THE WORLD'S MOST ADVANCED
INSTRUMENTS FOR TEXTILE AND BIOPHYSICAL TESTING

1D

PROTECTIVE TEST SYSTEM

STORED ENERGY TESTER (SET)

The Stored Energy Tester (SET) device evaluates the potential for skin burns that may be associated with a fabric's stored thermal energy.

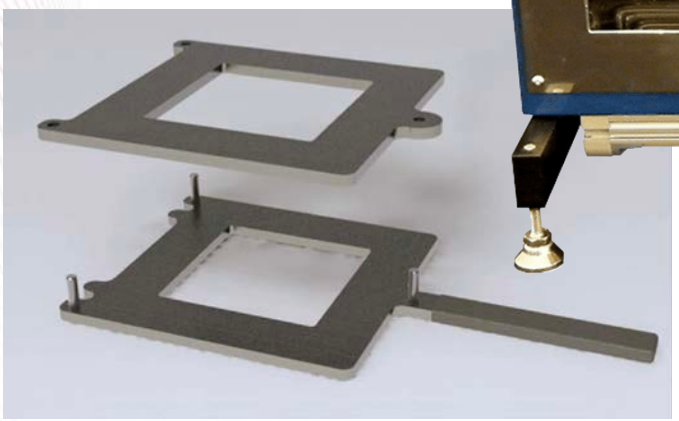
Firefighter protective clothing materials exposed to moderate levels of radiant heat can cause serious burn injuries when compressed against the skin. The amount of energy stored in a protective fabric and transferred to the wearer requires specific exposure conditions and complex analysis - parameters that the SET device was developed to isolate, reproduce, and quantify as per ASTM F2731.

The SET device provides a standardized procedure and controlled radiant heat conditions to generate repeatable measurements of heat storage and transfer in protective fabric materials. These measurements allow for rapid characterizing and ranking of materials, and, through the SET device's integrated burn model software, provides a prediction of possible burn injury.

The SET device includes a radiant heat source, sample holder, heat flux transducer, pneumatically actuated transfer tray with water-cooled carriage, compressor, control system, and burn injury analysis software.

Test Method Supported

- ASTM F2731



6"x 6" sample holders

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SET Specifications

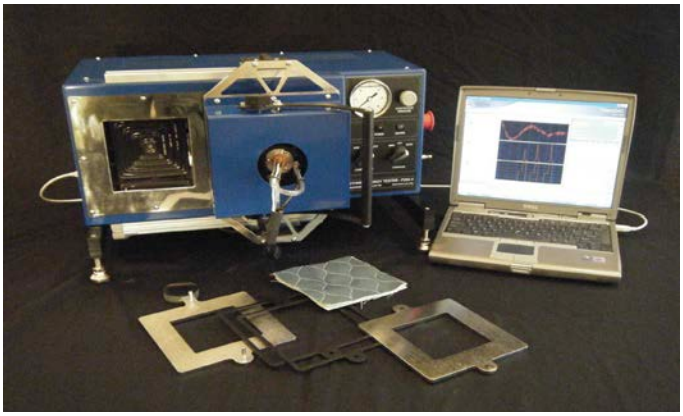
- Radiant heat panel adjustable from 0-0.25 cal/cm^2
- Heat panel can be operated in two modes: Temperature control or Heat Flux control
- Water-cooled carriage holds the test sample and a water-cooled heat flux transducer
- Pneumatically controlled compression system
- Sample compression force can be adjusted using a precision regulator located on the front of the device
- Sample size: 6 in. x 6 in. (15 cm x 15 cm). Spacers of various thicknesses are provided to help minimize edge compression of the materials being tested
- ± 1.0°C temperature measurement
- ± 3% radiant heat flux measurement
- The SET device has been designed to operate with the radiant heating source in a vertical orientation.
- Model Size: 24.5 in. x 17 in. x 14 in. (62 cm x 43 cm x 36 cm)
- Min. Operating Space: 36 in. x 20 in. x 16 in. (92 cm x 51 cm x 41 cm)
- Power Requirements: 208-265 VAC, 50/60Hz, Single Phase. Maximum nominal current 5 Amps
- Compressed Air: Uses clean/dry air supplied at 70-90 PSI
- Cooling Water Requirement: water supply to device regulated to 32.5°C with a flowrate of 100 ml/min or greater
- Signal conditioning electronics and USB interface
- Power and control cabling
- Current model laptop computer, includes ThermDAC control software with Burn Model

SET Highlights & Benefits

- Black body radiant panel heat source (adjustable temperature) produces radiant energy matching the spectral density of a structural fire.
- Water-cooled sample carriage, electronically actuated for precise control of exposure time over the heat source.
- Pneumatic compressor applies an adjustable pressure load to the sample via a low conductivity mandrel.
- Automatic or manual test operation.
- Small and portable, the SET test device fits in most standard fume hood
- Burn results are shown as a real-time numerical and graphical display. Estimated time to second degree burn following exposure is also calculated.
- System includes a new laptop computer installed with ThermDAC control software with integrated Burn Model to predict the severity of skin damage.

Base Products Include:

- SET test device
- Sample holder
- Heat flux transducer
- Signal conditioning electronics and USB interface
- Laptop computer with ThermDAC control and Burn Model software
- Standard one-year warranty



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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:

- 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

292 - Protective Test System - Stored Energy Tester (SET)	Item #	Description	Product Name
Standard Base Product	19-29201	**Stored Energy Tester (NFPA 1981) - SET**	292-XXX
Standard Options	20-00376	Sample Holder	—

Don't see what you need above? Contact Thermetrics to customize your perfect system.

Keep your SET in tip-top shape. Discuss service plan options and point-of-sale discounts with us at sales@thermetrics.com.