Incubators

with BioCote® antimicrobial protection

Stuart® has a number of incubators specially designed for accurate and reproducible temperature controlled applications. All incubators have state of the art microprocessor detection, setting and control of temperature.

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

Introduction

Incubators

Stuart® has a number of incubators specially designed for accurate and reproducible temperature controlled applications. All incubators have state of the art microprocessor detection, setting and control of temperature. This allows for maximum:

Accuracy

The set temperature is accurately reflected in the actual temperature inside the incubator. The latter is continuously monitored via a thermocouple and if it deviates from the set (e.g. If the door is opened) the energy to the heater is precisely regulated to adjust the actual temperature back to the set point, without overshoot.

Uniformity

It is important that the temperature within the incubator chamber is as uniform as possible so that all samples are subjected to the same conditions. This is achieved by forced air circulation. A fan continuously moves the warm air around the incubator chamber in order to achieve homogeneous conditions.

Stability

Incubators are generally left on for long periods of time. The microprocessor ensures that, once stabilised, the temperature within the incubator chamber remains stable, even when the external ambient temperature varies. This ensures long-term reproducible results.

Resolution

The result of outstanding accuracy, uniformity and stability means a display resolution of 0.1°C is found on all Stuart® incubators. This means that the chamber temperature can be set to one-tenth of a degree.

Models within the Stuart® range include:

- Benchtop incubator specifically designed for warming microtitre plates, details on page 51
- Hybridisation incubator for blotting techniques, details on pages 56 to 57
- Completely transparent acrylic incubators designed for a variety of germination and general incubation applications, details on page 58
- The SI Series of shaking incubators with built-in orbital shaker. Details on pages 52 to 53.
- The SI505 shaking incubator specifically design to provide the ideal shaking action for microtitre plates on pages 54 to 55.

Key Features

- Compact unit
- Ideal for microtitre plates and petri dishes
- Laminar flow air circulation
- Digital setting and display of temperature
- Convenient upward opening door
- Stainless steel interior

SI19

SI19

SI19

Incubator, for microtitre plates,

Specially designed for use with microtitre plates, which can be difficult to incubate. In conventional incubators, when 4 or more plates are placed on a shelf, they block the air circulation, which can seriously impair temperature distribution.

The Stuart® SI19 Incubator overcomes this problem with forced air circulation, which blows preheated air across the shelves rather than just through them. Microtitre plates are also prone to drying out during incubation. The SI19 overcomes this with a water tray to increase the humidity within the chamber.

The bright LED display indicates temperature and the encoder control allows rapid and accurate temperature setting. An integral over-temperature protection system automatically tracks the set temperature and controls the heater in the event of a fault. Error codes are displayed if a fault has occurred or if the set temperature has been interrupted.

An acrylic upwards opening door provides excellent access to the interior. The stainless steel chamber features 4 shelves each accommodating 6 plates (or 12 stacked in 2 layers). Shelves are captive and slide out for easy loading.

Technical Specification

Nominal capacity	20 litres
Temperature range	Ambient + 8°C to 80°C
Temperature fluctuation (at 37°C)	±0.5°C
Temperature variation	±0.5°C
Display type	LED
Display resolution	0.1°C
Internal dimensions, mm (w x d x h)	250 x 230 x 200
Overall dimensions, mm (w x d x h)	380 x 380 x 435
Net weight, kg	24
Electrical supply	230V, 50Hz, 280W
IP Rating	30

Ordering Information

Model	Description
SI19	Incubator, microtitre plate

SI500 and SI600

Incubators with orbital shaker

These combined shaker and incubators are ideal for scientists doing cell culturing procedures, especially suspension culture applications. Both units are compact enough to be positioned on the laboratory bench.

The shaker provides an orbital shaking motion, adjustable between 30 to 300rpm with a gentle start action. The shaking speed is microprocessor controlled and set via the digital LED control panel. The incubator also incorporates a versatile digital timer which can be set from 1 second to 9 days. After the timer has counted down the shaking action will stop and an alert will sound, as a safety feature the incubator will continue to run.

The incubators feature smoked acrylic windows in the door and to both sides to allow easy visibility of the samples. The incubators temperature is set via a separate bright LED display, encoder control ensures that the temperature can be quickly set between ambient temperature +5°C and 60°C. Forced air circulation ensures uniform heating of the load.

