LINETRONIC TECHNOLOGIES

NewLab 226

LTFT – Filterability of Diesel Fuels by 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.

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

- Temperature: 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 istogram (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 tools for the observation and evaluation of the additivations actions and behaviour

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Diagnostic Menu
- Direct access to all analog, digital, inputs and outputs
- Selectable value displaying: °C / 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

Integrated 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

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 (cm)
- widht 98
- depht 60
- height 130

Weight
- 80 kg

Spare Parts

LAB-220/005-03: heather + 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: glass receiver vessel
LAB-220/009-07: stopper assembly for receiver
LAB-220/009-08: lid for specimen vessel
LAB-220/008-13: glass aspiration tubing
LAB-220/008-18: kit of clamp + kness
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

CE

Linetronic Technologies
Via Onorio Longhi 2
6864 Arzo
Mendrisio
Switzerland
tel. +41 91 630 07 03
fax +41 91 630 07 19
email: info@lin-tech.ch

CERTIFIED ISO 9001:2008 COMPANY
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