Thermal Oxidation Stability of Aviation Turbine Fuels
ASTM D3241

TO10 – Thermal Oxidation Stability Test Rig

Methods:
ASTM D3241
IP 323, ISO 6249
ASTM D1655, D7566
DEF STAN 91-091



- **5th Generation of Jet Fuel Thermal Oxidation Test**
- **Full compliance with ASTM D3241, IP 323, ISO 6249**
- **Intelligent communication for optimal traceability**
- **DR10 – ITR connectivity**
- **User friendly manipulation**
- **Highest level of precision**
- **Fastest operation time**
- **Enhanced safety**

The TO10 revolutionizes the thermal oxidation test of jet fuel by bringing **unmatched reliability of test results**. This very innovative instrument allows perfect sample flow, volume and operating pressure control, combined with unparalleled test temperature controls.
The preparation of the test is **simplified** to its maximum: no tools are needed for the test assembly and a dedicated gauge allows easy and perfect tube positioning.
The smart software makes it possible to initiate a test immediately and monitor in real time all the test conditions from the same display. Together with the fast cooling of the instrument, it **improves drastically the lab efficiency and productivity.**
The instrument automatically provides **full traceability** of the complete test (including the tube rating) without need of extra accessories or specific tubes. It can be connected to the **referee** automatic tube rator ITR (DR10), for automatic data transmission.

Applications

Based on its flexibility, its robustness and reliability, the TO10 is designed for any type of application, research, civilian and military fuel certification.

AD systems
POWERED by INNOVATION

Operation

Running a test with the TO10 is straightforward and very easy. The operator just has to:

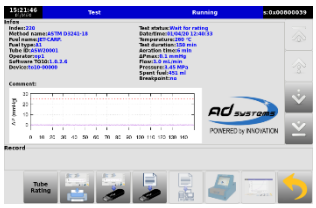
(1) pour the sample into the beaker
(2) install the test sections (simplified operation)
(3) close the door and initiate the test

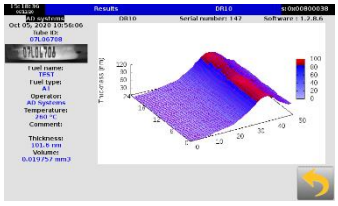


Then **the entire procedure is automated:** fuel aeration, test, tube rating (with the DR10-ITR) and reporting.

Reporting

All test conditions are displayed and reported by the instrument (including the ΔP monitoring and the tube rating). When the TO10 is coupled with the DR10, the 3D curve and deposit ratings are automatically linked to the test conditions and final report, bringing **full traceability of the test** in one action. The report can be printed, transmitted to LIMS or copied to USB.





Safety

The TO10 represents major improvement in safety. The double door and VOC extraction systems protect operators from exposure to hazardous vapors. The light indicator prevents the operator from any burning risk. Automatic beaker detection prevents test initiation if one of them is not in place.

Benefits

The TO10 is **the most reliable instrument** available. It controls very precisely all the test conditions: tube positioning with the dedicated gauge, test temperature, perfect constant flow and pressure. **Easy** to use and **fully automated**, the instrument comes with the **intelligent communication** feature, allowing automatic communication with any DR10-ITR instrument. Using a DR10-ITR for the deposit rating will allow to report **the referee result in all jet fuel specifications.** Bringing a **step forward in safety**, the TO10 is as well the **fastest oxidation rig** thanks to its complete automation, direct menu access, simplified mounting, **active cooling** when the test is finished and **color light indicator**.
Reduced operation time equals money!

Technical specifications	Description
Test Methods	ASTM D3241, IP323, ISO 6249 Up to 21 programmable test methods
Test Temperature	100°C – 380°C
Test Time	4 – 600 minutes
Operating Pressure	3.45 MPa (500 psi) ±1%
Differential Pressure	0 – 750 mmHg (bypassed automatically at +700 mmHg)
Fuel Aeration	1.5 L/min (programmable) 6 min (programmable)
Fuel Flow	3.0 ml/min ±1% (programmable) Dual 5mL syringe pump No pulse or peak
Air Flow Humidity	Humidity sensor with displayed message for desiccant replacement
Thermocouple	Type K, class 1
Bus Bar Temperature Control	Independent and programmable No liquid cooling circulation Peltier modules + heat pipe technology
Heater Tube Assembling	Dedicated gauge to quickly and perfectly position the heater tube
Fuel Vapor Handling	Dedicated compartment with sliding doors Fume extractor connection
Results Storage	Result Database Limited only to capacity of external device
DR10 – ITR Connectivity	Full test results can be automatically transferred from the DR10 to the TO10
Communication	USB (2), Ethernet (1)
Printing	USB graphic printer (optional)
Dimensions	440 x 600 x 670 mm (17”x 23”x 26”)
Weight	75 kg (165 lbs)
Power supply	100/240 V – 50/60 Hz – 8 A
Operating Conditions	Temperature: from +10 to +35°C RH: 20% to 90% non-condensing

We reserve the right to alter specifications without notification

Your local distributor:

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