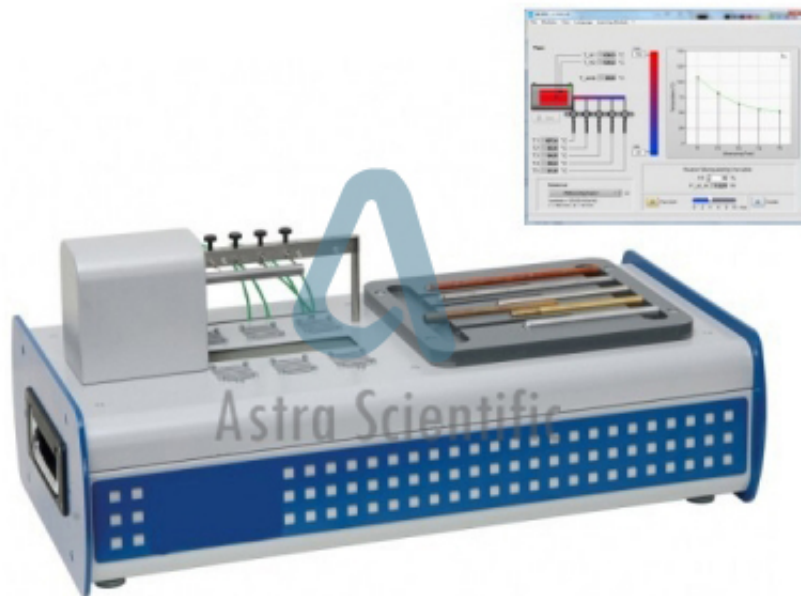


Product Name :
Astra Scientific Computerized Heat Pipe demonstrator

Product Code :
HeatMassLab0005



Description :

Astra Scientific Computerized Heat Pipe demonstrator

Technical Specification :

The Computerized heat pipe demonstrator Apparatus offers Heat conduction and convection are among the three basic forms of heat transfer and often occur together.

At the heart of the unit are different metal samples. The samples are placed on a heater and are heated on one side. The heat is conducted through the sample and dissipated to the environment. The sample used behaves like a cooling fin. In addition there are fans below the sample. The flow rate of the fans is continuously adjustable in order to influence the convective heat transfer. The airflow is conveyed evenly around the sample. Consequently, besides conducting the experiment with still air (free convection), it is also possible to conduct experiments with flowing air (forced convection). The effect of different materials on heat conduction is demonstrated by comparing different samples.

The experimental unit is equipped with five temperature sensors. Heating power and flow velocity of the airflow are adjusted and displayed via the software.

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:

- Effect of heat conduction and convection on heat transfer
- Effect of free and forced convection on heat transfer
- Calculate convective heat transfers
- Effect of different materials on heat conduction
- Effect of sample length on heat transfer
- Effect of heat conduction and convection on heat transfer
- Experiments with still air on free convection
- Functions of the software: educational software, data acquisition, and system operation

SPECIFICATION:

- Heater

Heating power: 30W

Temperature limitation: 160°C

- 6x fan

Max. Flow rate: 40m³/h

Nominal speed: 14400min⁻¹

- 6 samples made of different materials and with different lengths

4x samples, short

Length dissipating heat: 104mm

Heat transfer area: 32,6cm²

Copper, aluminum, brass, steel

2x samples, long

Length dissipating heat: 154mm

Heat transfer area: 48,4cm²

Copper, steel

- Measuring ranges

Flow velocity: 0...10m/s

Temperature: 8x 0...325°C

Heating power: 0...30W

- Required for Operation

230V, 50Hz, 1 phase

230V, 60Hz, 1 phase; 120V, 60Hz, 1 phase



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