



EIE

Jet Fuel Smoke Point Tester

EIE-SP-05

Jet Fuel Smoke Point Tester



- Standards: ASTM D1322 | ISO 3014 | GB 382
- One-Button start
- "Machine Vision" technology
- Automatic ignition system
- Automatic atmospheric pressure adjustment
- Improving the measurement accuracy, repeatability, reproducibility, and making the data more realistic and reliable.



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Introduction

The EIE-SP-03 Jet Fuel Smoke Point Tester, developed by Etech International Enterprises Inc. (EIE), is designed for the automatic determination of the smoke point of aviation fuels in accordance with ASTM D1322, ISO 3014, and GB 382.

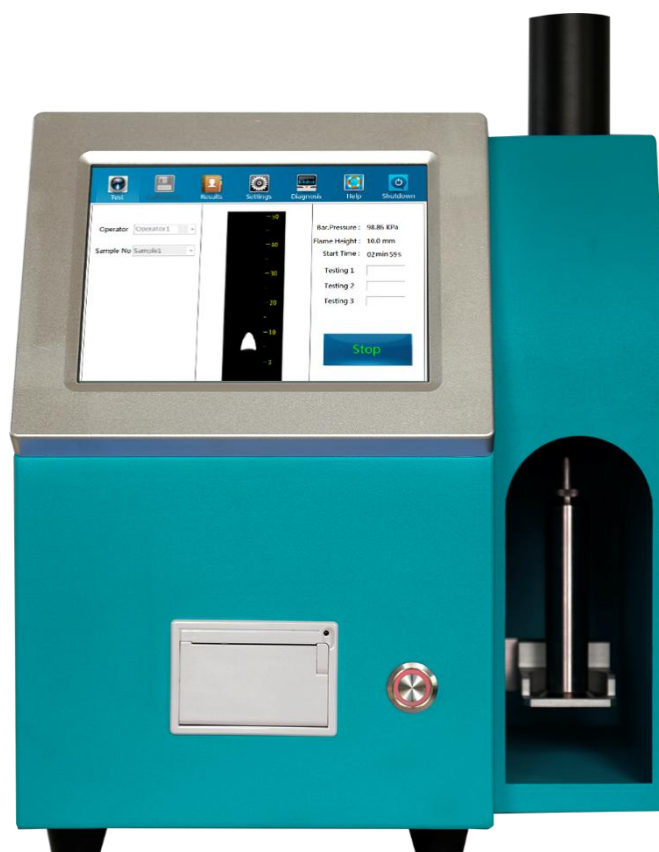
The instrument integrates machine vision technology, automatic ignition, precision flame-height control, and image processing to automate the smoke point measurement process. By reducing operator intervention and subjective visual judgment, the system is designed to improve measurement consistency and reliability.

An industrial high-speed camera and dedicated image analysis software monitor flame characteristics, identify the specified smokeless flame condition, and determine flame height.

Operating Principle

After the operator selects Start Measurement, the instrument automatically ignites the wick and adjusts the flame to an initial height of approximately 10 mm. Following a five-minute stabilization period, it adjusts the wick until a smoking flame condition is detected, then lowers the wick to identify the specified smokeless flame condition.

The system captures and analyzes flame images to determine the smoke point. The measurement sequence is repeated three times, and results are recorded automatically. An audible prompt signals completion.





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Key Features

1. Machine Vision Technology

An industrial high-speed camera and dedicated image processing software provide automatic flame image acquisition, recognition, and analysis, reducing reliance on subjective visual judgment.

2. Fully Automatic Operation

One-button operation initiates ignition, flame-height adjustment, image analysis, smoke point determination, and result printing.

3. Atmospheric Pressure Measurement

A precision pressure sensor monitors ambient pressure. Its reading is used in the smoke point correction process, with manual pressure entry also available.

4. Precision Flame-Height Control

The automatic adjustment system has a specified positioning accuracy of 0.01 mm for stable flame control.

Verification Scale for flame height

5. Colour Touchscreen

An 8.4-inch TFT colour touchscreen provides intuitive controls and real-time flame visualization.

6. Voice Prompts

Audible notifications indicate key operating steps and test completion.

7. Automatic Ignition

The integrated ignition system ignites the wick without manual flame ignition.

8. Communication and LIMS

Gigabit Ethernet and RS232 interfaces, with optional Wi-Fi, support laboratory data communication and LIMS integration.

9. Integrated Printer

A built-in thermal printer provides convenient hard-copy test records.



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Operating Benefits

Automatic Smoke Point Measurement Verification Scale for flame height



Image-Based Flame Recognition

machine vision technology, automatically identify smoke point and flame height. High precision and good repeatability



User-Friendly Operation



Consistent Wick Preparation

to ensure repeatability, reproducibility. Reduce the toxicity of the wick extraction solvent to the operator



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TECHNICAL SPECIFICATIONS

Standards	
ASTM D1322, ISO 3014, GB 382	
Parameter	
Result Resolution	0.1mm
Measurement Resolution	0.05mm
Atmospheric pressure	Automatic detection, resolution is ± 0.01 KPa
Measurement time	< 10 min
Result storage	2000 groups (can be extended according to demand)
Network	Ethernet RJ45 (optional WiFi)
Repeatability (r)	Average 0.6 and reach to 0.3 depending on the measuring value
Reproducibility (R)	Average 0.9 and reach to 0.7 depending on the measuring value
Flame height	0 - 50 mm
Printing	Built-in micro printer (optional USB printer output)
Interfaces	USB $\times 3$, Ethernet $\times 1$, RS232 $\times 1$
Power supply	115 - 230V 50/60 Hz
Power consumption	< 300W
Operating Environment	
Ambient temperature	15 - 35 °C
Storage temperature	-10 - 55 °C
Relative humidity	< 85%
Installation	Indoor use, no significant airflow
Dimension and Weight	
Dimensions (mm)	308 x 305 x 432 (length x width x height) mm
Weight	15KG