Industrial Estate,
Rochford,
Essex
SS4 1ND
United Kingdom

We aim to investigate your faulty equipment and return it to you within 7 working days.

Our Service Department is also happy to help you should you require onsite repairs or equipment calibration.

Warranty

All Electrothermal products come with a one year warranty for parts and labour as standard. Some of our goods, the Integrity 10 and Integrity 6 Reaction Stations, come with an extended warranty of three years parts and labour. All replacement parts are guaranteed for 6 months.

CE Conformity

All Electrothermal ranges of laboratory equipment are rigorously tested against applicable standards and are CE marked in accordance with EC legislation. This is reinforced by a comprehensive technical data base which has been established over many years of experience in the design and manufacture of laboratory heating equipment.

CSA Conformity

The CMU series of Electromantles has CSA (Canadian Standards Association) approval and is eligible to bear the CSA mark with adjacent indicators 'C' and 'US' for Canada and US respectively. CSA certification particularly applies for the US and Canada as it tests products to US and Canadian standards.

WEEE & RoHS Regulations

The Waste Electrical and Electronic Equipment (the WEEE Regulations-Directive 2002/96/EC) legislation is now in place in the UK. The WEEE Directive endeavours to reduce the amount of electrical and electronic equipment waste going to landfill or being incinerated, by promoting its re-use, recycling and other forms of recovery.

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2005 (the RoHS Regulations-Directive 2002/95/EC) are now legally applicable in the UK. They apply to any new electrical and electronic equipment that has entered the European market since July 1st 2006 and aim to restrict the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB) and polybrominated diphenylether (PBDE) in such products. Electrothermal complies with both the WEEE and RoHS Regulations, being environmentally responsible and promoting manufacturing good practice.

ISO 9001: 2008

Electrothermal first gained ISO 9001 quality system registration in 1994 and is currently certified to the International Quality Standard BS EN ISO 9001-2008. This ensures that Electrothermal is committed to providing the highest quality products, services and customer satisfaction. The scope of our certificate No. CERT–0050898 is the design, manufacture, servicing and supply of laboratory, medical, defence and industrial heating equipment, instruments and control devices.

Periodic table

No. - Atomic Number M.P. - Melting Point B.P. - Boiling Point

Name	Symbol	No.	Atomic Weight	M.P. (°C)	B.P. (°C)	Density (g/cm^3)	Ionisation energy (eV)
Actinium	Ac	89	227	1050	3200	10.07	5.17
Aluminum	Al	13	26.9815	660	2467	2.7	5.9858
Americium	Am	95	243	994	2607	13.67	5.9738
Antimony	Sb	51	121.76	630	1750	6.68	8.6084
Argon	Ar	18	39.948	-189	-186		15.7596
Arsenic	As	33	74.9216	81	613	5.72	9.7886
Astatine	At	85	210	302	337		9.3
Barium	Ba	56	137.327	725	1140	3.59	5.2117
Berkelium	Bk	97	247	986		14.78	6.1979
Beryllium	Be	4	9.0122	1278	2970	1.85	9.3227
Bismuth	Bi	83	208.9804	271	1560	9.75	7.2856
Bohrium	Bh	107	264				
Boron	B	5	10.811	2300	2550	2.34	8.298
Bromine	Br	35	79.904	-7	59	3.12	11.8138
Cadmium	Cd	48	112.411	321	765	8.65	8.9938
Calcium	Ca	20	40.078	839	1484	1.55	6.1132
Californium	Cf	98	251	900	15.1	6.2817	
Carbon	C	6	12.0107	3500	4827	2.26	11.2603
Cerium	Ce	58	140.116	795	3257	6.77	5.5387
Cesium	Cs	55	132.9055	29	678	1.87	3.8939
Chlorine	Cl	17	35.453	-101	-35	3.21	12.9676
Chromium	Cr	24	51.9961	1857	2672	7.19	6.7665
Cobalt	Co	27	58.9332	1495	2870	8.9	7.881
Copper	Cu	29	63.546	1083	2567	8.96	7.7264
Curium	Cm	96	247	1340		13.5	5.9915
Dubnium	Db	105	262				
Dysprosium	Dy	66	162.5	1412	2562	8.55	5.9389
Einsteinium	Es	99	252	860			6.42
Erbium	Er	68	167.259	1522	2510	9.07	6.1077
Europium	Eu	63	151.964	822	1597	5.24	5.6704
Fermium	Fm	100	257	1527			6.5
Fluorine	F	9	18.9984	-220	-188	1.7	17.4228
Francium	Fr	87	223	27	677		4.0727
Gadolinium	Gd	64	157.25	1311	3233	7.9	6.1501
Gallium	Ga	31	69.723	30	2403	5.91	5.9993
Germanium	Ge	32	72.64	937	2830	5.32	7.8994
Gold	Au	79	196.9665	1064	2807	19.32	9.2255
Hafnium	Hf	72	178.49	2150	5400	13.31	6.8251
Hassium	Hs	108	277				
Helium	He	2	4.0026	-272	-269		24.5874
Holmium	Ho	67	164.9303	1470	2720	8.8	6.0215
Hydrogen	H	1	1.0079	-259	-253	0.09	13.5984
Indium	In	49	114.818	157	2000	7.31	5.7864
Iodine	I	53	126.9045	114	184	4.93	10.4513
Iridium	Ir	77	192.217	2410	4527	22.4	8.967
Iron	Fe	26	55.845	1535	2750	7.87	7.9024
Krypton	Kr	36	83.8	-157	-153		13.9996
Lanthanum	La	57	138.9055	920	3469	6.15	5.5769
Lawrencium	Lr	103	262	1627			4.9
Lead	Pb	82	207.2	327	1740	11.35	7.4167
Lithium	Li	3	6.941	180	1347	0.53	5.3917
Lutetium	Lu	71	174.967	1656	3315	9.84	5.4259
Magnesium	Mg	12	24.305	639	1090	1.74	7.6462
Manganese	Mn	25	54.938	1245	1962	7.43	7.434
Meitnerium	Mt	109	268				

