

Thermal Foot Test System

- 50th percentile adult male left foot (US size 9).
- Independent copper foot sections with ultra-stable resistance wire heating for uniform heat flux.
- Multi-piece design permits easy installation into even the most rigid footwear.
- System includes two ambient temperature sensors and one relative humidity sensor.
- Custom specifications available, including sizes, immersion capability, and porous metal sweating skin.
- System includes a PC Pentium computer and monitor 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.



Measurement Technology Northwest's Thermal Foot Test System (TFTS) was developed to provide increased resolution of local heat loss and regional insulation values of footwear. The system is suitable for product design, quality control, and QC testing of a variety of footwear systems.

The thermal effects of shoe design, insulation, and ventilation can be quantified accurately and repeatably. A multi-section foot design allows the foot model to be fitted in any shoe or boot - even ski boots or in-line skates.

The Thermal Foot Test System is also available in both dry and sweating models. The sweating model includes a porous high thermal conductivity skin and a positive displacement fluid metering system. Each system includes the foot model, interface electronics, and our ThermDAC Windows-based graphical control and analysis software.



Instruments for Textile and Biophysical Testing

Thermal Foot Test System (TFTS)

Standard Specifications

Copper or aluminum foot model with
aluminum thermal guards
Multiple independent sections
Insulated plastic foot skeleton
Zone heaters and sensors - installed
Two high-accuracy thermistors per zone
Pentium PC control computer and monitor
ThermDAC control software
Ultra-stable resistance wire heating
Two ambient temperature sensors
One relative humidity sensor
Signal conditioning electronics
Power and control cabling
Operators manual
One year warranty

Environmental

-20°C to +50°C operating range
600 W/m² maximum power output
0 to 100% R.H. including condensation

System Accuracy

± 0.2°C temperature measurement
± 1% power measurement accuracy
± 3% relative humidity measurement

Thermal Foot Sizes

50th percentile left foot, Western male
Shoe size: US 9

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.

For manikin operation, 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.



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