

Product Name :
Heat Pipe Demonstrator**Product Code :**
ALABS-A143-035**Description :**

Heat Pipe Demonstrator

Technical Specification :

Heat Pipe Demonstrator

It is a super-conducting device and involves the transfer of heat by boiling and condensation of a fluid and hence transfer of heat takes place under nearly isothermal condition. In this apparatus the comparison of heat pipe with the copper pipe as good conductor of heat and with the stainless steel pipe as same material of construction is made. It consists of three identical cylindrical conductors in respect of geometry.

One end of these is heated electrically while there are small capacity tanks acting as heat sinks at the other end. The unit consists of a heat pipe, a copper pipe and a stainless steel pipe.

The performance of the heat pipe as a super-conducting device can be studied well in terms of the temperature distribution along the length at a given instant and can be compared with other two members. Nearly isothermal temperature distribution and fast rise of temperature in heat sink tank reveals the heat pipe superiority over the conventional conductors.

Experimentation:

To demonstrate the super thermal conductivity of Heat Pipe and to compare its working with best conductor i.e. Copper pipe & Stainless steel pipe as same material of construction.

To plot the temperature v/s time response of pipes.

To plot the temperature distribution along the length of pipes

Utilities required:

Electricity Supply : 1 Phase, 220 V AC, 4 Amp.

Table for set-up support.

Technical Specifications:

Pipes 1st: Heat pipe made of stainless steel

Pipes 2nd: Made of copper

Pipes 3rd: Made of Stainless steel

Size: 32mm dia, 350 mm length (Approx.)

Heat Sink: Material Stainless steel.

Working fluid in heat pipe: Distilled water

Heaters: Nichrome Wire Band Type

Digital Voltmeter: 0-300 Volts.

Digital Ammeter: 0-2 Amp.

Variac: 0-230 V, 4 Amp.

Digital Temp. Indicator: 0-2000 C, with multi-channel switch

Temperature Sensors: RTD PT-100 type

Instruction Manual: An ENGLISH instruction manual will be provided along with the Apparatus



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