On-site Residual Fuel Compatibility Tester - ST10

Methods:
ASTM D4740
ISO PAS 23263
CIMAC guidelines

Applications

- Vessel operators
- Refineries
- Terminals
- Power plants
- Independent laboratories
- Military

Fuel Compatibility and Cleanliness Testing

AD Systems has developed a portable on-site fully automated instrument for compatibility and cleanliness of residual fuel oil and distillate according to ASTM D4740 spot test.

On board a vessel the ST10 is a good way to measure the compatibility of marine fuels (DM, HSFO, RM, ULSFO, VLSFO,…).

This patented portable device – ST10 is a complete automation of the ASTM D4740 method.

All the phases of the test are grouped in a suitcase, the conditioning of the samples, the preparation of the spot, its drying and the automatic rating by camera and associated software.

The only phases under the load of the operator are the sampling and the deposition of the drop with the aid of a micropipette supplied with the equipment.

As a result, the apparatus can be used anywhere by untrained persons whenever power is available.

The results are stored in a built-in result database. The image of the spot is memorized at the time the spot is rated. The ST10 ensures perfect traceability of the test.

Principle

The sample is prepared according to the procedure described in the ASTM D4740 test method. Once the fuel is dropped on the filter paper, all phases are automatically performed. A picture of the spot is automatically taken after the one hour drying phase. The picture is binarized and the ST10 reports a 1 to 5 rating according to ASTM D4740.

AD systems

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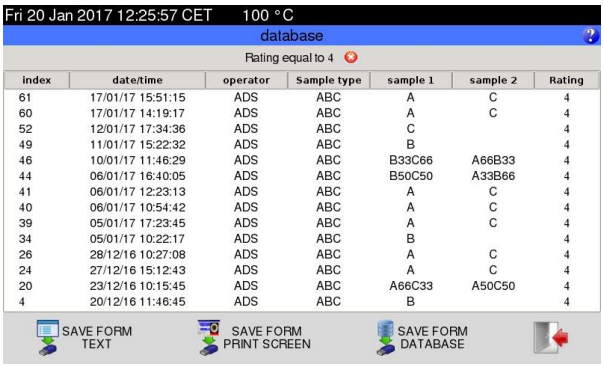
ST10 Features and Benefits

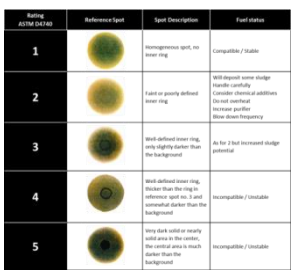
- A complete automated system self-contained in a carrying case
- Designed for both on-board use and lab use.
- Standard test method used by conventional laboratories.
- Fully automated, no training or analytical knowledge required
- Removes subjectivity
- Prevent sludge deposits, failure of fuel handling systems and costly combustion related engine damage.
- No solvents
- Quick and reliable determination.
- Full traceability with built-in database

Operation

- The operator keys in all information related to the sample and the test conditions
- The fuel or the mixed fuel is poured into a disposable vial and then placed into the built-in oven.
- The filter paper is positioned on the conveyor. The ST10 automatically places the filter paper in the oven for drying at 100°C.
- The operator is prompted when the sample temperature is reached and the filter paper is pre-positioned for sample injection.
- With the micropipette, the operator pours one drop of fuel on the filter paper.
- The fuel spot is automatically positioned in the oven at 100°C.
- After the drying phase, the fuel spot is automatically moved under the camera and a picture is captured.
- The software analyses the fuel spot.
- The test result is displayed and stored in a built-in database.



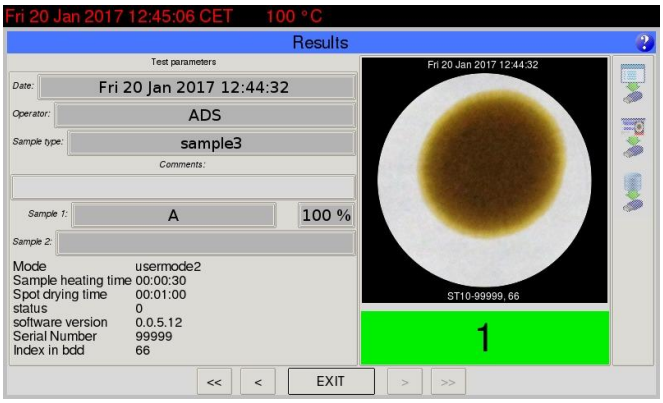
The ST10 comprises:



- ✓ All consumables and accessories including micropipette.
- ✓ Built- oven for sample and filter paper
- ✓ Automatic handling of the filter paper
- ✓ CCD camera to take the sample spot picture
- ✓ A built-in computer
- ✓ A dedicated software to analyze the picture and report the result
- ✓ A built-in database for full test traceability
- ✓ USB and Ethernet ports

Reporting

The test result is displayed and saved in the built-in database with all test conditions including the spot image.



List of parameters saved with a result:

- ✓ Sample type(s)
- ✓ Sample ID(s)
- ✓ ASTM D4740 rating (from 1 to 5)
- ✓ Date & time
- ✓ Operator name
- ✓ Comments
- ✓ Test conditions
- ✓ Instrument serial number
- ✓ Software version

Ordering Information

AA120-001	**ST10** - On site Fuel Compatibility and Cleanliness Tester

Reported Results

Test method	ASTM D4740
ASTM D4740 rating	From 1 to 5
Accuracy	Less than one rating
Test mode	Programmable : Fuel Compatibility or Fuel Cleanliness

Technical Specifications

Display	7" Touchscreen ; 10 finger capacitive touch ; Screen size : 155mm x 86mm ; Resolution : 800 x 480 px
Oven temperature	100°C for the filter paper 93°C for the fuel Resolution 1°C
Sample heating time	According to D4740 or programmable
Oil spot drying time	According to D4740 or programmable
Results storage	Up to 100 000 results
LAN connectivity	Ethernet port RJ45
Data output	USB (4), Ethernet
Dimensions	W x D x H (mm) : 420 x 350 x 222 mm W x D x H (inches) : 16.5" x 14" x 8.5"
Weight	9 kg (20 lbs)
Electrical	115 to 230V - 2A - 50/60Hz

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