

ANDI Thermal Manikin

*The
World's
Most
Advanced
Thermal
Manikin*



The 35-zone ANDI sweating thermal manikin is your key to advanced thermal comfort research. With exclusive features such as Dynamic Heatflux Sensing and Active Cooling, ANDI has the unrivaled ability to measure both positive and negative heatflux (heat loss and heat gain) and to respond to changing environmental conditions with unprecedented speed and accuracy.

ANDI expands what's possible when simulating human physiology. Dynamic Heatflux Sensing can measure even small transient events, which humans can feel but traditional manikins have been unable to measure. Active Cooling technology simulates the mass of a human without the weight penalty and expands ANDI's temperature range (-40°C to +50°C)* for testing in the same range of conditions where garments are worn.

ANDI systems are complete turn-key packages that include manikin, control electronics, laptop PC, and our exclusive ThermDAC control software.

ASSOCIATED TEST METHODS

- ASTM F1291, F1720, F2370
- ENV 342 (requires walking stand)
- ISO/DIS 15831
- EN 13537

FEATURES AT A GLANCE

- Standard sweating model features 35 thermal zones. A dry (non-sweating) 22-zone model is also available.
- Sweating systems feature computerized fluid delivery and removable wicking fabric skin.
- Universal body form with garment sizing conversion standardizes ANDI for all regions.
- Quick-change sweat pores minimize maintenance time.
- Next-generation zone controllers and plug-in wet boards improve reliability and uptime.
- Temperature sensor and resistance wire heater elements are distributed over each zone and are protected by an epoxy coating.
- Standard options include walking motion stand, external breathing, and ManikinPC physiological software. Call if you have any customization needs!
- All systems include a Dell laptop computer installed with ThermDAC control software.



ANDI Thermal Manikin

Specifications

Standard

- Precision carbon-epoxy shell with embedded sensor and resistance wire heating elements
- Fully articulated, with poseable joints at the shoulders, hips, elbows, knees, and ankles
- 35 independent thermal zones (standard)
- Dell (Windows) laptop computer pre-installed with ThermDAC control software
- Ambient sensors: Temperature (2), RH (1), Windspeed (1), with all cables and connectors
- External power enclosure and 25ft (8m) cables
- Connector options: Face, Headpost, or Custom

Options

- ManikinPC physiological control software
- Active Cooling technology, with external chiller
- Dynamic Heatflux Sensing (DHS)
- Sweating system with fluid distribution system, reservoir, and wicking fabric skin layer
- Walking motion stand
- External breathing system

Call for a quote on custom features

Range / Performance / Accuracy

- -40°C to +50°C operating range*
(*with extended range option)
- $\pm 0.1^\circ\text{C}$ temperature measurement
- 0 to 100% R.H. including condensation
- $\pm 3\%$ relative humidity measurement
- Sweating system: 0-1000 ml/hr
- 1000 W/m² maximum power output
- Continuous heat removal capacity: 350 W/m²

Size / Weight / Power

- Manikin body form: Universal Male
- Height: 5'10" (178.5cm), Weight: 77 lbs (35 kg)
- Power: 208-265 VAC, 50/60Hz, Single-phase.



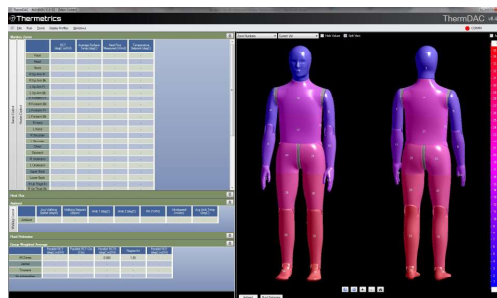
*Industry leading
fit and finish for
best performance*

ThermDAC Control Software

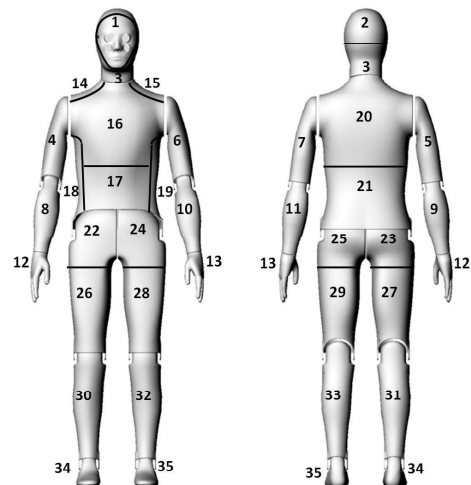
ThermDAC is a Windows-based application providing full device control, fault detection, data logging and analysis capabilities. Manikin system configuration and calibration can be carried out within ThermDAC.

- View multiple device and ambient variables on a single graph screen
- Define non-standard test conditions and custom tolerance criteria
- 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

Warranty and Service



All systems come with a one year warranty. Additional service options are available, including startup installation and training, extended warranty, and the Annual Service Care Package - a periodic maintenance and/or calibration contract designed to keep your Thermetrics equipment in top operating condition.



*Standard
thermal zone
schematics*