



Horizontal Vertical Flame Test Chamber
Advanced Flammability Classification System for UL 94 and IEC 60695 Compliance

1. Executive Summary

The **Horizontal Vertical Flame Test Chamber** by **KingPo** is a premier diagnostic instrument engineered to evaluate the fire-retardant properties of plastic materials and electrical components. Specifically designed for precision flammability classification, this chamber allows manufacturers and certification bodies to determine HB, V-0, V-1, V-2, and 5VA/5VB ratings under strictly controlled laboratory conditions. It is an essential tool for ensuring fire safety in household appliances, automotive electronics, and IT infrastructure.

2. Engineering Excellence & Technical Precision

Designed for high-frequency laboratory use, the KingPo Flame Test Chamber integrates robust construction with sophisticated timing and control systems:

- **Precision Bunsen Burner:** Features a calibrated $\Phi 9.5 \text{ mm} \pm 0.3 \text{ mm}$ burner tube capable of delivering stable 50 W and 500 W test flames.
- **Indexable Burner Carriage:** Supports rapid, repeatable manual switching between 0° , 20° ,

Website: www.kingpo.hk

Tel: 0086 769 81627526

Address: No.9, University Rd., Songshan Lake, Dongguan, Guangdong, China

E-mail: sales@kingpo.hk

Fax: 0086 769 89032367



and 45° angles, ensuring precise alignment with the specimen as required by UL 94 protocols.

- **High-Resolution Timing System:** Utilizes an independent 0.1 s digital counter to automatically record critical metrics including ignition time, afterflame (Te), and afterglow duration.
- **Environmental & Operator Safety:** Built with a high-temperature resistant coated steel enclosure and an integrated forced-exhaust system to neutralize and remove hazardous combustion by-products.
- **Stable Flame Control:** Advanced gas flow regulation ensures flame heights remain consistent (from 20 mm up to 180 mm) throughout the duration of the test sequence.

3. Technical Specifications

Table 1: Flammability Test Performance Parameters

Parameter	Specification	Regulatory Reference
Primary Standards	UL 94, IEC 60695-11-3, IEC 60695-11-4	Global Flammability Ratings
Test Angles	0°, 20°, 45° (Manual Conversion)	HB, V, and 5V classifications
Flame Height Range	20 mm ± 2 mm to 180 mm ± 10 mm	Adjustable for 50W/500W tests
Timing Accuracy	0–999.9 s ± 0.1 s	Ignition/Afterflame/Afterglow
Burner Dimensions	Φ9.5 mm ± 0.3 mm Inner Diameter	Standard Bunsen Burner
Recommended Test Gas	98% Methane or Propane	High-purity fuel compliance

4. Industrial Applications & Strategic Value

- **Component Manufacturers:** Validating the flammability of enclosures, insulating materials, and connectors in consumer electronics and lighting.
- **Automotive Electronics:** Ensuring interior plastic components meet stringent fire safety standards to protect vehicle occupants.
- **Third-Party Certification Labs (UL, SGS, Intertek):** Providing traceable, repeatable data for Type Testing and Material Recognition (Yellow Cards).
- **R&D and Polymer Science:** Analyzing the effectiveness of flame-retardant additives and optimizing material formulations.
- **Regulatory Compliance:** Generating formal test reports required for CE marking, UL listing, and international market entry.

5. Global Support & Procurement Advantages

- **Multi-Standard Versatility:** A single chamber architecture supports a wide array of

Website: www.kingpo.hk

E-mail: sales@kingpo.hk

Tel: 0086 769 81627526

Fax: 0086 769 89032367

Address: No.9, University Rd., Songshan Lake, Dongguan, Guangdong, China



Kingpo Technology Development Limited

horizontal and vertical test methods, maximizing laboratory ROI.

- **Certified Manufacturing:** Produced in an ISO 9001/14001/45001 facility. Supports ISO 17025 traceable calibration for burner flow and timing.
 - **Proven Reliability:** Backed by over a decade of KingPo expertise in fire safety testing, including a 1-year warranty and lifetime technical engineering support.
-

Note: To achieve maximum repeatability, ensure the test chamber is cleaned of residue after each cycle and verify burner orifice integrity. Always use calibrated gas flow rates to maintain flame temperature consistency. Immediate recording of afterflame and afterglow is critical for accurate V-rating classification.

Website: www.kingpo.hk

Tel: 0086 769 81627526

Address: No.9, University Rd., Songshan Lake, Dongguan, Guangdong, China

E-mail: sales@kingpo.hk

Fax: 0086 769 89032367