Both Incubators have a versatile clamping system which secures most sizes and mixtures of flask up to 1 litre on the SI500 and 2 litre on the SI600. Typically, the SI500 platform will accommodate the following Erlenmeyer flasks: 12 x 250 ml, or 9 x 500 ml or 6 x 1000 ml while the SI600 can accommodate the following: 6 x 2000ml, 9 x 1000ml or 15 x 500ml.

Key Features

- Combined incubator shakers
- 51 or 115 Litre capacity available
- Digital display for temperature and speed
- Integrated timer
- Unique retractable platform for easy loading and unloading
- Angle adjustable accessory tube racks, with Magnalock coupling system available
- Communications enabled for external temperature measurement

SI600 and SI500

Incubator Accessories

SI500 and SI600

Incubators with orbital shaker

The units both feature a retractable platform. Under normal use the platform is locked in place but whilst accessing your samples the platform can be drawn forward out of the chamber to allow easiest access to samples at the back of the incubator. The SI Incubators also features a USB connection with dedicated software to enable long term monitoring of the incubator temperature, i.e. over weekends.

A wide range of stainless steel accessory racks are available to hold 1.5ml, 15ml and 50ml sample tubes, the angle of the tubes can be adjusted up to 30°. Accessory racks are held to the orbiting platform by a Magnalock system, allowing quick coupling and de-coupling without tools.

IQ/OQ Documentation

Both incubators are also available with comprehensive IQ/OQ documentation. Please ensure that you use these are ordered with the unit by using the IQ/OQ codes.

Technical Specification

	SI500	SI600
Temperature range	Ambient +5 - 60°C	Ambient +5 - 60°C
Temperature display resolution	0.1°C	0.1°C
Temperature precision	± 0.5°C	± 0.5°C
Temperature fluctuation	± 0.5°C	± 0.5°C
Temperature variation	<0.5°C	<0.5°C
Speed range, rpm	30 to 300 rpm	30 to 300 rpm
Orbit diameter, mm	16	16
Platform size, mm	335 x 335	526 x 390
Capacity, L	51	115
Internal dimensions (w x d x h), mm	422 x 408 x 297	623 x 465 x 395
Maximum vessel height, mm	250	300
Maximum load, kg	10	10
Overall dimensions (w x d x h),mm	450 x 474 x 522	675 x 542 x 642
Net weight, kg	30	55
Heater power	250W	400W
Electrical supply	230V, 50Hz, 300W	230V, 50Hz, 450W

Ordering Information

Model	Description
SI500	Incubator, orbital shaker
SI600	Incubator, orbital shaker, large
SI500/IQOQ	Incubator, orbital shaker with IQ/OQ documentation
SI600/IQOQ	Incubator, orbital shaker, large with IQ/OQ documentation
SI500/1	Tube rack, 1.5ml x 64 microtubes
SI500/2	Tube rack, 15ml x 25 centrifuge tubes
SI500/3	Tube rack, 50ml x 12 centrifuge tubes
SI500/4	Tube rack, 16 x 30ml Universal plastic containers

SI500 Control Panel

SI505

Microtitre Shaking Incubator,

The SI505 has been designed specifically to combine a bench top laboratory incubator with the specific mixing action required for microtitre plates.

Shaking action is ideal for mixing microtitre plates, combining a high speed action between 250 and 1250rpm with a tight orbit of 1.5mm. This enables even the smallest of vessels to adequately mixed, be it well plates or microtubes. The SI505 has independent control of speed and temperature to avoid accidental temperature adjustment. Speed is microprocessor controller and set via the digital LED control panel. The unit also incorporates a versatile timer, which can be set from 1 second to 9 days, once the timer has run down, an alarm will sound and the shaking action will cease, for safety reasons the incubator will continue to run.

