



THE WORLD'S MOST ADVANCED THERMAL MANIKINS

# THERMAL MANIKIN CHILD - 10yo/8yo

Testing labs now have the ability to test children's clothing to the same thermal comfort standards currently used for adult garment evaluation.

Thermetrics' 16-zone sweating and walking Child Manikin is made from a thermally conductive carbon-fiber epoxy shell with embedded heating and sensor wire elements. The manikin was developed using advanced CAD digital modeling to meet the average body dimensions of an 8-year old or 10-year old child.

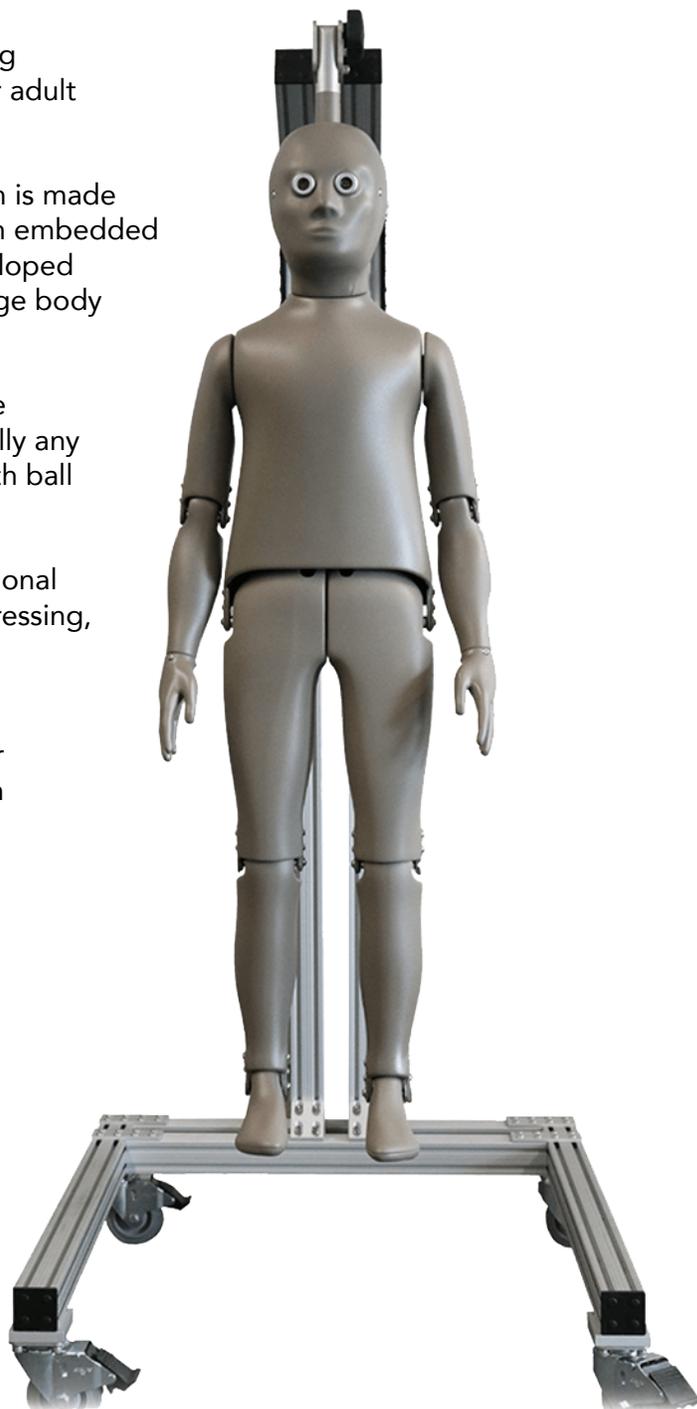
The Child Manikin is fully jointed, providing motion at the shoulders, elbows, hips, knees, and ankles to allow virtually any possible body pose. Joints feature adjustable friction, with ball bearing joints in the hips and shoulders for walking tests.

Walking motion for EN 342 testing is provided by an optional compact motorized walking stand that also serves as a dressing, hanging storage, and roll-around transportation device.

All Child systems are complete, ready-to-use instruments including manikin, control electronics, laptop PC, and our exclusive ThermDAC control software. Just add your own climate chamber for a comprehensive testing solution.

