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THE WORLD'S MOST ADVANCED  
INSTRUMENTS FOR TEXTILE AND BIOPHYSICAL TESTING

## SWEATING DYNAMIC HOTPLATE (iSDHP/SDHP)

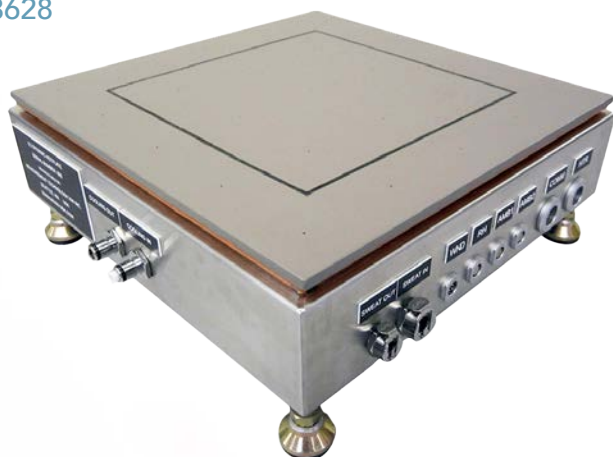
A sweating guarded hotplate, or "skin model," produces accurate, repeatable measurements of the thermal resistance ( $R_{ct}$ ) and vapor permeability ( $R_{et}$ ) of textiles when tested under steady-state conditions. Traditional hotplates run into problems when used to test the performance of textiles in conditions that are not steady-state.

Thermetrics Integrated Sweating Dynamic Hotplate 8.2, (iSDHP) is an exciting evolution in hotplate technology that allows for measuring  $R_{ct}$  and  $R_{et}$  in standard situations while providing the ability to measure both positive or negative heat flux in dynamic (transient) environments or situations.

The innovative dynamic sensor technology used in our iSDHP generates instantaneous surface heat-flux measurements, and as a result this instrument can be used for evaluating phase change materials (PCM) tests of heated fabrics and pads, or for textile testing under sustained solar loads and elevated ambient temperatures (up to 50°C)!

### Test Methods Supported

- ASTM F1868 (all models)
- ASTM F3628



The system's integrated chamber features an insulated stainless steel interior and a compact, space-efficient design. Its ergonomic layout yields a comfortable working height of approximately 42 in. (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. The chamber system can be purchased with interchangeable "dynamic" SDHP and "traditional" Sweating Guarded Hotplate (SGHP) test plates, for added compliance with ISO 11092 and ISO 13029. All iSDHP systems are complete, ready-to-use instruments including hotplate, chamber, laptop PC, and exclusive ThermDAC control software.





### iSDHP Specifications

- Intrinsic thermal resistance: 0.001 to 2.0 K•m<sup>2</sup>/W
- Intrinsic evaporative resistance: 0 to 1000 Pa•m<sup>2</sup>/W
- ± 0.1°C temperature measurement
- ± 3% Relative humidity
- ± 2% Air velocity
- ± 1% Power measurement
- Proprietary composite test plate(s), guard ring(s)
- Resistance wire heaters and sensors
- Integrated heat flux sensor
- Two ambient temperature sensors
- One relative humidity sensor
- Sweating delivery range: 0-1,000 ml/hr/m<sup>2</sup>
- Signal conditioning electronics
- Power and control cabling
- Laptop PC with ThermDAC Control Software Options

### Options:

- Variable height airflow hood with variable speed fans ASTM F3628 (included with iSDHP, option for standalone SDHP)
- Integrated climate chamber
- Alternate-zone formats are available
- Reference fabric for ASTM F1868 Part C testing
- Cold capable upgrade (only standalone units)
- Cold Plate accessory for thermal conduction tests

### iSDHP Dimensions

- 8 in. (20.3 cm.) square test plate
- 2 in. (5 cm.) guard ring
- Sample size: 12.2 in. ± 0.2 in. (31 ± 0.5 cm.)
- Stand-alone only: Minimum chamber size: 26 x 24 x 24 in. (66 x 61 x 61 cm.)

