



Email : sales@laboratoryinstrumentindia.com

Product Name :
Computer Controlled Radial Heat Conduction

Product Code :
LBNY-0005-1020003



www.laboratoryinstrumentindia.com

Description :

The Radial Heat Conduction accessories have been designed to demonstrate the application of the Fourier rate equation to simple steady-state conduction radially through the wall of a tube.

Hardware Description:

The accessory comprises a solid disk of material, which is heated at the centre and cooled at the periphery to create a radial temperature difference with corresponding radial flow of heat by conduction.

Six K-type thermocouples are positioned at different radii in the heated disk to indicate the temperature gradient from the central heated core to the periphery of the disk.

The arrangement, using a solid metal disk with temperature measurements at different radii and heat flow radially outward from the centre to the periphery, enables the temperature distribution and flow of heat by radial conduction to be investigated.

The heater power and the cooling water flow rate are controlled via, either from the front panel or from the computer software. These are controlled manually.

A control valve permits the flow of cooling water to be varied, if required, over the operating range of 0-1.5l/min.

The cooling water flow rate is measured by a turbine type flow sensor .

An optional cooling water flow rate sensor Set 2 is available upon request for the connecting directly into the service unit.

The radial distance between each thermocouple in the disk is 10mm.

Quick-release connections facilitate rapid connection of the cooling tube to a cold water supply. A pressure regulator is incorporated to minimise the effect of fluctuations in the supply pressure.

Technical Specification :

Technical Specifications:

The heating section, cooling section and one of the intermediate sections are fitted with thermocouples (eight in total) evenly spread along the length of the assembled conduction path

A small-scale accessory to introduce students to the principles of linear heat conduction, and to enable the conductivity of various solid conductors and insulators to be measured

Comprises a heating section, a cooling section, plus four intermediate section conductor samples and two insulator samples

All sections are thermally insulated to minimise errors due to heat loss

Includes a water pressure regulator and a manual flow control valve

Heater power variable up to 60W

Heating and cooling sections, 25mm diameter

Water flow rate variable up to 1.5 l/min

Computer-controlled unit includes an electronic proportioning solenoid valve to control the cooling water flow rate and a water flow meter

A comprehensive instruction manual is included.



Laboratory Instrument India