



Thermetrics, LLC is a wholly owned subsidiary of Measurement Technology NW, dedicated to the design and manufacture of a wide range of precision instruments to measure and evaluate the thermal comfort of textiles, garments, and protective apparel.

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Project Profile – CDC/NIOSH Newton 34-zone Thermal Manikin System

In 2010 the National Personal Protective Technology Laboratory in Pittsburg, USA acquired a 34-zone Thermetrics Newton sweating thermal manikin for assessing protective clothing and equipment (PPE) characteristics and their effects on the individuals wearing them.



Dr. Aitor Coca, Research Physiologist at the CDC/NIOSH lab, explains the reasoning behind their purchase: “The 34-zone configuration allows us to look at very specific zones of the body and how they are affected by PPE. Our Newton manikin also has the sweating skin feature and the ability to simulate walking. Both of these options give our researchers the ability to evaluate PPE characteristics such as thermal insulation and evaporation, which combine to determine the Total Heat Loss value of tested fabrics and ensembles.”

The popular Newton Thermal Manikin Systems from Thermetrics have found their way into test laboratories around the world, primarily due to their versatility and accuracy. Newtons have been the basis for research as varied as ASTM/ISO garment tests, automotive and building climate control evaluation, thermal imaging assessments, and a long list of unique applications limited only by human imagination. In just about any situation that involves the human-environment interface, Newton can be a capable human substitute. Dr. Coca agrees. “The manikin is a great tool that has saved us a significant amount of time from testing clothing on humans, and it can be used in extreme environments and conditions where a human could be in danger. It cannot

completely substitute for human testing, but at our lab Newton has become a highly valued device that has helped us better understand the PPE potential burden on wearers.”

Because current federal acquisition regulations require all federal agencies to collect past performance information on government contracts, a process called CPARS was implemented to comply with this legislation. CPARS was designed to fairly evaluate contractor performance and to ensure that source selection officials have a detailed assessment of a contractors past performance.

This is what Dr. Coca reported to CPARS about his 34-zone Newton thermal manikin and Thermetrics: “The product is outstanding, probably the best of its type in the world. We have never had a problem and we have been using the manikin constantly for almost three years. Service from the company has also been outstanding - they have always provided quick and clear answers. Given what I know today about the company’s ability to execute what they promised in their proposal, I would definitely award to them again.”



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For over 25 years Thermetrics has manufactured a range of precision instruments for measuring and evaluating the thermal comfort of textiles, garments, and dynamic environments such as automobile, truck, and aircraft interiors. Thermetrics systems support all major ASTM, ISO, and ENV textile testing standards. To learn more, contact Thermetrics at 206-456-9119, or send an email inquiry to thermal@thermetrics.com.

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