

Simon Thermal Manikin



“Simon” thermal manikin system is designed to meet the garment evaluation needs of sleeping bag manufacturers and research/testing institutes in accordance with relevant ASTM and ISO standards.

Simon is jointed at the hips and shoulders with simplified hands and feet and modular control electronics to help lower the system cost while retaining the advanced features that have made Thermetrics manikins the industry standard.

The manikin’s 50th percentile body is constructed of a thermally conductive carbon-epoxy shell with embedded heating and sensor wire elements.

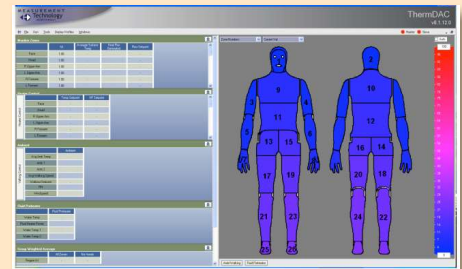
Simon’s thermal properties can be customized, to a certain extent, to enable faster transient response, greater sensitivity, or easier handling.

ASSOCIATED TEST METHODS

- ASTM F1291, ASTM F1720
- EN 13537
- ISO 15831, ISO 23537

FEATURES AT A GLANCE

- Complete turn-key system for sleeping bag and environmental testing.
- 50th percentile Western Male body form.
- Standard models feature 13 independent thermal zones. Custom configurations available.
- Ultra-stable resistance wire heating provides uniform heat flux.
- Separate sensor wire elements distributed over each zone and protected by an epoxy coating.
- Hidden hanging hook at top of head provides an attachment point for support when needed.
- System includes a PC computer and ThermDAC control software for full thermal control, fault detection, real-time data display, and data logging capabilities.



Thermetrics

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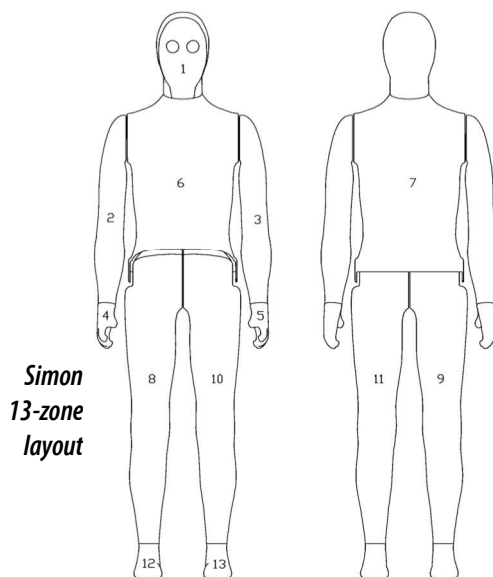
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Specifications

- Thermally conductive carbon-epoxy shell
- 13 independent thermal zones
- Ultra-stable resistance wire heating
- Distributed wire sensors for each zone
- Jointed at hips and shoulders only
- Dell laptop control computer installed with ThermDAC control software
- Two ambient temperature sensors
- One RH sensor
- Signal conditioning electronics
- Power and control cabling (via eye openings)
- *Call for a quote on custom sizes*

Range / Performance / Accuracy

- -20°C to +50°C operating range
- 0 to 100% R.H. including condensation
- $\pm 0.1^\circ\text{C}$ temperature measurement and setpoint control
- $\pm 3\%$ relative humidity measurement
- 700 W/m^2 maximum power output



*Simon
13-zone
layout*

Model Information

- 50th percentile Western Male body form
- Height: 5'9" (175cm)
- Surface area: 19 sq/ft (1.8 sq/m)
- Base weight: 55 lbs (25 kg)
- Garment size: Medium
- Power Requirements: 208-265 VAC, 50/60Hz, Single-phase.

ThermDAC Control Software

ThermDAC is a Windows-based application providing full device control, fault detection, data logging and analysis capabilities. Manikin system configuration and calibration can be carried out within ThermDAC.

- Define non-standard test conditions and custom tolerance criteria
- View multiple device and ambient variables on a single graph screen
- Apply real-time statistical functions to test data over any user-selected time range
- Color coded manikin pictorial displays, selectable for any manikin variable (temperature, heat flux, resistance, etc.)
- Automatic steady state detection
- Manikin control modes: temperature regulation, constant heat flux, and comfort equation

Service

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

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

