Computerized Stefan Boltzman Apparatus (Product Code: HMTC10)



Features

- Extensive range of Experiments
- Comprehensive teaching manual
- Three-year warranty
- Esthetically designed and finished Rig.
- High Quality instrumentation
- To determine the values of Stefan Boltz man constant for radiation heat transfer

Product Description

This apparatus is designed to determine Stefan Boltzman constant for radiation heat transfer. The apparatus consists of a flanged copper hemisphere fixed on a flat non-conducting plate. A test disc made of copper is fixed to the plate, thus the test disc is completely enclosed by the hemisphere. The outer surface of the hemisphere is enclosed in a vertical water jacket used to heat the hemisphere to a suitable constant temperature. Three Cr-Al type thermocouples are attached at three strategic places on the surface of the hemisphere to obtain the temperatures. The disc is mounted on a Bakelite sleeve which is fitted in a hole drilled at the center of the base plate. Another Cr-Al thermocouple is fixed to the disc to record its temperature

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Product / Component Specification

Water tank	Stainless steel approx. (10 liters)
Outer jacket	250 mm Dia
Base plate disc	250mm Dia x 12mm thick (Hylam)
Hemisphere	200mm Dia, Copper
Digital temperature	0-300 Deg (K Type)
Thermocouple	K type
Heater	1.5 Kw, immersion type
Stop watch	Digital
Test Disc	Copper

Data Acquisition card

Analog Input	
Differential Channels	12
Resolution	12 bits
Sample Rate	200 Ks/s
Max Voltage	5 V
Number of Ranges	4
Simultaneous Sampling	Yes
On-Board Memory	5120 samples
Analog Output	
Channels	2
Digital I/O	
Input-Only Channels	30
Output-Only Channels	12
Timing	Software
Logic Levels	TTL
Maximum Input Range	0 V - 5V
Maximum Output Range	0 V - 3.3 V
Counter/Timers	
Counters	2
Max Source Frequency	84 MHz
Resolution	12 bits
Logic Levels	TTL
Total DC output Current on all I/O lines	130mA

Measurement of Temperatures at different points

Type Range Signal conditioning/transmitter Location	"K" 0-300°C Standalone Hemispherical Board Temperature
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Type Range Signal conditioning/transmitter Location	"K" 0-300°C Standalone Specimen Temperature
Type Range Signal conditioning/transmitter Location	"K" 0-300°C Standalone Water Temperature

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