

M259B

Sweating Guarded Hotplate

The Sweating Guarded Hotplate simulates the heat and mass transfer processes which occur next to human skin. Measurement of thermal resistance and water vapor resistance under steady state conditions of a range of products including fabrics, films, coatings, foams and leather including multi-layer assemblies.

Principles

The specimen to be tested is placed on an electronically heated porous plate with conditioned air ducted to flow across and parallel to its upper surface.

Installation

The instrument includes the test enclosure into which is constructed the measuring unit and thermal guard, and in which the ambient air temperature, air speed and relative humidity are controlled, However the entire system must be operated in conditions conforming to ISO 139:2005 Textiles-Standard Atmospheres for Conditioning and Testing.

Utilities Required

Requires 20 amp single phase electrical supply, Supply of triple distilled water (not plumbed).

- Thermal resistance (Rct) test range: 0.002 - 2.0 m² K/W.
- Vapor resistance (Ret) test range: 5 - 1000 m² Pa/W.
- Maximum test specimen sizes: 300 x 300mm for specimen thickness < 5 mm, 214 mm x 214 mm for test specimen thickness from 5-70 mm.
- Hotplate: 3mm porous bronze plate 200 mm x 200 mm.
- Hotplate temperature control at 35 °C ± 0.1 °C.
- Thermal guard temperature control at 35 °C ± 0.1 °C.
- Enclosure: Conditioned air flows parallel to Hotplate and Thermal Guard.
- Air duct height: 55 mm ± 3 mm above the working platform.
- Air temperature range 18 °C - 40 °C ± 0.1 °C.
- Relative humidity 30-70% ±3%
- Air temperature accuracy during test ± 0.5 °C for thermal resistance and vapor resistance < 0.5 m² K/W and 100 m² Pa/W.
- Air flow speed 1.005 m/s, measured 15mm above the working platform at 20 °C air temperature.
- Supplied with laptop computer, USB connection cable and M259 software disc.



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Specifications	M259B
Weight	500 kg
Dimensions	1260 x 950 x 1800 mm (WxDxH)
Standards	ISO 11092, ASTM F1868, GB 11048