



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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Thermetrics equipment installed at the Apparel Innovation Centre in Canada

In May, 2014 the Olds College Apparel Innovation Centre in Calgary, Canada was awarded funding that enabled the College, in collaboration with Alberta Garment, to establish a state-of-the-art research, training, and product development facility for the apparel industry.

Once the laboratory complex is completed, textile and apparel companies as well as the general public will have access to a full suite of apparel product development equipment. Lab capabilities include cutting-edge thermal comfort testing systems, research and development services focused on the creation of advanced textile-based products, and the ability to test protective clothing against hazards such as hot liquid and steam exposure.

As Dr. H.J. (Tom) Thompson, President of Olds College stated, "The new facility will be a venue for hands-on training, world-class thermal comfort and protective apparel research, and will provide support to innovative textile entrepreneurs in bringing their ideas from concept to reality."

Funds are being used to acquire a broad array of product testing and prototype development systems, and thermal testing equipment from **Thermetrics** will figure prominently in the new lab. The Olds College installation includes an iSGHP-8.2 sweating guarded hotplate with integrated chamber, a 34-zone "Newton" sweating thermal manikin with ManikinPC physiological model software, and last but not least, a customized walk-in climate chamber designed in partnership with Darwin Chamber Company. What makes this thermal comfort equipment package so advanced?





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Thermetrics Newton thermal manikins running the ManikinPC physiological model represent the very best technology for simulating the human thermoregulatory system and for predicting human thermal comfort and thermal sensation values. Pure virtual human models are well suited to the calculation of non-uniform boundary conditions such as solar loading, radiation, conduction, and convection, but these same models struggle when trying to account for clothing insulation values, convection coefficients and contact resistances. These limitations greatly impact the accuracy of comfort predictions. However, combining a virtual human model (ManikinPC) with a Newton thermal manikin eliminates the need to provide boundary conditions to the simulation model. Instead, the actual heat loss measurements from Newton are used in the virtual model calculations and the resulting predictions of thermal comfort are dramatically improved.

This Newton thermal manikin installation will be the first of its kind in Canada.

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.

For more information on the Apparel Innovation Centre, please visit their website at www.apparelinnovation.org.

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