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.

Find out more! Please scan the QR/Mobile Tag with your smartphone for more information

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, 1100W
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

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 DIP-NIR5-BNSD (Pack of 1)
ATS10231	IR Probe DIP-NIR5-BNSD (10 Pack)
ATS10230H	Intrusive IR probe in Hastelloy (nickel-based alloy withhigh corrosion resisitance)
ATS10395	Intrusive IR/NIR sensor 661.6004 - NIR, 10mm in Hastelloy (Pack of 1)

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

Intrusive IR Probes for Integrity 6 and 10

Part Code	ATS10395	ATS10230 (stainless steel- pack 1) ATS10231(stainless steel- pack 10) ATS10230H (Hastelloy- pack 1)
Description	Intrusive IR/NIR probe 661.6004-NIR, 10mm	Intrusive IR probe DIP-NIR5-BNSD
Key features	Ultra-mini Immersion probe Large window at probe tip Ideal for large crystals and highly viscous solutions	World's smallest fibre optic dipping probe Ideal for multi-channel applications
Optical light path	10 mm ± 0.02 mm	5mm
Materials in contact with sample	Sapphire Kalrez 6375 (perfluoroelastomer) Hastelloy C-22, PEEK (polyether ether ketone)	Choice of stainless steel or Hastelloy (nickel-based alloy with high corrosion resistance)
Probe housing	Designed to fit Integrity 10	Designed to fit Integrity 10
Dimensions:		
Outer tip diameter	6 mm	1.5 mm (17-gauge needle size)
Min. immersion depth	20 mm	7mm (tip to upper edge of sample window)
Total length	215 mm	180mm (including handle)
Max. temperature at the probe shaft	150°C	
Pressure range sample	1 bar up to 6 bar	
Fibre optic fibres	Quartz built-in cables with low OH content (NIR)	Quartz built-in cables
Core diameter optic fibres	600 µm	2 x 400 µm
Total length	2 x 1.4 m	1.5m (from connector to tip)
Cable connectors	FSMA type 905	SMA
Chemical resistance	Very good chemical resistance	Can be used in almost any organic and inorganic solvents except HF and strong acids. HF will dissolve the quartz fibre and strong acids will corrode the stainless steel
Recommended cleaning solutions		Distilled water, detergent, alcohol, acetone

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, 900W
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