### iSDHP Feature Highlights & Benefits

- Test zone with lateral and lower thermal guards
- Composite test plate and guard ring with ultra-stable resistance wire heating to ensure uniform heat flux
- Two ambient temperature sensors and one relative humidity sensor
- Microprocessor-controlled fluid supply system precisely regulates flow volume for any sample
- Optional adjustable height airflow hood, with computer-controlled variable speed fans and air velocity sensor
- Dynamic heat flux sensing capable of positive/negative heat flux in real time
- Backside cooling - Allows you to go into higher heat loads

### Base Products Include:

- Dynamic hot plate with heaters and sensors
- Integrated environmental chamber
- Control electronics
- Two ambient temperature sensors
- Computer controlled air flow plenum
- Laptop loaded with ThermDAC control software
- Air velocity sensor
- Computer-controlled sweating system
- Power and control cabling
- One relative humidity sensor
- Recirculating chiller and supply tubes
- Standard one-year warranty



**ThermDAC Control Software**

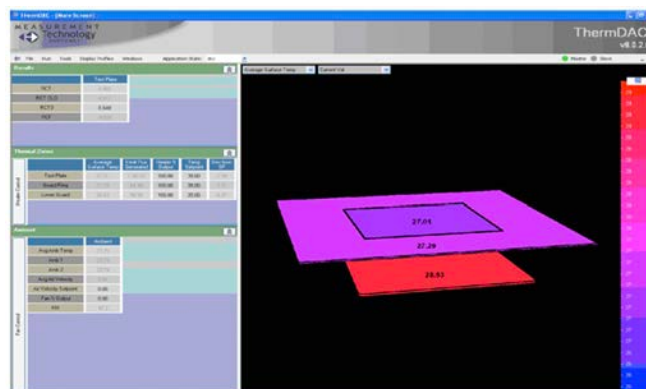
ThermDAC is an engineered user interface for thermal manikin systems providing real-time device control, automated testing, and flexible display and logging capabilities, including:

- Real-time display of instrument data and user control of device outputs
- User-programmable test configurations, tolerances, and stability criteria
- Automatic steady-state detection
- Zoomable time-history graph of multiple device and ambient variables
- Real-time statistical analysis over any user-selected time range
- Logging of raw data, statistical analysis, integrated report generation
- Device calibration and fault detection

**Service**

All systems come with a one year warranty. Please ask about these service options:

- Startup installation and training
- Extended warranty
- Annual Service Care Plan - a periodic maintenance and service contract designed to keep your Thermetrics equipment calibrated and in top operating condition



431 - Hotplate - Dynamic - Sweating - Integrated (iSDHP)	Item #	Description	Product Name
<b>Standard Base Product</b>	<b>19-43103</b>	<b>Integrated Sweating Dynamic Hotplate 8.2 w/ Plenum (ASTM F1868 &amp; F3628) - iSDHP</b>	<b>431-2XX_D.C</b>
<b>Standard Options</b>	20-00452	Reference Fabric 8.2, Calibrated, ASTM 1868 Part C	—
	20-00878	DI Filtration System	—
	20-01263	Chamber Recirculation Kit, Standalone, 220V	—
	20-01184	Chamber Recirculation Kit, Standalone, 120V	—
<b>Custom Options</b>	XX-XXXX	Integrated Cold Plate, 8.2	—
	20-00884	Swappable iSGHP 8.2 Core	—
	XX-XXXX	Water Cooled Refrigeration	—

306 - Hotplate - Dynamic - Sweating - Standalone (SDHP)	Item #	Description	Product Name
<b>Semi-Custom Base Product</b>	<b>19-30605</b>	<b>Sweating Dynamic Hotplate 8.2 - SDHP</b>	<b>306-2XX_C.D</b>
<b>Standard Options</b>	20-00422	Cold Plate, 8.2	—
	20-00452	Reference Fabric 8.2, Calibrated, ASTM 1868 Part C	—
	XX-XXXX	Plenum (ASTM F1868 Dry Airflow Testing)	306-2XX_C.D.p
<b>Custom Option</b>	XX-XXXX	Cold Capable	—

Don't see what you need above? Contact Thermetrics to customize your perfect system. Keep your dynamic hotplate in tip-top shape. Discuss service plan options and point-of-sale discounts with us at [sales@thermetrics.com](mailto:sales@thermetrics.com).