



**EIE**

Automatic Total Acid Value Tester for Jet Fuel

**EIE-TAN-01**

# Automatic Total Acid Value Tester for Jet Fuel



- ASTM D3242, GB/T 12574
- The cutting-edge "machine vision" technology.
- Using a high-speed micro-industrial computer and industrial-grade high-fidelity high-speed cameras
- By establishing a mathematical model, the digital image is analyzed, the end colour is automatically determined, and the total acid value is determined. Its accuracy can reach more than 5 times the current standard's repeatability, which completely replaces artificial naked eye recognition.



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## Introduction

The EIE-TAN-01 Automatic Total Acid Value Tester for Jet Fuel is a product independently developed by the Canadian EIE Company and has completely independent intellectual property rights. It is developed by referring to the manual titration procedure in the standard. It can completely replace manual measurement work.

This instrument adopts the cutting-edge "machine vision" technology in the international measurement and control field, realizes the automatic completion of the total acid value determination work, and opens up a new field of "machine vision" technology application.

The successful development of this instrument reduces the operator's labour intensity and improves work efficiency. It also eliminates the individual physiological error and system error caused by the operator's visual inspection of the colour to determine the endpoint. It significantly improves accuracy, repeatability, and reproducibility, making the data more authentic and reliable.

This instrument is easy to operate. The operator must first make preparations according to the measurement requirements specified in the standard and then place the sample bottle of the tested sample on the instrument's measurement turntable according to the instrument's measurement steps.

It has a one-button start feature. By pressing the "Start" button on the touch LCD screen, the instrument will do automatic indicator filling, automatic nitrogen aeration, automatic stirring, automatic titration, capture the end colour described in the judgment standard, and automatically calculate and store the acid value result. The process does not require manual intervention, and the total acid value is determined automatically. The end of the measurement is accompanied by a voice prompt.

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## Technical Features

1. This instrument uses a high-speed micro-industrial computer, independently researched and developed the total acid value tester's mechanical structure and measurement software with all intellectual property rights. It achieves automatic titration, image colour collection, recognition, and calculation processing in the titration process, and automatically completes the determination of the titration endpoint, with high accuracy and strong real-time performance.
2. The instrument uses industrial-grade high-fidelity high-speed cameras to perform video image collection and transmission.
3. By establishing a mathematical model, the digital image is analyzed, the end colour is automatically determined, and the total acid value is determined. Its accuracy can reach more than 5 times the current standard's repeatability, which completely replaces artificial naked eye recognition. It avoids problems such as inaccurate colour recognition of artificial endpoints and poor repeatability, which lead to large data deviations. The determination of jet fuel's total acid value is more accurate, with better repeatability and higher objective truthfulness of data.
4. It uses a 7-inch TFT high-definition colour touch LCD screen, real-time display of titration colour status.
5. It has an exquisite UI human-computer interaction interface, intuitive and friendly. Menu-style buttons are simple to operate and cater to modern people's usage habits to the greatest extent. It supports a touch screen virtual keyboard, physical keyboard, mouse input operation, flexible and straightforward, and meets various needs.
6. Specially developed the prompt voice function of the main operation steps, real-time broadcast, novel and direct, timely feedback operation actions, reminding the operator, avoiding operation errors, and improving the determination's success rate.
7. Gigabit network card (optional WiFi) is adapted. The instrument can be connected to the LIMS system, with high-speed and reliable data upload in real-time, to achieve laboratory information management.
8. Using the system default printer, you can choose the automatic printing function after the measurement is over. Realize data viewing and paper storage of data, memos for reference, worry-free traceability.

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**EIE-TAN-01****SPECIFICATIONS**

Standards	
ASTM D3242, GB/T 12574	
Technical Details	
Titration accuracy of titration solution	±0.01 mL
Indicator filling accuracy	±0.01 mL
Repeatability of results	Increase by 500% (compared with the repeatability of the standard)
Result resolution	0.0001 mgKOH/g
Single sample titration time	Less than 5 minutes
Total test time	Less than 20 minutes
Pressure of nitrogen gas source	Not less than 0.3 MPa (maximum 0.6 MPa)
Flowmeter adjustment range	0-1000 mL/min
Volume of titrator	5mL
Volume of titration solution bottle	30mL/50mL (standard 50mL)
Volume of indicator reservoir	2mL
Blank sample bottle volume	200mL
Sample bottle volume	400mL
Result storage	1000 groups (can be expanded according to demand)
Network mode	RJ45 (optional WiFi)
Print output	USB external printer
Interface output	USB×2, RJ45×1
Power Supply	100 - 240V 50/60 Hz
Power Supply fuse	250V/5A 5*20mm
Total Power	< 300W
Dimensions	494 x 414 x 677 (length x width x height) mm
Weight	25 KG
Operating Environment	
Ambient temperature	15 °C - 30 °C
Storage temperature	-10 °C - 55 °C
Relative humidity	no more than 75%
Operating Place	indoors, in a fume hood, but there is no obvious airflow