

Product Name :
Computerized Composite Wall Apparatus

Product Code :
HEMT0003



Description :

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.

With explanatory texts and illustrations the educational software significantly aids the understanding of the theoretical principles.

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.

The unit is connected to the PC via USB.

FEATURES:

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

Time dependency until the steady state is reached

SPECIFICATION:

Continuously adjustable heater

Peltier element as cooler

11 samples made of 5 metals, different lengths

Samples Ø 20mm

Peltier element :

Cooling capacity: 56,6W

Heater :

Heating power: 30W

Temperature limitation: 150°C

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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