

# Seat Test Automotive Manikin



**The STAN seat test manikin evaluates the thermal comfort and moisture management characteristics of automobile, truck, and airplane seating.**

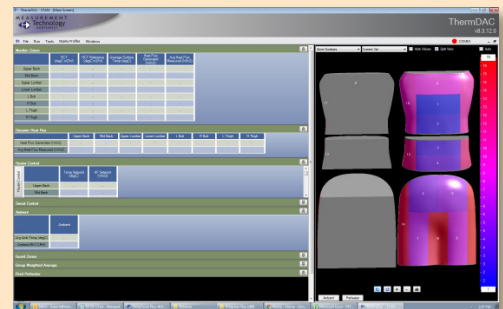
STAN is a 50th percentile “back + buttocks/thigh” thermal manikin derived from the SAE J826 HPM-II body form in order to ensure compatibility with existing automotive seat positioning methods.

For passive seats, use STAN to precisely measure heat and moisture exchange. Heated seat evaluations are based on actual energy transfer, not just surface temperature, and realistic perspiration levels also allow for accurate assessment of cooled/ventilated seats.

STAN contains eight independently controlled thermal zones with integrated backside cooling and (optional) sweating skin system to simulate metabolic heat and perspiration levels. Twelve weight bars –3 kg each– are provided to allow control over seat compression rates.

## FEATURES AT A GLANCE

- 50th percentile adult male back + buttocks/thigh manikin
- Eight thermal regions, each with temperature controlled guard zones
- Active cooling technology integrated into the manikin shell, analogous to blood flow in a human, provides the capability to measure heated seats without overheating the manikin
- Dynamic Heatflux Sensor (DHS) integrated into STAN’s eight thermal regions measures transient energy exchange between skin and seat surface
- Sweating skin system available, with computer-controlled fluid flow and wicking fabric skin
- Ultra-stable resistance wire heating provides uniform heat flux
- Custom specifications available, including additional sensor input channels for manikin–seat interface measurements
- System includes control electronics, Dell laptop PC with ThermDAC software, cables and connectors



**Thermetrics**

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## Specifications

### Standard

- Thermally conductive carbon-fiber shell
- Eight independent thermal zones, with temperature controlled guard zones
- Ultra-stable resistance wire heaters and distributed wire sensors, embedded in the shell for protection against damage
- Dell laptop computer pre-installed with ThermDAC control software
- Two ambient temperature sensors
- One relative humidity sensor
- Signal conditioning electronics
- Power and control cabling

### Options

- Optional sweating skin system with sweat distribution pumps, reservoir, and wicking fabric skin
- Recirculatory chiller for cooling water
- Additional ambient sensors/input channel

### Range / Performance / Accuracy

- 10-40°C zone temperature setpoints
- 600 W/m<sup>2</sup> maximum power output
- 0-1000 ml/(hr-m<sup>2</sup>) perspiration rate
- ± 0.1°C thermal accuracy
- ± 1% power measurement accuracy
- ± 3% relative humidity measurement



## Model Information

- Power Requirements: 208-265 VAC, 50/60Hz, Single-phase
- Cooling water requirements: Temperature controlled chiller, 500W heat removal at 30 °C, flow rate of 2 L/min at 15 PSI

## 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.

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

## Service

All systems come with a one year warranty.

Please ask about these service options:

- Startup installation and training
- Extended warranty
- Annual Service Care Package—a periodic maintenance and service contract designed to keep your Thermetrics equipment calibrated and in top operating condition