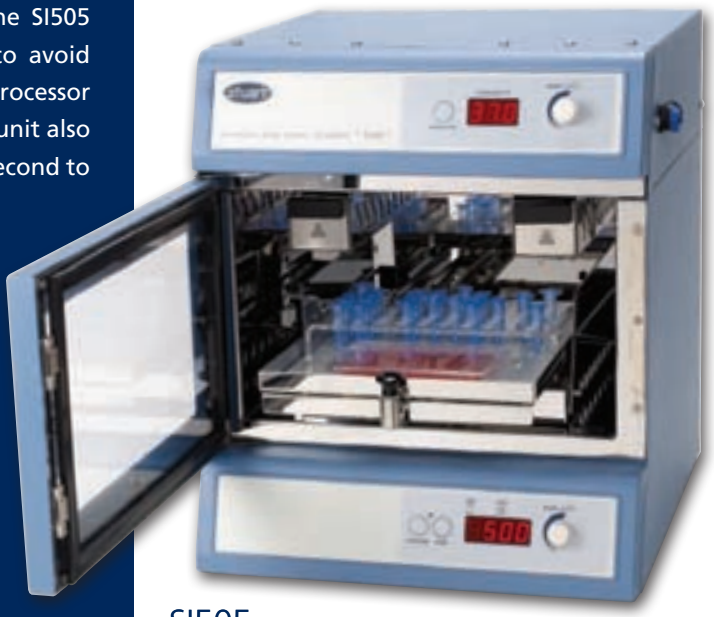
The temperature of the incubator can be set, via the digital LED control panel, between ambient temperature +7°C and 60°C. Careful control of the air distribution within the incubator ensures temperature uniformity throughout the sample chamber. To minimise sample evaporation the SI505 is supplied with stainless steel water trays, these are strategically placed within the unit to maintain a humidity of up to 80%, thus dramatically reducing sample evaporation over a 24 hour period.

The SI505's stainless steel platform is retractable, this allows easier access to samples at the back of the incubator. During operation the platform is securely locked in place, but can be easily released when required. The platform will comfortably and securely accommodate up to four microtitre plates on the non slip mat. Or sample tube racks are available which will accommodate all common tube sizes.

The SI505 also features a USB connection which allows the incubator to be connected to a PC for long term monitoring of the incubator temperature, over night of weekends for example.

Key Features

- Ideal shaking action for microtitre plates
- Combined Incubator shaker
- Optimised performance to minimise sample evaporation
- Digital display for temperature and speed
- Integrated timer
- Retractable platform for easy loading and unloading



SI505

SI505

Microtitre Shaking Incubator,

Technical Specification

Temperature range	Ambient + 7°C to 60°C
Samples	4 x Microtitre plate or 2 x microtube racks
Temperature display resolution	0.1°C
Temperature fluctuation	± 0.5°C at 37°C
Temperature variation	<0.6°C at 37°C
Temperature precision	± 0.5°C at 37°C
Speed range	250 to 1250rpm
Speed control	Digital set in 10rpm increments
Timer	min/sec, hour/min, days/hours
Orbit diameter, mm	1.5
Platform size, mm	220 x 220
Relative humidity	~80% (using water trays)
Internal dimensions, mm (w x d x h)	307 x 300 x 190
Maximum load, kg	1
Overall dimensions, mm (w x d x h)	361 x 405 x 430
Net weight, kg	22.5
Heater power, W	200W
Electrical supply	230V, 50Hz, 250W
IP Rating	31

Ordering Information

Model	Description
SI505	Microtitre plate shaker incubator
SSM5/1	Tube holder for 1.5ml tubes
SSM5/2	Tube holder for 0.5ml tubes
SSM5/3	Tube holder for 0.2ml tubes

SI30H

Hybridisation, incubator & shaker

A very versatile 20 litre hybridisation incubator and combined rocker shaker which only requires a minimum of bench space. The incubator temperature is accurately set via the easy to use encoder controls and displayed by a bright LED. Forced air circulation combined with microprocessor control means outstanding temperature uniformity.

The 'safety first' design includes an over-temperature protection system that automatically tracks the set temperature and controls the heater in the event of a fault. The smart system displays error codes indicating a fault has occurred or if the set temperature has been interrupted. The incubator also cuts power to the motor if it overheats or stalls. The incubator has a stainless steel interior, whilst the door is constructed from a double glazed panel of smoked acrylic and polycarbonate to provide radiation protection. The 'up and over' door mechanism gives excellent access to the incubator.

The SI30H is supplied with a rotisserie that accepts 7 x 40mm diameter bottles. It rotates at speeds variable between 2 and 10rpm inside the incubator. It also acts as a bottle stand when removed from the incubator. Accessory rotisseries are available to hold 2 x 75mm diameter glass bottles. Conversion of the unit to a rocker shaker is fast and easy. Simply remove the rotisserie and pull forward the platform located at the rear of the incubator.