No. - Atomic Number M.P. - Melting Point B.P. - Boiling Point

Name	Symbol	No.	Atomic Weight	M.P. (°C)	B.P. (°C)	Density (g/cm^3)	Ionisation energy (eV)
Mendelevium	Md	101	258				6.58
Mercury	Hg	80	200.59	-39	357	13.55	10.4375
Molybdenum	Mo	42	95.94	2617	4612	10.22	7.0924
Neodymium	Nd	60	144.24	1010	3127	7.01	5.525
Neon	Ne	10	20.1797	-249		-246	21.5645
Neptunium	Np	93	237	640	3902	20.2	6.2657
Nickel	Ni	28	58.6934	1453	2732	8.9	7.6398
Niobium	Nb	41	92.9064	2468	4927	8.57	6.7589
Nitrogen	N	7	14.0067	-210	-196	1.25	14.5341
Nobelium	No	102	259	827			6.65
Osmium	Os	76	190.23	3045	5027	22.6	8.4382
Oxygen	O	8	15.9994	-218	-183	1.43	13.6181
Palladium	Pd	46	106.42	1552	2927	12.02	8.3369
Phosphorus	P	15	30.9738	44	280	1.82	10.4867
Platinum	Pt	78	195.078	1772	3827	21.45	8.9587
Plutonium	Pu	94	244	640	3235	19.84	6.0262
Polonium	Po	84	209	254	962	9.3	8.417
Potassium	K	19	39.0983	64	774	0.86	4.3407
Praseodymium	Pr	59	140.9077	935	3127	6.77	5.473
Promethium	Pm	61	145	1100	3000	7.3	5.582
Protactinium	Pa	91	231.0359	1568	15.4		5.89
Radium	Ra	88	226	700	1737	5.5	5.2784
Radon	Rn	86	222	-71	-62		10.7485
Rhenium	Re	75	186.207	3180	5627	21.04	7.8335
Rhodium	Rh	45	102.9055	1966	3727	12.41	7.4589
Rubidium	Rb	37	85.4678	39	688	1.63	4.1771
Ruthenium	Ru	44	101.07	2250	3900	12.37	7.3605
Rutherfordium	Rf	104	261				
Samarium	Sm	62	150.36	1072	1900	7.52	5.6437
Scandium	Sc	21	44.9559	1539	2832	2.99	6.5615
Seaborgium	Sg	106	266				
Selenium	Se	34	78.96	217	685	4.79	9.7524
Silicon	Si	14	28.0855	1410	2355	2.33	8.1517
Silver	Ag	47	107.8682	962	2212	10.5	7.5762
Sodium	Na	11	22.9897	98	883	0.97	5.1391
Strontium	Sr	38	87.62	769	1384	2.54	5.6949
Sulfur	S	16	32.065	113	445	2.07	10.36
Tantalum	Ta	73	180.9479	2996	5425	16.65	7.5496
Technetium	Tc	43	98	2200	4877	11.5	7.28
Tellurium	Te	52	127.6	449	990	6.24	9.0096
Terbium	Tb	65	158.9253	1360	3041	8.23	5.8638
Thallium	Tl	81	204.3833	303	1457	11.85	6.1082
Thorium	Th	90	232.0381	1750	4790	11.72	6.3067
Thulium	Tm	69	168.9342	1545	1727	9.32	6.1843
Tin	Sn	50	118.71	232	2270	7.31	7.3439
Titanium	Ti	22	47.867	1660	3287	4.54	6.8281
Tungsten	W	74	183.84	3410	5660	19.35	7.864
Uranium	U	92	238.0289	1132	3818	18.95	6.1941
Vanadium	V	23	50.9415	1890	3380	6.11	6.7462
Xenon	Xe	54	131.293	-112	-108		12.1298
Ytterbium	Yb	70	173.04	824	1466	6.9	6.2542
Yttrium	Y	39	88.9059	1523	3337	4.47	6.2173
Zinc	Zn	30	65.39	420	907	7.13	9.3942
Zirconium	Zr	40	91.224	1852	4377	6.51	6.6339

