

Product Name :
Free and Force Convection Apparatus

Product Code :
CHINAELABC2620009



Description :

Free and Force Convection Apparatus

Technical Specification :

FEATURES:

Experimental determination of the Nusselt number
Free and forced convection
Investigation of the relationship between flow formation and heat transfer during experiments
Description of transient heating process
Functions of the software: educational software, data acquisition, system operation

Calculation of convective heat transfer at different geometries :

Flat plate
Cylinder
Tube bundle

Calculation of typical characteristic variables of heat transfer :

Nusselt number
Reynolds number

SPECIFICATION:

Air duct :
Flow cross-section: 120x120mm
Height: approx. 0,6m
Heating elements, temperature limitation: 90°C

Tube bundle :

Number of tubes: 23

One tube in variable position is heated

Heating power: 20W

Heat transfer area: 0,001m²

Cylinder with an even temperature at the surface :

Heating power: 20W

Heat transfer area: 0,0112m²

Plate :

Heating power: 40W

Heat transfer area: 2x 0,01m²

Cylinder with heating foil to investigate the local heat transfer :

Heating power: 40W

Heat transfer area: 0,0112m²

Axial fan :

Max. Flow rate: 500m³/h

Max. Pressure difference: approx. 950Pa

Power consumption: 90W

Measuring ranges :

Air velocity: 0...10m/s

Temperature: 4x 0...325°C

Heating power: 0...50W

Required for Operation :

230V, 50Hz, 1 phase

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



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