

LE CHATELIER TEST DEVICE

THERMOSTATIC BATH DIGITALLY CONTROLLED

For testing heat expansion of cement

Standards: EN 196-3

Device specially designed for testing heat expansion of cement mortar specimens (Volume Stability Test).

Basically consists of a thermostatic bath, electronically controlled by the new **AP series control module**.

Improvements of the AP control module in the Le Chatelier test:

- Real time selectable boiling point
- Close loop control time: 0,1 ms
- Detailed test information showed in the screen: real time temperature command value, remaining time, process point, etc.
- Alarms: lack of water, heating resistance failure, temperature probe problem, etc

See AP series technical information

Glass slides containing the cement mortar are attached with a balance weight to the Le Chatelier needles, which are then inserted in the bath.

The bath has a stainless steel tank and lid with handles, and a double wall insulated with rockwool, inside wall made of stainless steel with drainage faucet located in behind lower part.

Inside it has a stainless steel perforated sheet tray with handles to lift the tray out of the bath bottom and protect the heating resistor of 4500 W.

The measuring and regulating system consists on a electronic module in the right side of the bath with 0,1° C resolution, combined with a Pt100 probe to measure temperature of the water in the bath. The thermostat range is 0 to 100°C.

The adjustment of the orders introduced by the user and the reading of the real temperature is controlled by means of one internal PID.

The thermostat is fully programmable by the user, by means of the keyboard, and so it permits to adapt the user to the specific working conditions for each test. This equipment has AUTOTUNING function for PID automatic adjustment and calculation.



From our facility this equipment is supplied with 2 preset programs:

- **First program:** 24 hours in 20°C and afterwards increase to boiling in 30 minutes keeping the boiling (see note 1) during 3 hours.
- **Second program:** (Brief method). Quick stabilization to 20° C and afterwards increment of the boiling temperature in 30 minutes keeping the boiling (see note 1) during 3 hours.

NOTE 1: The boiling temperature is adjusted in 97,5° C when the equipment is finished in our facility, this temperature corresponds to a height of 650metres over the sea level.

This data must be introduced, following the instructions in the manual, by the end user taking into account the height over the sea level above is located the laboratory. In the instruction manual is indicated the temperature values to be introduced according to the height.

TECHNICAL FEATURES

- Power supply: 1-Phase, 220 V+T, 50-60 Hz
- Total power: 4500 W
- Internal dimensions for the container:: 445 x 250 x 140 mm (length x width x depth).
- Distance between the sample holder tray to the upper edge of the container: 100 mm.
- Water volume: 14 litres.
- Capacity: Up to 9 Le Chatelier needles with all the accessories.
- External dimensions: (including digital control module and rear drainage faucet: 710 x 280 x 450mm. (length x width x depth).
- Net weight: 15 Kg. approx.

ACCESORIES

- 6 Le Chatelier needles, according to EN 196-3
- 6 Pair of glasses, according to EN 196-3 .
- 6 counterweights, for the previous glasses, according to EN 196-3.
- 6 clamps according to EN 196-3

*NOTE 2: This equipment is designed to work in conditioned laboratories to 20° C, according to the specified with the Standards provided that the water temperature to feed the bath be lower than the 20° C before mentioned because only it is made control in increasing temperature gradients.
If you need additional cooling systems, please contact us.*



IBERTEST Internacional S.A.
European Union Manufacturer
Ramon y Cajal 35.
Daganzo de Arriba, Madrid, Spain
Ph: (+34) 91 884 53 85
Fax: (+34) 91 884 50 02
sales@ibertestint.com
www.ibertestint.com