Kjeldahl Method for Protein Content

Technical information

The method consists of heating a substance with sulphuric acid, which decomposes the organic substance by oxidation to liberate the reduced nitrogen as ammonium sulphate. In this step potassium sulphate is added to increase the boiling point of the medium (from 169°C to 189°C). Chemical decomposition of the sample is complete when the medium has become clear and colourless (initially very dark).

The solution is then distilled with sodium hydroxide (added in small quantities) which converts the ammonium salt to ammonia. The amount of ammonia present (hence the amount of nitrogen present in the sample) is determined by back titration. The end of the condenser is dipped into a solution of boric acid. The ammonia reacts with the acid and the remainder of the acid is then titrated with a sodium carbonate solution with a methyl orange pH indicator.

Degradation: Sample + H_2SO_4 --> $(NH4)_2SO_4$ + CO_2 + SO_2 + H_2O

Liberation of ammonia: $(NH_4)_2SO_4$ + 2NaOH --> Na_2SO_4 + $2H_2O$ + $2NH_3$

Capture of ammonia: $B(OH)_3$ + H_2O + NH_3 --> NH_4^+ $B(OH)_4^-$

Back-titration: $B(OH)_3$ + H_2O + Na_2CO_3 --> $NaHCO_3$ + $NaB(OH)_4$ + CO_2 + H_2O

The Kjeldahl method's universality, precision and reproducibility have made it the internationally-recognized method for estimating the protein content in foods and it is the accepted standard method.

Standard Melting Points

Technical information

Compound	mp (°C)	Compound	mp (°C)
Mesityl bromide	39-41	Benzamide	128-129
Thymol	50-52	Benzoin	136-137
para-dichlorobenzene	52-54	trans-Cinnamic acid	135-136
Dibromoaniline	56-58	Urea	132-133
Vanillin	81-82	Maleic Acid	139-140
Glutaric acid	97-99	Anthranilic acid	146-147
Resorcinol	109-110	Adipic Acid	152-153
Acetanilide	113-114	Citric Acid	153-155
dl-Mandelic Acid	117-118	Salicylic acid	158-161
2-Naphthol	121-122	Benzanilide	162-164
Benzoic acid	121-122	Sulfanilamide	165-166
Succinimide	124-125	Cholesterol	148-150

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Владикавказ (8672)28-90-48
Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
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Кострома (4942)77-07-48
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Россия +7(495)268-04-70 **Казахстан** +7(727)345-47-04 **Беларусь** +(375)257-127-884 **Узбекистан** +998(71)205-18-59 **Киргизия** +996(312)96-26-47

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