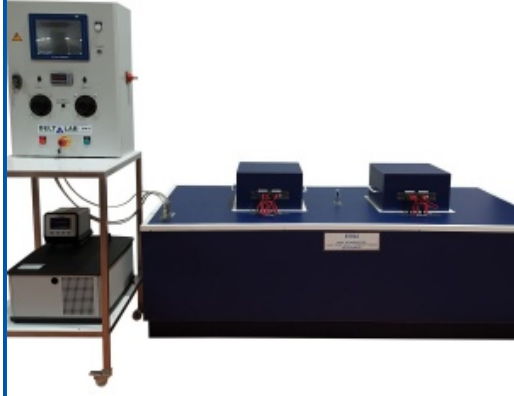


STUDY OF MEASUREMENTS OF THE THERMOPHYSICAL CHARACTERISTICS

REFERENCE : SERIE EI700



Non contractual photo

SERVICE : 220 V - MONOPHASE 50 HZ

**DIMENSIONS : 120 X 100 X 80 CM (EI701) -
200 X 100 X 80 CM (EI702)**

WEIGHT : 100KG (EI701) - 140KG (EI702)

The EI700 measuring cell uses the so-called steady-state "box" method: it consists in producing a unidirectional heat flow through a sample of material to be tested by carrying out the measurements after obtaining the steady state.

Educational Objectives :

It allows the measurement of the characteristics necessary for the evaluation of the thermal balances: the thermal conductivity, the thermal diffusivity, the specific heat, in a short time compared to other methods of one or two samples depending on the configuration of the cell. It can be used in the fields of education, research and industry.

Technical specifications :

A (highly insulated) enclosure maintained at low temperature (-5°C) thanks to a glycoled water cooler, powered by a cryostat. One or more boxes, depending on the configuration chosen (EI701 or EI702):

- for the measurement of thermal conductivity, the box is coated on the inner part of its upper face with a heating film whose heat emission is regulated by means of a rheostat;
- for the measurement of thermal diffusivity, the box is equipped with an incandescent lamp.

The mass heat is determined from measurements of thermal conductivity and diffusivity. The entire wiring of the temperature probes and the heating film supply leads to a terminal block that is connected to a measuring console supplied with the device. For testing liquid or powdery materials (powders, sands), a sealed frame (option EI700C2) enclosed by two copper plates in which the liquid or solid to be tested is placed. Thermal diffusivity can be studied with the EI700C1 option. The temperatures to be measured are in the vicinity of the ambient temperature, but if necessary, materials can be tested up to about 80°C. The sample size is 270 mm x 270 mm, with a thickness between 30 mm and 70 mm.

The apparatus is well suited for repetitive measurements on building materials, insulation, sand, powders, food liquids, etc... depending on the equipment chosen.

EI701: 1-box conductivity measuring cell
EI702: 2-box conductivity measuring cell

OPTIONS :

EI700C1: Complement for diffusivity measurement EI700C2: Powder Material Test Frame