



#### **Brief construction details:**

Tesca - Thermal Conductivity Apparatus is designed to determine Thermal Conductivities of insulating materials in the form of slabs. The Apparatus consists of main central heater sandwiched between the test specimens. Cooling plates are provided on the either side of the specimen. Single identical specimen are Clamped between heaters and cooling plate. Ring guard heater ensures Un-directional heat flow through specimen.

#### **Salient Features : (For single specimen testing):**

- Tesca - thermal conductivity test apparatus by guarded hot plate method is based on the steady-state method and is able to measure 30 cm x 30 cm test samples having thickness ranging from a 5 cm to 10 cm.
- Design concept according to Indian Standard (IS : 3346-1966) and Applicable ASTM Standard ASTM C177
- External body is manufactured from Mild steel material, which is powder coated in attractive shades.
- Specimen to be tested is placed in chamber such that it gets sandwiched between two heat flux sensors as per ASTM C177 guidelines.
- Unit is equipped with 5 different thermocouples for temperature measurement on both sides of the test specimen and guard heaters. (In total 10 thermocouples)
- Cooling is obtained by in-built refrigeration system, which provides efficient cooling temperature as per test requirement.
- Emerson / Kirloskar make or equivalent refrigeration system (CFC Free)
- 7" touch screen HMI & PLC Operation
- Linear movement (UP & DOWN) for height adjustment with the help of linear actuator
- Facility to feed dimensions of the samples to calculate the K-value.
- Direct reading of K-value in w/m k (No further calculation required)
- High temperature fiber glass box Insulation (8 mm thick) along with glass wool bag Insulation around set-up
- Complete panel mounted electrical controls and measurement. All control accessories are within reach.
- Operation on 230 Volts, 50 Hz, AC Supply
- Suitable for industrial applications such as thermal conductivity measurement of AAC Blocks.

Note: Specifications are subject to change.

Technical Specifications	
Temperature Range	10 to 200° C
Thermal Resistance Range	0.1 ~ 8.0 m2K/W
Co-efficient of thermal conductivity	0.1 to 2 w/m k
Repeatability	0.5%
Accuracy	± 1-3 %
Refrigerant	R134A - CFC Free
Plate Temperature Control	Through mini-chiller system
Central Heater capacity	500 watts, sandwiched between two copper plates
Central heater dimensions	150 mm x 150 mm
Ring Guard Heater capacity	1500 watts between two copper plates
Chiller System	Cooling chamber with circulation arrangement
Test specimen size	30 x 30 x 10 cm3
Overall Dimensions	1170 X 740 X 1000 (L X W X D) mm

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