

Description

Heat Pipe Apparatus

Heat pipe is an interesting device, which is used to transfer heat from one location to another.

The apparatus consists of three pipes, viz. A heat pipe, copper pipe and stainless steel pipe.

All the pipes have same physical dimensions.

Copper and stainless steel pipes serve the purpose of comparison of heat pipe performance.

All pipes are mounted vertically with a band heater at lower end and water filled heat sink at upper end.

Nearly isothermal operation of heat pipe is clearly visualized from longitudinal temperature distribution of the pipe.

Specifications:-

1. Heat pipe – Stainless Steel pipe, 25 mm O.D., 450 mm. Long. Sealed at both ends, evacuated and filled partially

with distilled water – one No.

2. Copper and stainless steel pipe of same size as that of heat pipe – one each.

3. Equal capacity heater at bottom end of each pipe.

4. Water filled heat sinks at upper end of each pipe.

Measurements and controls:-

a) Dimmerstat to control heat input to all the heaters:- 4 amp. Capacity One No.

b) A voltmeter and an ammeter to measure input to heaters One each.

c) Multichannel digital temperature indicator to measure temperatures along the length of pipes. Four thermocouples are provided on each pipe.

v Thermometers to note down water temperatures in heat sinks- 3 Nos.

Services Required:-

230 V.A.C. Single Phase supply.

Floor Area = 1 m X 0.5m X 0.5 m height.
