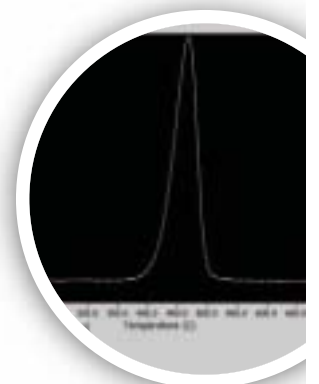




MICRO CALORIMETER



THE BENCHMARK IN FIRE TESTING



THE FTT MICRO CALORIMETER

The FTT Micro Calorimeter was developed in co-operation with the Federal Aviation Administration (FAA). It determines fundamental thermo-chemical data in seconds and predicts fire properties of materials.

The technique enables parameters such as Specific Heat Release Rate (W/g), Heat of Combustion (J/g) and Ignition Temperature ($^{\circ}\text{C}$) to be quickly determined from very small (1-5mg) specimens. It is a low cost and accurate technique; typical repeatability is $\pm 5\%$.

Micro Calorimeter data has been shown to correlate with fire test data (Cone Calorimeter; OSU), flammability results (LOI, UL94) and combustion tests (Bomb Calorimeter) and is therefore seen as a powerful, low cost tool to assess and predict flammability properties.

The FTT Micro Calorimeter

- Accurate and cost effective micro calorimetry using a Pyrolysis Combustion Flow Calorimeter (PCFC) ASTM D 7309

The FTT Micro Calorimeter uses the same oxygen depletion calorimetry technique used in our bench and room scale calorimeters. The specimen is first heated at a constant rate of temperature rise (typically $1^{\circ}\text{C}/\text{s}$) in a pyrolyser and the degradation products are purged from the pyrolyser by an inert gas (nitrogen). The gas stream is mixed with oxygen and enters a combustor at 900°C where the decomposition products are completely oxidised. Oxygen concentrations and flow rates of the combustion gases are used to determine the oxygen depletion involved in the combustion process and the heat release rates are determined from these measurements.

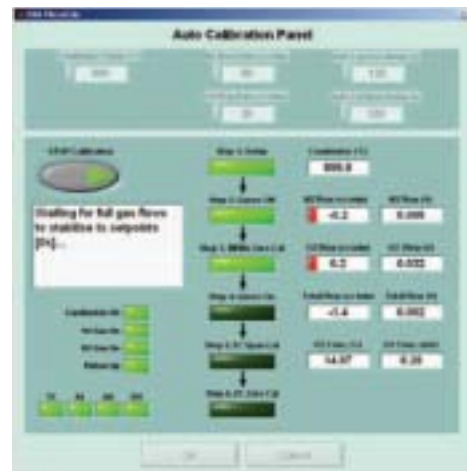
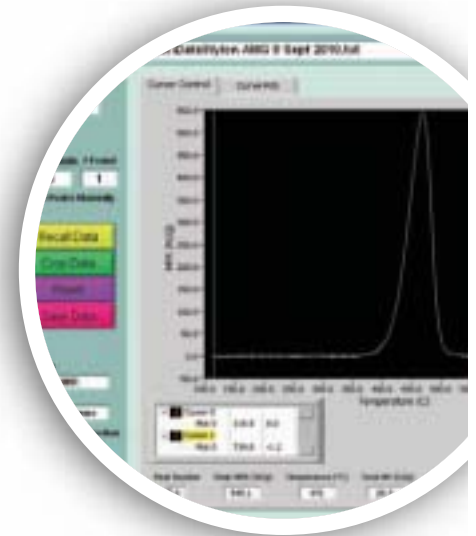


Software

The FTT Micro Calorimeter is supplied with a Microsoft Windows based data acquisition and analysis software with an intuitive user interface using standard Windows data entry fields, drop down selectors, check boxes and switches.

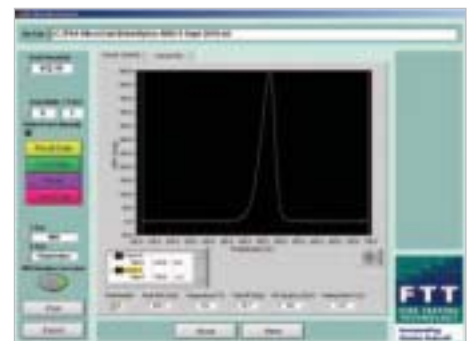
The software enables:

- The instrument status to be shown
- Calibration of the instrument and storage of calibration results
- Collection of data generated during a test
- Calculating the required parameters
- Presenting the results in a manner approved by the Standard



Features and Benefits

- Ability to generate quantitative results in minutes
- Automatic control of temperature and gas flow rates
- Small sample size (1 – 5mg)
- Over temperature protection of both furnaces
- Removable rear cover to access all servicable parts such as the Fuel Cell for ease of maintenance
- Dual voltage 96-264VAC, 50-60Hz (No need to switch)





Technical Specification

Measuring principle	Pyrolysis combustion flow calorimetry
Combustor operating temperature range	25 to 1000°C
Heating rate	0.4 to 4°C/s
Sample size	1 to 5mg
Detection limit	5mW
Repeatability	± 5% (1 mg sample)
Dimensions	1050mm (H) x 350mm (W) x 550mm (D)

Built in accordance with EMC 89/336/EEC, LVD 72/23/EEC, BS EN 60204-1, BS EN 746-2

Due to the continuous development policy of FTT technical changes could be made without prior notice.

Services

Gas supply	Pressure regulated Nitrogen (oxygen free) at approximately 2 bar Pressure regulated Oxygen at approximately 2 bar
Power	Dual voltage 96-264VAC 10A, 50/60Hz
Extraction	Fume cupboard or extraction system capable of extracting a volume flow of 100cc/min
Scales	With a capacity of 250 mg or greater and a sensitivity of 0.01mg, to weigh specimens or containers, or both.
Drierite	Drierite is required to remove the water from the sample.



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