

Thermal Head Manikin

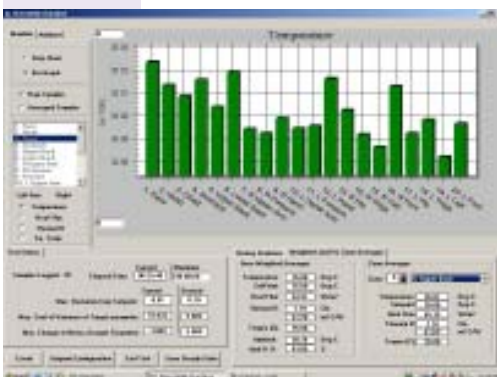
- 50th percentile Adult Male head form.
- Standard model divided into 6 thermal zones. Custom formats available.
- Model designed for easy fitting of headwear.
- Ultra-stable resistance wire heating provides uniform heat flux.
- Wicking fabric sweating skin system available.
- System includes a Dell PC Pentium laptop or desktop computer/monitor with exclusive ThermDAC control software. This intuitive, user-friendly, Windows-based application provides full thermal control, fault detection, real-time data display, and data logging capabilities.
- System configuration and calibration can be carried out within the ThermDAC program, and default test conditions can be saved to disk for future use.



The advanced Thermal Head Manikin system was developed to provide accurate test measurements for all types of protective helmets, goggles, and headwear. Precise measurements of heat loss allow our Thermal Head Manikin to quantify the effects of clothing design, insulation, and ventilation with repeatable accuracy through a wide range of environmental conditions.

Standard 6-zone segmentation is based on the isolation of head regions affected by clothing, or which have significantly different heat loss characteristics.

The forehead and/or face are isolated due to their typically high perspiration rates, and to accommodate the effect of headwear that includes straps at the forehead. The hairline is defined to maintain valid test measurements even with the addition of wigs to simulate hair effects. The Thermal Head Manikin system is available in dry or sweating skin models.



Instruments for Textile and Biophysical Testing

Thermal Head Manikin System

Standard Specifications

Copper filled carbon-epoxy shell
6-zone configuration standard
*Face, Forehead, Chin, Head Top,
Head Left, Head Right*
Ultra-stable resistance wire heating
Distributed wire sensors for each zone
Optional removable fabric sweating skin system
with distribution pumps, reservoir, and tubing
Dell laptop control computer
Pre-installed ThermDAC control software
Two ambient temperature sensors
One relative humidity sensor
Signal conditioning electronics
Power and control cabling
Operators manual
One year warranty

Environmental

-10°C to +40°C ambient range. Manikin must be
preheated before use in below-freezing conditions
600 W/m² maximum power output
0 to 100% R.H. including condensation

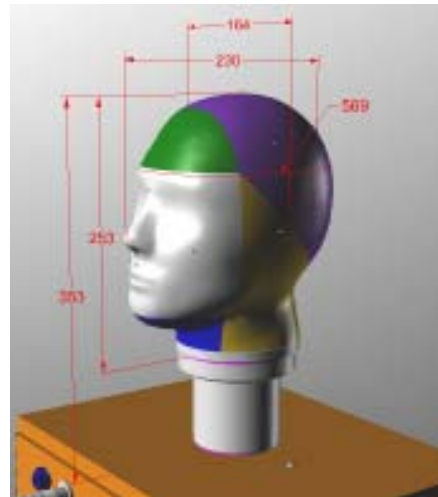
System Accuracy

± 0.1°C temperature measurement
± 1% power measurement accuracy
± 3% relative humidity measurement



Thermal Head Dimensions

50th percentile Adult Male, Helmet/Cap size: Medium



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 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
- Digital displays 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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