

THERMAL CONDUCTIVITY OF LIQUID (EE-1564)

The Experimental setup consists of a liquid chamber, which is made up of copper. One end of which is heated by an electric heater while the other end projects inside a cooling water jacket. The middle portion liquid jacket has the provision to make drain, charging and releasing air from the liquid. Three thermocouples are placed on the upper plate for temperature measurement as same as the lower plate. A heater is provided with dimmerstat for controlling the heat input. Water under constant head is circulated through the jacket and its flow rate can be measured using measuring jar and stop watch. The whole assembly shall be kept in a chamber and properly insulated.

EXPERIMENTS:

- To determine the thermal conductivity of given liquid

UTILITIES REQUIRED:

- Water supply 3 lit/min (approx.)
- Drain
- Electricity Supply: 1 Phase, 220 V AC 2 Amp.
- Table for set-up support



TECHNICAL DETAILS:

- Copper plate (2 Nos) : Dia 170 mm
- Liquid chamber : Dia 170mm, height 25mm
- Cooling Chamber : Made of Aluminium for water circulation, 2 Nos.
- Control Panel : Digital Voltmeter (0-300V)
Digital Ammeter (0-2A)
Dimmerstat (0-300V), 2A
Digital Temp. Indicator (0-200°C) with multi channel switch
ON/OFF switch, mains indicator etc.
- Temperature Sensors : RTD PT-100type (6Nos.)