LAB ENGINEERING

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Product Name : Computerized Heat Pipe demonstrator	**Product Code :** HEMT0004

Description :

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.
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.
Heating power and flow velocity of the airflow are adjusted and displayed via the software.
The unit is connected to the PC via USB.
FEATURES:
Calculate convective heat transfers

Effect of heat conduction and convection on heat transfer
Effect of free and forced convection on heat transfer
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 :
2x samples, long
Length dissipating heat: 154mm
Heat transfer area: 48,4cm2
Copper, steel
4x samples, short
Length dissipating heat: 104mm
Heat transfer area: 32,6cm2
Copper, aluminum, brass, 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