MEASUREMENT Technology NORTHWEST

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Advanced Thermal Manikin

- **50th percentile Western male.**
- **126 independent thermal zones with porous metal sweating skin and computerized fluid flow.**
- **Ultra-stable resistance wire heating provides uniform heat flux.**
- **Self-contained operation with internal batteries, RF data communication, and fluid reservoir.**
- **Internal breathing mechanism inhales and exhales via manikin nose.**
- **Real-time measurement of surface temperature and transient heat loss from each zone segment.**
- **Microprocessor based controller at each zone regulates heating and fluid dispensing functions for quick response time.**
- **Internal power regulation monitors battery condition and allows simultaneous operation and battery recharging.**
- **Includes ThermDAC software.**

"ADAM" is the world's most advanced thermal comfort manikin and represents a true leap in technology for thermal manikins. Developed for the Department of Energy's National Renewable Energy Laboratory (NREL), "ADAM" will be used to evaluate the highly non-uniform and transient environments in vehicles and aircraft, "ADAM" is subdivided into 126 individual sweating zones for a highly accurate prediction of occupant sensation and comfort. The manikin mimics human responses such as sweating and breathing with incredible accuracy, and its high spatial resolution and rapid response to environmental changes allow i to respond realistically to transient, non-uniform inputs.

"ADAM" has all electronics contained within the manikin body cavity, including batteries and a wireless transceiver for true cordless operation during thermal tests.

Instruments for Textile and Biophysical Testing

Advanced Thermal Manikin (ADAM)

"ADAM" Manikin Size

50th percentile Western male
Height: 5'9" (175cm) Surface area: 19 sq/ft (1.8 sq/m)
Base weight: 135 lbs (61 kg) Garment size: Medium

Call for a quote on custom sizes

Standard Specifications

Porous metal sweating zones
Carbon-fiber shell
126 independent thermal zones
Zone heaters and sensors - installed
Ultra-stable resistance wire heating
Multiple high-accuracy thermistors per zone
Simulated user-programmable work cycles
Optional sweating copper skin sections with distribution pumps, reservoir, and tubing
Pentium PC control computer and monitor
Pre-installed ThermDAC control software
Two ambient temperature sensors
One relative humidity sensor
Signal conditioning electronics
Power and control cabling (via eye openings)
Operators manual
One year warranty

Environmental

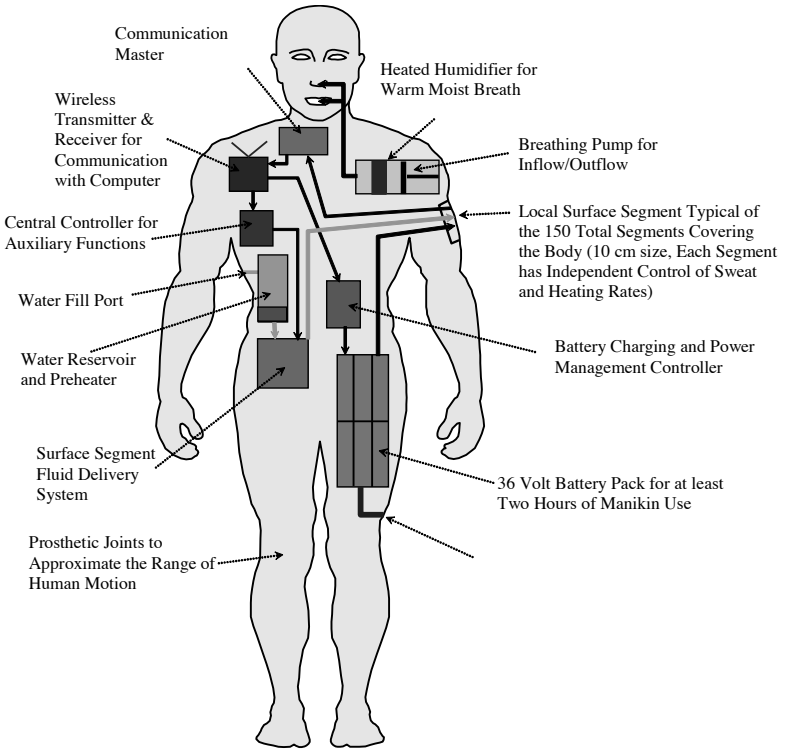
0°C to +70°C operating range
0 to 100% R.H. including condensation
500 W/m² maximum power output on batteries
800 W/m² maximum power output with power cable attached

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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