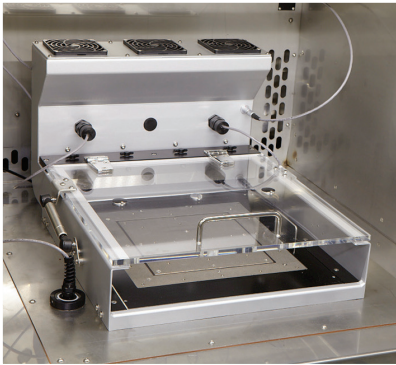


Sweating Guarded Hotplate Integrated System (iSGHP)



The Sweating Guarded Hotplate, or “Skin Model”, is used to produce accurate, repeatable measurements of thermal resistance (R_{ct}) and vapor permeability (R_{et}) for textiles as per ASTM F1868, ISO 11092, and ASTM D1518.

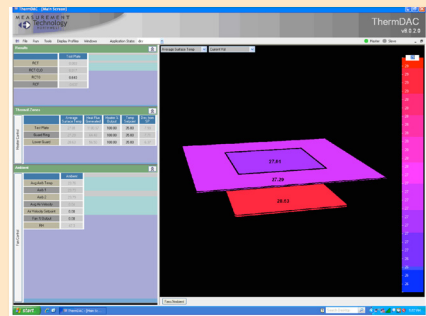
The iSGHP-8.2 and iSGHP-10.5 systems include hotplate with integral sweating surface, computer controlled variable airflow rates, gravity fed fluid supply system, and ambient temperature and humidity probes.

The system’s integrated chamber features an insulated, air-tight stainless steel interior and a compact, space-efficient design. Its ergonomic layout yields a comfortable working height of approximately 42” (107cm) above the floor, and other thoughtful touches include a high intensity LED cabinet light, a removable top shelf for the preconditioning of fabric samples, and a large insulated door with viewing window.

For sweating tests the SGHP hotplate utilizes the chamber’s water source, and a unique porous wicking assembly on both hotplate and guard ring ensures a uniform wetted surface. An adjustable height airflow plenum easily accommodates a variety of sample thicknesses, and our ThermDAC control and data logging software makes testing as simple as clicking the mouse and walking away.

FEATURES AT A GLANCE

- Electronics-grade copper test plate and guard ring with ultra-stable resistance wire heating for uniform heat flux.
- Systems include two ambient temperature sensors, one RH sensor, and one air velocity sensor.
- Gravity fed fluid supply regulates flow volume for any sample.
- Chamber integrates to the SGHP-8.2 or SGHP-10.5 sweating hotplate using a sealed lower flange.
- 15°C to 55°C temperature range, stable to 0.1°C.
- 30% to 70% R.H. range (limited by dewpoint temperature).
- An optional de-ionizing water cartridge system allows chamber to use local tap water supply.
- Systems include a new Dell PC computer with exclusive ThermDAC control software. This intuitive, user-friendly, Windows-based application provides full thermal control, fault detection, system configuration and calibration, real-time data display, and data logging capabilities.



Sweating Guarded Hotplate, Integrated System (iSGHP)

SGHP Specifications

- 8" square test plate with 2" guard ring (SGHP-8.2)
 - Specimen sample size 12"x12"
- 10" square test plate with 5" guard ring (SGHP-10.5)
 - Specimen sample size 20"x20"
- Pure copper test plate and guard ring
- Variable height airflow plenum hood
- Computer controlled, variable speed fans
- Dell PC laptop computer
- ThermDAC control software
- Ultra-stable resistance wire heating
- Two ambient temperature sensors
- One relative humidity sensor; one air velocity sensor
- Gravity-fed reservoir and fluid supply system
- One year warranty

Measurement Range and Accuracy

- Intrinsic thermal resistance range 0.002 to $2.0 \text{ K}\cdot\text{m}^2/\text{W}$
- Intrinsic evaporative resistance range 0 to $1000 \text{ Pa}\cdot\text{m}^2/\text{W}$
- $\pm 0.1^\circ\text{C}$ temperature measurement
- $\pm 3\%$ Relative humidity
- $\pm 2\%$ Air velocity
- $\pm 1\%$ Power measurement

Chamber Specifications

- Internal Dimensions: 30"W x 31"D x 25"H (76cm x 79cm x 63.5cm)
- External Dimensions: 36"W x 39"D x 70"H (91cm x 99cm x 178cm)
- Weight: 985 lbs (448 kg)
- Power Required: 220/240 VAC, 1 Phase 50/60 Hz at 30 Amps (Standard model)
- Recommended Circuit Breaker: 40 Amps
- Water Supply: Demineralized or Distilled water (plumbed or reservoir models available)
- Optional DI filter cartridge
- Recirculating airflow stream is achieved by way of a plenum located behind the workspace
- Includes insulated door window and LED light
- Manual control or ThermDAC software control
- One year warranty

Performance and Accuracy

- Steady-state temperature range: 15°C to 55°C
- 30% to 70% R.H. (limited by dewpoint temperature)
- $\pm 0.1^\circ\text{C}$ Temperature
- $\pm 3\%$ Relative Humidity

ThermDAC Control Software

ThermDAC is a user-friendly, intuitive, Windows-based application providing full device control, fault detection, data logging and analysis capabilities. System configuration, calibration, and diagnostic functions can also be carried out within ThermDAC.

Several specific software features are included for our hotplate systems. User-defined tests allow operators to define non-standard test conditions and custom tolerance criteria. Multiple graph displays can be viewed, with zooming to view device or ambient conditions in detail. Real-time statistical functions can be applied to the test data over any user-selected time range.

