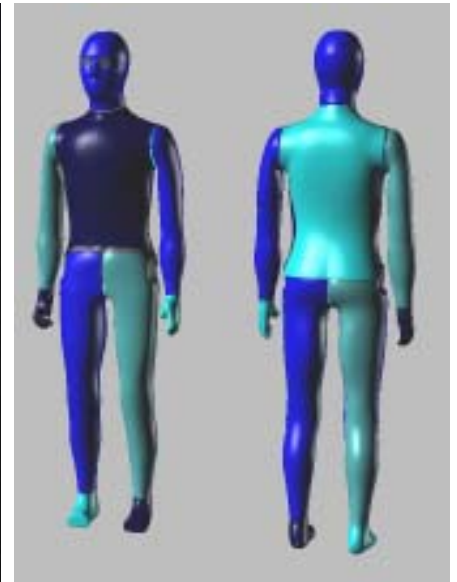


# Simon Thermal Manikin

- Complete turn-key system for sleeping bag and environmental testing.
- 50th percentile Western Male body form.
- Standard model features 13 independent thermal zones. Custom zone 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.
- Manikin jointed at the hips and shoulders only. Simplified hands and feet simplify production and help lower the price.
- 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.



“Simon” is constructed of a thermally conductive aluminum filled carbon-epoxy shell with embedded heating and sensor wire elements. Developed using advanced CAD digital modeling to ensure repeatability in manufacturing, the Simon system is built in accordance with ASTM and ISO standards to meet the garment evaluation needs of sleeping bag manufacturers and research/testing institutes. Simplified construction and modular control electronics help lower system cost while retaining the advanced features that have made MTNW thermal manikins the industry standard. To a certain extent, Simon's thermal properties can be customized for faster transient response, greater sensitivity, or easier handling.

“Simon” is jointed at the hips and shoulders only, and the manikins hands and feet are simplified for greater production efficiencies. Every Simon system includes our advanced automatic manikin control software program, ThermDAC.



## Instruments for Textile and Biophysical Testing

# "Simon" Thermal Manikin

## Standard Specifications

Aluminum filled 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  
Pre-installed ThermDAC control software  
Two ambient temperature sensors  
One RH sensor and Windspeed sensor  
Signal conditioning electronics  
Power and control cabling (via eye openings)  
Operators manual and one year warranty

## Environmental

-20°C to +50°C operating range  
0 to 100% R.H. including condensation

## Performance

± 0.1°C temperature measurement and setpoint control  
± 3% relative humidity measurement  
800 W/m<sup>2</sup> maximum power output  
Meets ISO/DIS 15831, prEN13537, ASTM F1291

## "Simon" Manikin Body Form

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

*Call for a quote on custom sizes*

## ThermDAC Control Software

ThermDAC was developed by Measurement Technology Northwest specifically for manikin and hotplate systems. It is a user-friendly, intuitive, Windows-based application providing full device control, fault detection, and data logging capabilities. System configuration and calibration can also be carried out within ThermDAC.

ThermDAC includes the following special features:

- Color coded manikin pictorial displays, selectable for any manikin variable (temperature, heat flux, resistance, etc.)
- Automatic steady state detection
- User programmable work cycle simulation
- Instantaneous bar graph and time history line graph for any user selectable manikin variable
- Real-time calculation of test statistics over any user defined time interval
- Manikin control modes: temperature regulation, constant heat flux, and comfort equation.

**Simon  
13-zone  
layout**

