

EIA PLATE/STRIP



SHAKER INCUBATOR

The Shaker Incubator was originally developed by Chelsea Technologies Group to support Amersham International's Amerlite range of diagnostics. The primary objective was to reduce assay incubation times and avoid the variability from non-uniform heating, edge and drying effects associated with forced warm air incubation techniques.

A simple keypad control panel and display allows the operator to use the incubator and shaker features separately or together, and the option exists to adjust both shaker speed and setpoint temperature if needed. The unit has four distinct incubation areas and its programmable process timers allow four sets of samples to be timed independently – each with their own audio-visual warning signal to minimise timing errors and standardise assay protocols.

The incubator system consists of an aluminium plate over a resistive heater pad, a sensor to monitor the air temperature between the plate and the lid, and an electronic control system. The power supplied to the heater by the control

system is proportional to the difference between the setpoint temperature and the actual temperature; this results in more stable temperatures around the setpoint. The temperature at the thermistor reaches 37°C within thirty minutes and typically recovers within one minute after a plate or stripholder has been placed in the unit.

The heater plate is shaken by means of a stepper motor, shaking mechanism and electronic control system. The resulting orbital motion of the heater plate makes sure that every sample is agitated to precisely the same degree – typically 700rpm oscillations of 1.5mm amplitude in a horizontal plane.

The unit is of robust, high quality design and construction for years of reliable service with little or no maintenance. Though designed specifically for EIA usage, it has proved ideal for applications in other fields, including molecular biology and microbiology. It is particularly suited to Quality Assurance applications where fine tolerances and consistent performance are of paramount importance.

SPECIFICATIONS

Incubator

Construction	Aluminium plate with resistive heater pad and four strip holder positions.
Thermal cut-out	Safety cut-out at 70°C
Performance	Air temperature in incubator reaches $37\pm 1^\circ\text{C}$ set point typically within 80 minutes of switching on. Recovers to within 1°C within 1 minute after lid has been open for 10 seconds. The option exists to vary the temperature from 5°C above ambient to 46°C .

Shaker

Motion	Stepper motor generating horizontal, orbital oscillations with amplitude 1.5mm.
Speed	Preset $700\pm 25\text{rpm}$, with the option to adjust from 600 to 900rpm in 50rpm increments.

Timers

Number	One for each of 4 strip holder positions.
Setting	Between 0 to 9hrs 59mins set from the control panel.
Timer display	Range from 9hrs 59mins to -9hrs 59mins with 30 second audio-visual alarm as timer passes zero.

Keyboard

Display	Membrane type. Vacuum florescent LED with four characters and colon.
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Power

Voltage	Switchable between 200 – 240Vac and 100 – 130Vac ranges, 50 or 60Hz.
Consumption	120VA maximum
Fuse rating	T 1.25A for either voltage range.

Operating conditions

Temperature	15 to 32°C .
Humidity	5 to 95% RH non-condensing.

Weight

9kg

Dimensions

415 x 400 x 130mm

Chelsea Technologies Group only guarantees the performance and warranties the instrument when set at 37°C and 700rpm – settings for which validation data exists. At higher speeds, and/or temperatures, an increased rate of bearing wear may result and temperature control may be subject to some variation.



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