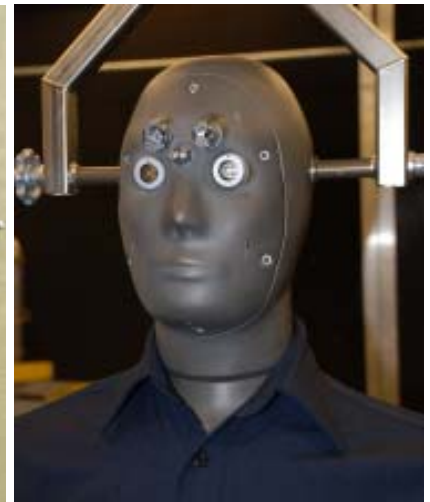


Submersible Thermal Manikin

- Complete turn-key system for standard or immersion testing of protective clothing and survival gear.
- 50th percentile Western Male body form.
- Standard model features 21 independent thermal zones. Custom zone configurations available.
- Ultra-stable heating elements provide uniform heat flux.
- Thermistor temperature sensors distributed across each zone.
- System includes a PC computer with exclusive ThermDAC control software for full thermal control, fault detection, real-time data display, and data logging capabilities.
- Optional removable fabric sweating skin with computerized fluid flow.
- Rapid heat up and steady-state maintenance with automatic detection for test end.



“NEMO” is constructed as a fully sealed aluminum manikin with embedded heating and thermistor sensor elements. All heating and fluid control electronics are inside the manikin for maximum accuracy and easy maintenance. This fully waterproof design was developed using advanced CAD digital modeling, and is rated for immersion testing to depths of 10 feet (3 meters). NEMO is fully jointed, providing motion at the ankles, elbows, knees, and hips to allow virtually any possible body pose. Joints feature adjustable friction settings, which maintain their watertight integrity in any pose.

NEMO packages include our user-friendly manikin control software program, ThermDAC. Total mass (155 lbs/70 kgs standard), zone configurations, and thermal properties can be customized for faster transient response, greater sensitivity, or easier handling. The NEMO system is built in accordance with ASTM and ISO standards to meet the garment evaluation needs of testing institutes and research labs.



Instruments for Textile and Biophysical Testing

Waterproof Thermal Manikin (NEMO)

Standard Specifications

Sealed aluminum shell with waterproof joints
21 independent thermal zones
Integrated zone heaters and sensors
Fully sealed body, immersion rated to 10-foot depth
Multiple thermistor point sensors for each zone
Optional removable fabric sweating skin with distribution pumps, reservoir, and tubing
Jointed at shoulders, hips, knees, elbows, and ankles
Laptop or Desktop PC control computer
Pre-installed ThermDAC control software
Two ambient temperature sensors, rated for immersion
One relative humidity sensor
One (optional) windspeed sensor
Signal conditioning electronics
Power, control, and fluid cabling (via eye openings)
Operators manual
One year warranty

Environmental

-20°C to +50°C operating range
0 to 100% R.H. including condensation
Fresh water immersion to 10 foot (3 meter) depths

Performance

Rapid heat up and steady-state, with automatic detection for test end
± 0.1°C temperature measurement and setpoint control
± 3% relative humidity measurement
1200 W/m² maximum power output
Meets ISO/DIS 15831 (stationary test), prEN13537
ASTM F1291, ASTM F2370/F2371 (sweating manikin)

Sweating Skin System (optional)

Volumetric sweat rate control, by manikin region
Network of pores over the surface of the manikin deliver water to the skin layer
Removable fabric skin distributes water by wicking

"NEMO" Manikin Size

50th percentile Western Male body form
Height: 5'9" (175cm)
Surface area: 19 sq/ft (1.8 sq/m)
True weight: 155 lbs (70 kg) Garment size: Medium

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.

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.

NEMO standard thermal zone schematics

