Combustion Toxicity Test Apparatus

(ASTM E1678; NFPA 269)

firetesting technology

Fire Testing Technology Limited
Charlwoods Road, East Grinstead, West Sussex RH19 2HL, UK
+44 (0)1342 323600 | sales@fire-testing.com | www.fire-testing.com
A Judges Scientific plc company

ASTM E1678 Test

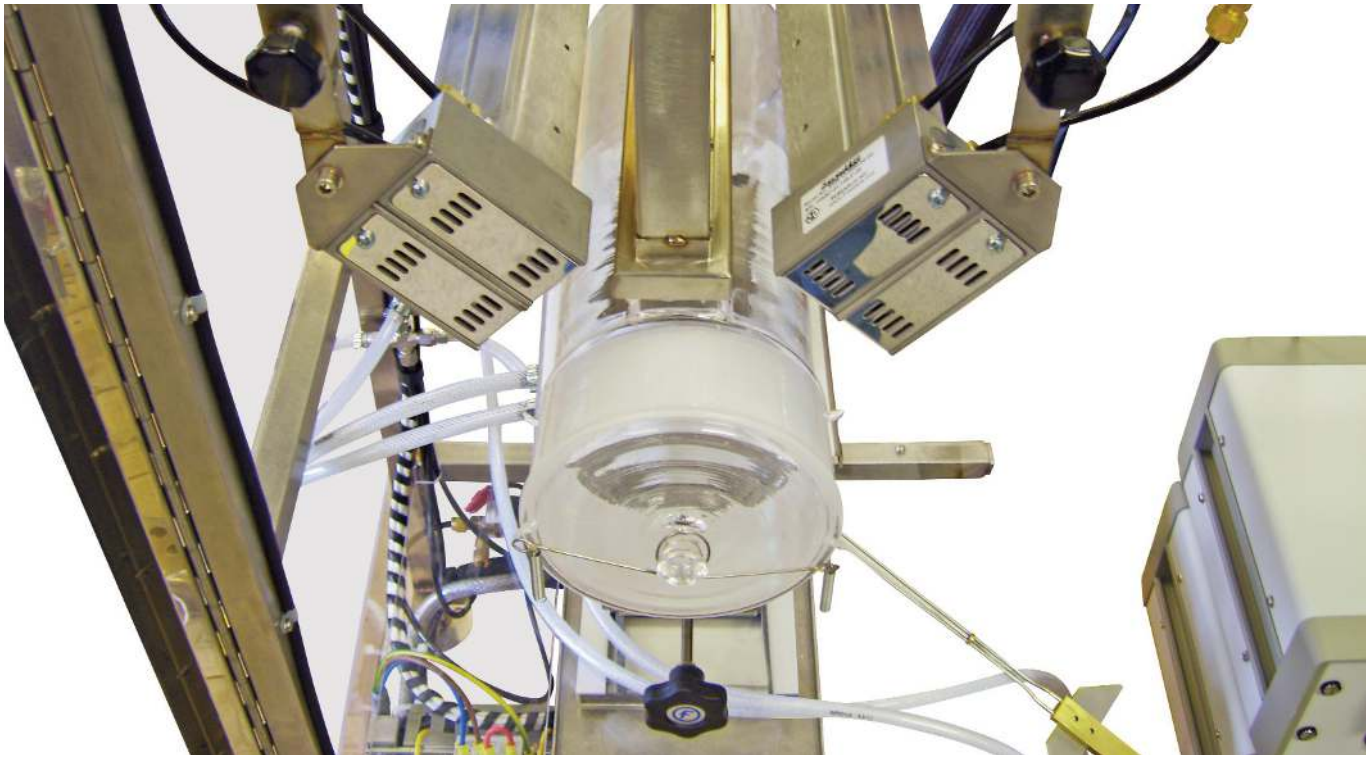
This instrument uses radiant heat with spark ignition to combust a sample of material and helps to characterise the product by measuring ease of ignition (time), rate of smoke generation (mass loss) and toxicity (gas analysis). These are essential parameters in the evaluation of the potential fire hazard of products. Future possibility of being up-graded with additional instrumentation to monitor corrosivity. The overall apparatus consists of a combustion cell and a test chamber connected by an enclosed passage (chimney).

