Thermetrics *A subsidiary of Measurement Technology NW*

Flame Test Hand System

Thermetrics Proposal

21 February 2018

System Quotation
Standard Warranty & Terms

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Flame Test Hand Manikin

Thermetrics Flame Test Manikins are built from a high temperature ceramic composite structure with integrated mounting locations for flame exposure sensors.

Copper disc calorimeter heat sensors will be imbedded in the manikin shell surface to measure heat exposure levels. Typical sensor configurations include nine (9) sensors distributed over the hand form. Final quantity and location of sensors will be confirmed with the customer prior to manikin production.

Manikin Sensors

Thermetrics precision calorimeter heat sensors are used to measure the incident heat flux over a range from 0.0 to 4.0 cal/cm2·s (167 kW/m2). Key advantages of this design:

1) Long-term stability. This copper disc sensor does not degrade with use like epoxy-coated thermocouples which require frequent recalibration and replacement.

2) Better matching to human skin response. The sensor is designed to provide more realistic response characteristics than alternative calorimeter designs.

Copper calorimeter sensor

The total energy transmitted and recorded by these sensors is used to predict whether a second degree burn injury will occur. If a second degree burn injury is predicted, the time to a second degree burn injury is reported.

Flame Test Hand Manikin will include:

- High-temperature body form (75th percentile left or right hand)
- Precision copper disc calorimeter exposure sensors (9, plus 2 spares)
- Data acquisition/control system
- Hand-held heat flux gun (1) with NIST traceable reference sensor for *in-situ* calibration of the manikin's sensors
- PC laptop (1) with ThermDAC control software and burn prediction algorithm
- Full system operating manual and 1-year limited warranty

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