

STEFAN BOLTZMANN APPARATUS (EE-1569)

The apparatus is designed to determine, the Stefan Boltzmann constant. The apparatus consists of a hemisphere fixed to a Bakelite plate, the outer surface of which forms the jacket to heat it. Hot water to heat the hemisphere is obtained from a hot water tank, which is fixed above the hemisphere. The copper test disc is introduced at the center of hemisphere. The temperatures of hemisphere and test disc are measured with the help of temperature sensors.

EXPERIMENTS:

- Determination of Stefan Boltzmann constant and study the effect of hemisphere temperature on it

UTILITIES REQUIRED:

- Electricity Supply : I Phase. 220 V AC, 2 kW.
- Table for set-up support

TECHNICAL DETAILS:

- Hemisphere : Dia.- 200 mm (approx.) made of Copper
- Jacket : Dia.- 250 mm (approx.) made of Stainless Steel
- Test Disc Size : 20 mm Dia. x 1.5-mm thickness made of Copper
- Water Tank : Stainless steel 12 Ltrs. cap
- Heater : Nichrome wire immersion heater
- Temperature sensors : RTD PT-100 type 2 Nos.
- Control panel : Digital Temperature Controller : 0 to 199.9°C (for water tank),

Digital Temperature Indicator : 0 to 199.9°C with multi channel switch, On/off switch. Mains Indicator etc.

- The whole set-up is well designed and arranged on a good quality painted structure.

