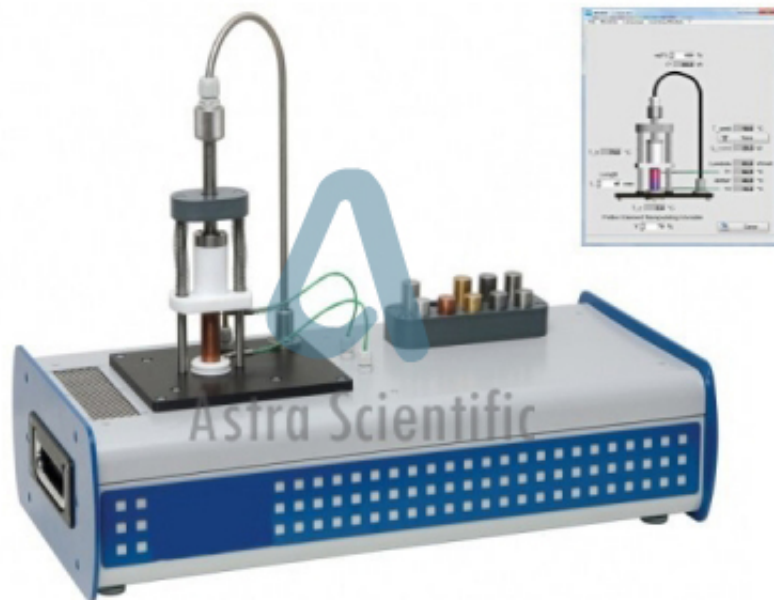


Product Name :
Astra Scientific Computerized Composite Wall Apparatus

Product Code :
HeatMassLab0004



Description :

Astra Scientific Computerized Composite Wall Apparatus

Technical Specification :

The Computerized Composite Wall Apparatus offers basic experiments for targeted teaching on the topic of heat conduction through various metals. To this end, one of eleven samples is used. The upper region of the sample is heated by an electrical heater and the lower section cooled by a Peltier element. Heat conduction occurs through the respective sample from top to bottom. Two samples can be inserted into the experimental unit at the same time, in order to investigate thermal conductivity through multi-layered metals. Perfectly matched components ensure rapid heating and trouble-free measurements.

The temperature of the metal samples is taken on the top and bottom by means of thermocouples. The microprocessor-based instrumentation is well protected in the housing. The software consists of a software for system operation and for data acquisition and an educational software. With explanatory texts and illustrations the educational software significantly aids the understanding of the theoretical principles. The unit is connected to the PC via USB.

FEATURES:

- Time dependency until the steady state is reached
- Calculate the thermal conductivity λ of different metals
- Calculate the thermal resistance of the sample
- Heat transfer with different samples connected in series
- Effect of sample length on heat transfer
- Effect of different metals on heat conduction
- Functions of the software: educational software, data acquisition, system operation

SPECIFICATION:

- Continuously adjustable heater
- Peltier element as cooler
- 11 samples made of 5 metals, different lengths
- Peltier element

Cooling capacity 56,6W

- Heater

Heating power 30W

Temperature limitation: 150°C

- Samples \varnothing 20mm
- Length between measuring points

5x 20mm (copper, steel, stainless steel, brass, aluminum)

5x 40mm (copper, steel, stainless steel, brass, aluminum)

1x 40mm with turned groove (aluminum)

- Measuring ranges

Temperature: 4x 0...325°C

Heating power: 0...50W



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