TECHNICAL DATA SHEET

Cone Calorimeter (ISO 5660-1: Fire Testing Equipment)

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1. Product Overview

The **Cone Calorimeter** is a state-of-the-art fire testing apparatus designed to measure **heat release rate (HRR), smoke production, mass loss rate, and ignition time** of materials under controlled conditions. It is widely used in **building materials, plastics, textiles, and aerospace industries** for evaluating fire performance.

 Product Page: https://sites.google.com/view/kdmglobal/cone-calorimeter-iso-5660

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2. Standards Compliance

This instrument complies with the following international fire testing standards:

- **ISO 5660-1 & ISO 5660-2** – Reaction to fire tests (Heat release, smoke production, mass loss rate).
- **ASTM E1354** – Standard test method for heat and visible smoke release rates.
- **BS 476 Part 15** – Fire tests on building materials and structures.
- **EN 45545-2** – Fire safety for railway applications.
- **NFPA 271** – Heat and smoke release testing.
- **IEC 60695-8-2** – Fire hazard testing for electrical enclosures.

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3. Technical Specifications

Feature	Specification
Test Method	Oxygen Consumption Calorimetry
Heat Flux Range	0 - 100 kW/m² (adjustable)
Specimen Holder Size	100mm x 100mm (standard)
Ignition Source	Automatic spark igniter
Data Acquisition	Real-time HRR, smoke density, mass loss
Exhaust System	High-efficiency gas collection and filtration
Gas Analysis	CO, CO_2, O_2 (Paramagnetic or NDIR sensors)
Smoke Measurement	Optical Density via Laser Photometry
Safety Features	Emergency stop, exhaust ventilation, overheat protection

4. Test Principle

1. A **specimen** is placed under a **cone-shaped radiant heat source**.
2. The heat flux is applied to simulate fire exposure conditions.
3. The specimen ignites, and **heat release rate (HRR) is measured** by oxygen consumption calorimetry.
4. **Smoke production and toxic gas emissions** are monitored.
5. The test provides key fire behavior data including **ignition time, peak HRR, and total heat release (THR)**.

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5. Applications

The **Cone Calorimeter** is used in various industries for fire safety evaluations:

- **Building Materials** – Fire resistance testing of wood, insulation, panels.
- **Plastics & Polymers** – Evaluating flame-retardant formulations.
- **Textiles & Upholstery** – Testing fire-resistant fabrics.
- **Aerospace & Automotive** – Safety assessment of cabin materials.
- **Railway Interiors** – Compliance with EN 45545 fire safety regulations.

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6. Power and Gas Requirements

- **Electrical Requirements:** 230V, 50Hz (customizable for other regions).
- **Gas Supply:** Oxygen (O_2) and Propane/Methane for ignition.
- **Compressed Air:** Required for gas analysis and exhaust system.

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7. Included Accessories

- **Precision mass flow controllers for accurate gas flow regulation.**
- **High-resolution smoke photometer for optical density measurement.**
- **Automated specimen holder with temperature-resistant design.**
- **Data acquisition software with real-time HRR analysis.**
- **Calibration kit for oxygen and heat flux sensors.**

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8. Why Choose KDM Global?

- **High-accuracy calorimetry with real-time heat release rate analysis.**

- **Advanced smoke measurement with laser photometry.**
- **User-friendly software with automated reporting and graph generation.**
- **Durable stainless-steel chamber for long-term reliability.**
- **Comprehensive technical support and after-sales service.**

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9. Contact Us

For inquiries, pricing, or customization options, contact us:
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 Website: https://sites.google.com/view/kdmglobal/
 Product Page: https://sites.google.com/view/kdmglobal/cone-calorimeter-iso-5660

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Providing Reliable Fire Testing Solutions for Global Safety.