External to the combustion cell which contains the specimen platform, are radiant heat lamps and a load cell. The test chamber has provision for colorimetric gas reaction tubes in one side of the chamber. Gas analysis instrumentation is located external to the apparatus with gas samples extracted from the test chamber. The combustion cell/test chamber and chimney are assembled in such a manner that they may be separated for cleaning.

The unit has not been designed for animal testing.

Main Features

- The sample orientation is horizontal
- Suitable for testing sample assemblies
- Polycarbonate chamber of 200 litres
- Heat flux meter
- Irradiation levels 1 0-50kW/m^2 Spark ignition
- Load Cell with sample capacity of 500g
- 15 ports for outlet to gas analyzers



TECHNICAL SPECIFICATION	
Dimensions	1600 (H) × 1200 (W) × 480 (D)
Weight	1.05kg

Due to FTT's continuous development policy specifications could change without prior notice.

SUPPLY REQUIREMENTS	
Voltage	230V - 50I60Hz m 40A
Water	For cooling apparatus

NFPA 269 Test

The NFPA 269 smoke toxicity fire test apparatus is designed to assess the toxic potency of combustion products from various materials or products, presented as planar specimens. The apparatus consists of a combustion cell and an exposure chamber, connected by an enclosed passage (chimney).

External to the combustion cell, which contains the specimen platform, are placed 4 radiant heat lamps and a load cell. The exposure chamber has six tubular housings, provided for exposing targets. Optional gas analysis instrumentation, for determination of smoke toxicity, can be purchased separately. The combustion cell, exposure chamber and chimney are assembled in such a manner that they may be separated for cleaning purposes (after a test).

Main Features

- **Exposure Chamber:** a clear polycarbonate box, 200 liters nominal volume, with inside dimensions of 1.22 × 0.37 × 0.45 m. It contains two doors: one in the front wall near the connection to the combustion cell and one in the end wall nearest the target housing ports
- **Combustion Cell:** a horizontal quartz tube with a 127 mm (5") inside diameter and approximately 320 mm (12.5") long, sealed at one end and with a large standard taper outer joint at the other end
- **Chimney:** a stainless steel assembly connecting the combustion cell to the exposure chamber
- **Smoke shutter:** inside the exposure chamber, to close over the chimney opening.
- **Radiant Heaters:** The active element of the heater consists of four quartz infrared lamps (with tungsten filaments), rated at 2000 W/240 V. The lamps are encased in water cooled holders with parabolic reflectors
- **Spark Igniter:** located inside the combustion cell, directly above the specimen.
- **Specimen Holder and Load Cell:** The specimen holder is a stainless steel assembly approximately 76 × 127 mm, inside dimensions, and 50 mm (2") deep. The specimen is backed by a layer of ceramic fibre blanket (nominally 65 kg/m^3 density). The specimen holder is placed, for testing, on a platform, inside the combustion cell and under the lamps, and connected by a rigid rod to a load cell, for continuously monitoring sample mass.

TECHNICAL SPECIFICATION	
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Weight	1.05kg

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Unrivalled Experience in Design and Manufacturing

FTT's site in East Grinstead, is home to the largest group of fire scientists and instrumentation design engineers working on fire testing instrumentation, and is at the heart of our design and manufacturing. For almost 30 years **FTT** has provided the highest quality instruments and service for fire testing and research professionals worldwide, directly and through its extensive global sales and support network.

Quality

- World-class manufacturing in accordance with multiple international and national standards, including: EN, ISO & ASTM
- ISO 14001, ISO 9001 certified

Integrity

- A dedicated team passionate about fire testing instrumentation and continuous product improvement
- Delivering reliable, robust and easy-to-use instruments for the past 30 years

Excellence

- A world-class team made up of qualified fire scientists, mechanical, electrical and electronic fire instrument design engineers and production, installation and maintenance engineers

Global

- World-wide distribution network for global sales, installations, training, maintenance and technical support
- Leading global supplier of the Cone Calorimeter, Large Scale Calorimeter, NBS Smoke Chamber and Oxygen Index