## Test Methods Supported

- ASTM F1290
- ASTM F1720
- ENV 342 (with walking stand)
- ISO 15831
- EN 13537





## Child Specifications

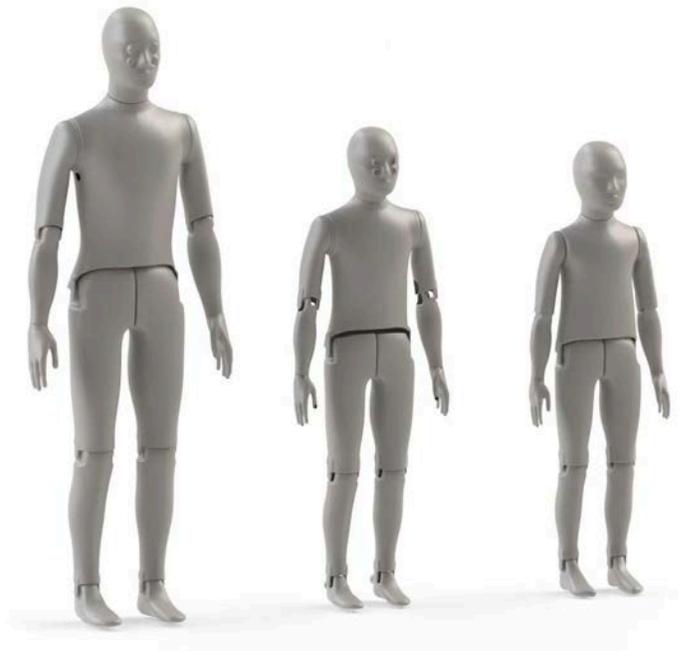
- 8-year-old male body form height: 51 in./129 cm
  - Surface area 10.7 sq/ft./0.99 sq/m
  - Base weight: 40-45 lbs./18-20 kg
  - Chest: 26 in./66 cm
  - Waist: 24.5 in./62 cm
  - Hip: 27.7 in./71 cm
- 10-year old male body form height: 55 in./140 cm
  - Surface area 11.8 sq/ft. /1.12 sq/m
  - 45-50 lbs./20-22 kg
  - Chest: 27.7 in./70 cm
  - Waist: 23.2 in./59 cm
  - Hip: 28 in./71.3 cm
- Standard operating range: -20°C to +50°C
- Extended operating range: -40°C to +50°C (with “cold capable” option)
- 0 to 100% RH, including condensation
- Temperature accuracy:  $\pm 0.1^{\circ}\text{C}$
- RH accuracy:  $\pm 3\%$
- Maximum power output: 700 W/m<sup>2</sup>
- 700 W/m<sup>2</sup> maximum power output
- Sweating delivery range: 0-1,000 ml/hr/m<sup>2</sup>
- Power: 85-265VAC, 50/60Hz, single-phase
- Power/communication cable length: 25 ft./7.5 m.

## Base Products Include:

- Manikin body form with heaters and sensors
- Control electronics
- Two ambient temperature sensors
- Laptop loaded with ThermDAC control software
- Power and control cabling
- One relative humidity sensor
- One omni directional wind-speed sensor
- Manikin transport chair
- Standard one-year warranty

## Child Feature Highlights & Benefits

- Complete turn-key system for clothing/environmental thermal testing
- 16 thermal zones (both models)
- Sweating version features computerized fluid delivery by zone
- Computerized fluid delivery and wicking fabric skin layer
- Same features and functionality as our adult “Newton/Liz” thermal manikin systems
- Ultra-stable resistance wire heating provides uniform heat flux
- Sensor wire elements are distributed within each zone and protected by an epoxy coating
- System includes a laptop computer installed with ThermDAC control software



Newton < > Child size perspectives



**ThermDAC Control Software**

ThermDAC is an engineered user interface for thermal manikin systems providing real-time device control, automated testing, and flexible display and logging capabilities, including:

- Manikin control by skin temperature, constant heat flux, comfort equation, ManikinPC
- User-programmable test configurations, stability criteria, linked work cycles
- Automatic steady-state detection
- Color-coded manikin pictorial displays, selectable for any manikin variable
- Zoomable time-history graph of multiple device and ambient variables
- Real-time statistical analysis over any user-selected time range
- Logging of raw data, statistical analysis, user-reports
- Device calibration and fault detection

**4D** **PHYSIOLOGY & COMFORT MODEL INTEGRATION**

Bring your manikin to life with the next dimension in testing; ManikinPC

- Real-time data
- Reduce dependence on human testing
- Shorten design cycles
- Design based on comfort metrics

504 - Thermal Manikin - Child - 10yo/8yo	Item #	Description	Product Name
<b>Semi-Custom Base Products</b>	19-50401	Child Manikin, 16Z, Dry, 8 year old, 127 cm	504-XXX C.d16.y
	19-50402	Child Manikin, 16Z, Dry, 10 year old, 140 cm	504-XXX C.d16.Y
	19-50403	Child Manikin, 16Z, Sweating, 8 year old, 127 cm	504-XXX C.s16.y
	19-50404	Child Manikin, 16Z, Sweating, 10 year old, 140 cm	504-XXX C.s16.Y
<b>Standard Options</b>	20-00736	Hanging Stand Child	—
	20-00964	Walking Stand, 120VAC	—
	20-00961	Walking Stand, 240VAC	—
	11-01407	Software, ManikinPC License (Permanent) - US	—
	11-03396	Software, ManikinPC License (Permanent) - OUS	—

 Don't see what you need above? Contact Thermetrics to customize your perfect system. Keep your Child Manikin in tip-top shape. Discuss service plan options and point-of-sale discounts with us at [sales@thermetrics.com](mailto:sales@thermetrics.com).