EIE

Automatic Abel Flash Point Tester

EIE-FP170-3P

Automatic Abel Flash Point Tester

- ISO 13736, IP 170, GB/T 21789
- Pt100 platinum resistance temperature sensor
- One-Button Start. Automatically performs ignition, heating, stirring, flash point detection, pressure correction, printing, and cooling.
- An advanced 32-bit ARM processor, a high-precision platinum resistor, and 24-bit analog-to-digital converter.
- The industry's first non-contact stirring method.
- Built-in the atmospheric pressure sensor.
- Built-in Peltier cooling system

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Introduction

The **Automatic Abel Flash Point Tester**, developed by **Canada Etech International Enterprises Inc. (EIE)**, adopts the latest international design principles and testing methodologies. Its advanced automation significantly enhances measurement accuracy while minimizing human error, ensuring reliable and repeatable results.

Under standardized test conditions, the instrument automatically detects the point at which a test flame ignites the vapor above the sample and propagates to the liquid surface. This temperature, corrected to an atmospheric pressure of 101.3 kPa, is defined as the flash point—a critical safety and volatility index for flammable liquids. It plays a vital role in the safe production, transportation, storage, and use of these substances.

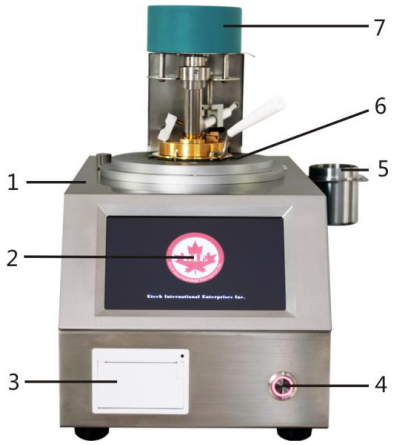
This tester is designed for closed cup flash point measurements of liquids, in full compliance with ISO 13736 and IP 170 standards. When operated according to standard procedures, it delivers highly accurate and consistent results.

Widely applicable across various sectors, the tester is ideal for use in petroleum, electric power, railway, aviation, marine transportation, scientific research, and other industries requiring precise flash point analysis.

Technical Features

1. **Advanced Processing System:**
   Equipped with a high-performance 32-bit ARM processor, the tester is designed using cutting-edge concepts that seamlessly integrate optical, mechanical, and electrical components.
2. **High Measurement Accuracy:**
   Utilizes a high-precision platinum resistor and a 24-bit analog-to-digital converter to ensure accurate and reliable measurement results.
3. **Real-Time Atmospheric Pressure Compensation:**
   Integrated atmospheric pressure sensor enables real-time pressure monitoring and automatic correction of flash point values to 101.3 kPa.
4. **Pt100 Temperature Sensor:**
   Features a Pt100 platinum resistance sensor for precise temperature detection.
5. **Stable Heating Algorithm:**
   Employs an advanced temperature control algorithm for a stable heating rate and high repeatability in measurements.
6. **One-Button Start Operation:**
   Supports fully automatic testing — including ignition, heating, stirring, flash point detection, pressure correction, printing, and cooling — all initiated with a single button press.
7. **Safe and Reliable Ignition:**
   The ignition flame is automatically detected and ignited, ensuring both safety and reliability.

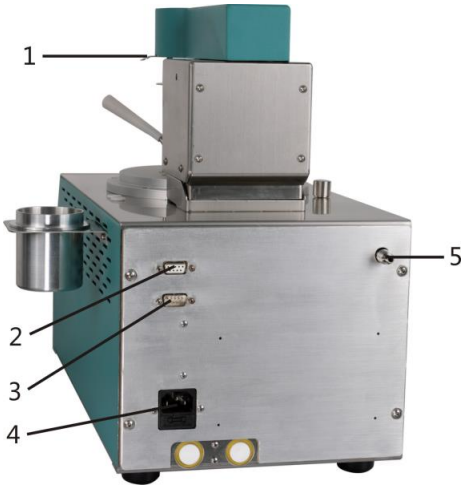
8. **Integrated Thermal Printer:**
   Comes with a built-in thermal printer supporting both automatic and manual printing modes. Measurement data can be exported to a LIMS system.
9. **Large-Capacity Data Storage:**
   Internal memory stores up to 300 sets of historical data for future traceability and analysis.
10. **End-of-Test Notification:**
    Upon completion of testing, a buzzer sounds for three minutes to alert the operator for timely handling.



1 Case 2 Touch screen 3 Micro printer 4 Power switch 5 Test cup cover holder

6 Heating bath 7 Rotatable detector head

1 Stirrer 2 Igniter 3 Test cup cover 4 Gas control valve 5 Test cup 6 Test cup cover pin7 Shutter plate 8 Windshield 9 Test cup handle 10 Integrated temperature sensor



1 Rotatable detector handle 2 RS232 connector 3 Debug connector 4 Power socket 5 Gas connector

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SPECIFICATIONS

Standards	
ISO 13736, IP 170, GB/T 21789	
Technical Details	
Measurement range	10 - 80°C
Sensor accuracy	0.1°C
Ignition method	Gas ignition and electronic ignition can be selected, and the flame diameter can be accurately controlled between 3.2 and 4.8 mm.
Flash fire detection method	Thermocouple detection
Data record	300 groups
User Management	Multi-level user management, different permissions can be set.
Cooling method	Built-in Peltier cooling system
Heating rate	0.2 - 6°C /min continuously adjustable
Ignition temperature interval	0.1 - 3°C continuously adjustable
Stirring rate	0 - 300 RPM continuously adjustable
Dimensions	475mm×230mm×380m (L x W x H)
Overall weight	16.5 KG
Operating Environment	
Operating temperature	5 - 35 °C
Storage temperature	-10 - 55 °C
Relative humidity	< 85%
Operating place	Indoor
Safety	
With external flame alarm interface	
When overheating, the instrument will automatically alarm and stop heating.	
Unknown sample pre-test function	
The flash fire alarm function occurs at the first ignition.	
The experiment is automatically terminated if the expected flash point setting range is exceeded.	