The gentle rocking action is ideal for the washing stage of most hybridisation procedures. Rocking speed is fully variable allowing optimisation depending on application. A range of hybridisation bottles are available made from tough Pyrex® glass and leak proof PTFE faced screwcaps (see page opposite).

Technical Specification

Nominal capacity	20 litres
Temperature range	Ambient + 8°C to 80°C
Temperature fluctuation (at 37°C)	±0.1°C
Temperature variation	±0.5°C
Display type	LED
Display resolution	0.1°C
Number of rotisseries	1
Rotational speed range	2 to 10rpm
Rocker speed range	5 to 70 oscillations / minute
Internal dimensions, mm (w x d x h)	286 x 230 x 200
Overall dimensions, mm (w x d x h)	380 x 380 x 435
Net weight, kg	24
Electrical supply	230V, 50Hz, 350W
IP Rating	30

Key Features

- Compact design
- Rotisserie and rocker in one unit
- Up and over door for accessibility
- Accurate temperature control
- Advanced safety features
- Variable speed control

SI30H

SI30H

Hybridisation, incubator & shaker

Ordering Information

Model	Description
SI30H	Hybridisation incubator / shaker supplied with 1 x rotisserie SI20H/1
SI20H/1	Spare rotisserie for 7 x 40mm diameter bottles (holds 6 plus 1 in the centre)
SI20H/2	Accessory rotisserie for 2 x 75mm diameter bottles

Hybridisation bottles

For use in Stuart® Incubators

Bottle hybridisation minimises probe volumes, reduces reagent volumes and enhances signal intensity. Made from Pyrex® borosilicate glass Stuart® hybridisation bottles are robust and can easily withstand the temperatures of the most rigorous hybridisation techniques. The thermoplastic polyester caps are very rigid and will not distort during repeated heating in the incubator which can lead to leakage. The seal is made by a PTFE faced insert that covers the entire inside of the cap making very good contact with the glass thread. Available in three sizes, each bottle comes complete with cap and a care leaflet.

Ordering Information

Model	Overall length	O.D.	I.D	Wall thickness
SI20H/3	260mm	40mm	33.6mm	3.2mm
SI20H/4	260mm	75mm	68.6mm	3.2mm
SI20H/5	170mm	40mm	33.6mm	3.2mm

Note: Stuart Hybridisation bottles are suitable to be autoclaved

SI60

Incubator,

Constructed from clear Acrylic® polymer to give total visibility of samples at all times.

Designed for easy access with hinged front door panel. Each side panel has 2 x 10mm diameter plugged holes for the introduction of either gases or cables. The incubator does not have a base so that it can be placed directly over complete instruments (base is available as an accessory). Forced air circulation and electronic temperature control ensure accurately maintained conditions.

For analogue model SI60, setting the temperature is via a calibrated knob. For digital model SI60D, setting the temperature is more accurately achieved via the LCD display. The latter also gives a constant reading of actual temperature. Both models have a push switch pre-set at 37°C. Additionally there is a temperature safety cut-out set at 72°C.

The incubator is supplied flat packed, for assembly at point of use. Assembly is simple and requires only a screwdriver.

Technical Specification

Temperature range	Ambient +5°C to 60°C
Temperature fluctuation at 37°C	±0.1°C
Temp. variation between shelves	±0.3°C
Nominal volume	60 litres
Internal dimensions, mm (w x d x h)	450 x 380 x 380
Overall dimensions, mm (w x d x h)	600 x 390 x 390
Net weight, kg	11.2
Electrical supply	230V, 50Hz, 350W
IP Rating	30

Ordering Information

Model	Description
SI60	Incubator, total visibility, analogue
SI60D	Incubator, total visibility, digital
SI60/1	Acrylic® base plate
SI60/2	Plastic coated shelf/rack system with two shelves

Key Features

- Full visibility of samples
- Easy access to working chamber
- Many applications:
  - Plant propagation
  - Humidity tests
  - Simulation of tropical conditions
  - Incubation of complete instruments
  - Corrosion testing
- Choice of analogue or digital control

SI60

SI60D