

Product Name :
Radial Heat Conduction**Product Code :**
Transfer Lab0012**Description :**

Radial Heat Conduction

Technical Specification :

Radial Heat Conduction

Specification of Radial Heat Conduction

- A small-scale accessory to introduce students to the principles of radial heat conduction, and to allow the conductivity of a solid brass disk to be measured

- Comprises a brass disk with a heater at the centre and a cooling water tube attached to the periphery.
- Six thermocouples measure the temperature gradient between the heated centre and the cooled periphery of the disk.
- Thermally insulated to minimize errors due to heat loss.
- Includes a water pressure regulator and a manually operated valve to control the flow rate.
- Includes an electronic proportioning solenoid valve to control the cooling water flow rate, a pressure regulator and a water flowmeter.
- Heater power variable up to 100 Watts.
- Water flow rate variable up to 1.5 litres/ minute.
- Conduction disk is 110mm diameter and 3.2mm thick

Technical Details:

- 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 radial distance between each thermocouple in the disk is 10mm. Quick-release connections allow rapid connection of the cooling tube to a cold water supply. A pressure regulator is incorporated to minimize the effect of fluctuations in the supply pressure. A control valve allows the flow of cooling water to be varied, if required, over the operating range of 0 -1.5 litres/min. The cooling water flowrate is measured by a turbine type flow sensor .

Electrical and Electronics

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