



NewLab 226 LTFT – Low Temperature Flow Test



ASTM D4539

Subject

This test method covers estimating the filterability of diesel fuels in some automotive equipment at low temperatures.

The Low Temperature Flow Test results are indicative of the low temperature flow performance of the test fuel in some diesel vehicles.

The test method is especially useful for the evaluation of fuels containing flow improver additives in a range of +10°C ... -30°C.

Measuring LTFT principle

Up to 6 300 ml test vessels are cooled at a specified rate of 1°C/h and, at every °C of cooling, a vacuum of 20 kPa is applied to a filter assembly immersed in the first sample. If the sample recovered in a graduated receiver vessel reaches the 180 ml in 60 sec. the analysis continues to the further 1°C test temperature (passed).

When the sample doesn't reach the 180 ml within the 60 sec. the test is failed.

The temperature of the last passing result test has to be recorded as minimum LTFT pass temperature.

Main Features

- The instrument is a six places floor model
- Equipped with a built in cooling system with motor compressor CFC free for temperatures up to -45°C.
- Fully automatic, controlled by dedicated panel pc with touch screen and a large display.
- All the parameters and the current status of the analysis are shown in real time.

Measuring LTFT devices

- Aspiration pipette
- Filter assembly
- Light barrier

Measuring temperature probe

- Platinum resistance PT100 class A

Vacuum system

- Micropump 350 kPa
- Electronic control for vacuum regulation 20 kPa
- Vacuum stabilizer

Measuring Parameters

- Temperatures: in °C
- Measuring range: +80°C ... -80°C
- Resolution: 0.06 °C
- Accuracy: ± 0.1 °C
- Repeatability / reproducibility as per standards methods or better

Software Features

- User friendly interface
- All analytical parameters recorded
- Customisable analysis parameters and methods
- Customizable results report
- Printable graphs and results

The software includes:

Analysis Menu

- Standard method as per ASTM D4539
- Optional methods:
 - T-sample, T-bath (Delta T constant)
 - selectable cooling rate °C / h
 - selectable bath steps temperature
 - fast bath with selectable temperature
- Audible alarm and displayed messages at the end of the analysis and in case of errors and/or malfunctions

- The parameters displayed and updated in real time are:
 - sample temperature
 - bath temperature
 - vacuum pressure
 - level light value
 - aspiration time
- Thanks to an histogram (graph) that shows the aspiration times it is possible to observe the behaviour of the sample during its cooling phase
- This feature is an excellent tool for the observation and evaluation of the additivations actions and behaviour
- [Diagnostic Menu](#)
- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / °F / Volt
- Vacuum data displayed in mBars
- [Calibration Menu](#)
- Automatic calibration of each temperature probe
- Automatic calibration of vacuum sensor
- Last calibration date referred to each single probe displayed and relative data printable
- Display of calibration diagram
- Insertion of offset values
- Standard and advanced calibration modes
- [Data Utilities](#)
- Fields for introduction of operator and product name
- Archive viewer for files recall
- All analysis stored in Excel® compatible format
- Storage capacity for more than 60'000 analysis
- LIMS compatible



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Integrated Touch Screen Panel PC

- TFT/LCD 12"
- Resolution 1024 × 768, 16.2 M colours
- 2 USB ports for connection to an external printer and/or external PC
- Storage capacity for more than 60'000 analysis

Cooling System

- Integrated gas CFC free motor compressors single stage (for temperatures up to -45°C)

Safety Devices

- Pressure controller for 1st stage motor compressor
- Thermo-switch for cooling / heating jacket
- Motor compressors with internal overload devices

Electrical Supply

- 220V ± 15% / 50 to 60 Hz
- 115V ± 15% / 60 Hz

Cord Cable

- 3 conductors flexible cable 2 m (7 feet) length with PVC sheath oil and heat resistant as per CENELEC directives

Ambient Temperature

- max 32 °C
- H.R. 80%

Dimensions

- width 98 cm
- depth 60 cm
- height 130 cm

Weight

- 80 kg

Spare Parts

- LAB-220/005-03: heater + auto adhesive + insulation
- LAB-220/005-04: thermo switch
- LAB-220/005-06: PT100 bath
- LAB-220/008-12: PT100 sample
- LAB-220/007-02: static relay
- LAB-220/007-04: PCB fuse 1 AT, box of 10 pcs.
- LAB-220/006-01: cooling fluid valve + fitting
- LAB-220/002-02: vacuum valve + fitting
- LAB-220/007-01: main electronic board LTFT
- LAB-220/008-04: 300 ml glass specimen vessel
- LAB-220/008-05: 400 ml glass receiver vessel
- LAB-220/009-07: rubber stopper for receiver
- LAB-220/009-08: lid for specimen vessel
- LAB-220/008-13: glass aspiration tubing "s"
- LAB-220/008-14: glass receiver tubing "l"
- LAB-220/008-15: glass vacuum tubing "xs"
- LAB-220/008-18: joints vinyl tubes, pack of 12 pcs.
- LAB-220/013-01: filter assembly
- LAB-220/013-02: filter
- LAB-220/013-021: o-ring for filter

Calibration Tools

- OilLab 80: calibration decade box PT100 simulator
- OilLab 81: set of connectors and cables for cold range