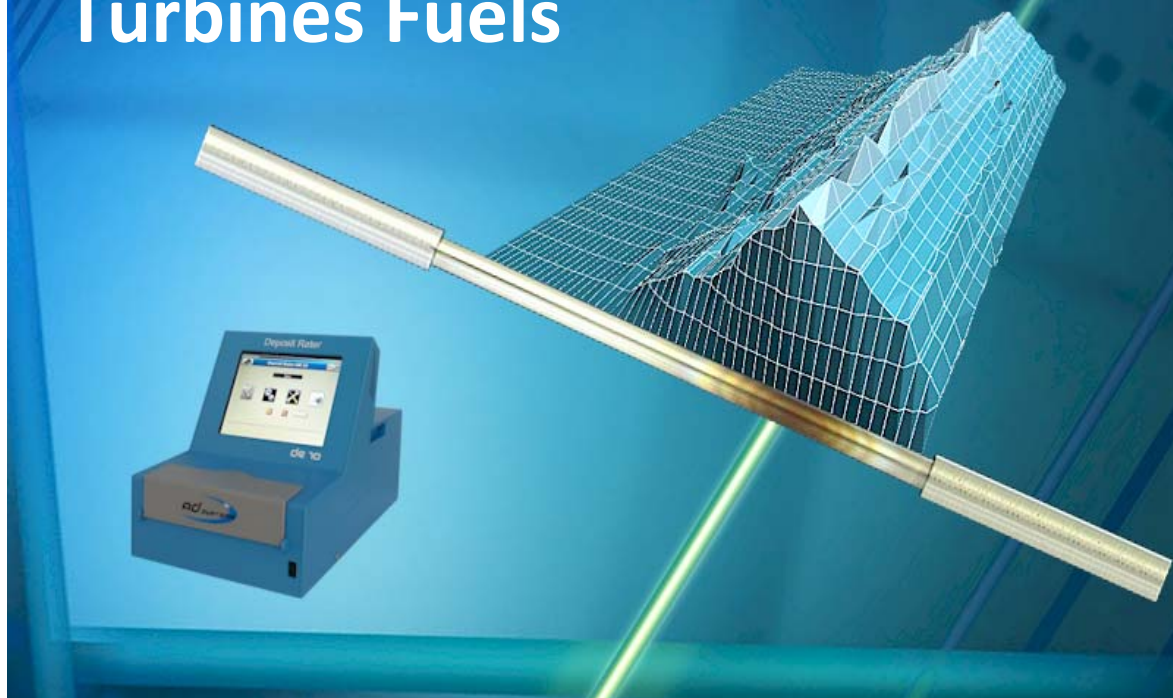




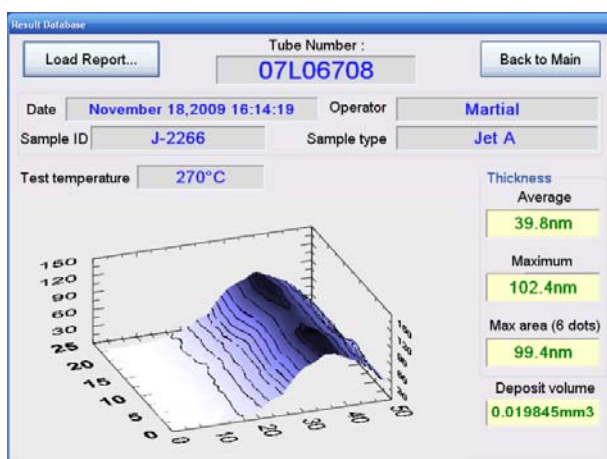
# Deposit Rater - DR 10

## Thermal Oxidation Stability of Turbines Fuels



- ▶ Absolute measurement of deposit thickness
- ▶ Quick, easy, and objective rating
- ▶ Ideal tool for all applications
- ▶ Very compact design

- Methods (1):**
- ASTM D 3241
  - IP 323
  - ISO 6249



### Benefits

The current visual rating method used for specification purposes suffers from the drawback of operator subjectivity and provides no real information on the thickness and volume of deposits, parameters which are far more meaningful for characterizing jet fuels for users and suppliers.

The DR 10 measures the deposit thickness at 1,200 points around the surface of the tube. At the end of the test, it displays a 3D mapping of the deposit in addition to average and maximum thicknesses and total volume deposit.

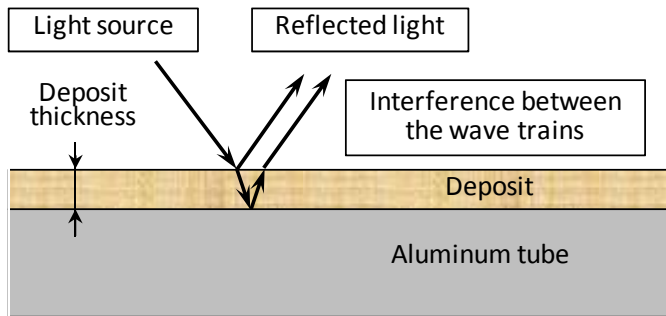
### Applications

The DR 10 is designed for all types of applications related to thermal oxidation testing of jet fuels including research, refining, pipeline, terminals, and mobile laboratory applications - every location where thermal oxidation of jet fuel is evaluated.



## Principle

The DR 10 uses an interferometry technique based on a powerful light source, a fiber optic probe, and a spectrometer. Specific light is emitted on the surface of the tube.



The reflected light is collected and the light interference created by the deposit is analyzed with a spectrometer. The software analyzes the interference fringes and calculates the deposit thickness.

## Operation

The heater tube is prepared according to ASTM D 3241 test procedure and is placed in the test chamber of the DR 10.



The DR 10 is equipped with a touch screen. A virtual alphanumeric keypad is used to program the test. The sample types, the operator names and test temperatures are pre-programmed. Only the sample ID and the tube serial number have to be entered. The tube serial number is displayed by a camera and the technician simply enters the displayed serial number at the beginning of the test. With this minimal data entry, the 1,200 points tube scanning is initiated. The full tube scan is completed in less than 15 minutes.

The DR 10 displays a 3D image of the deposit and the average and the maximum thickness deposit values. The mean deposit thickness of the thickest 2.5 mm<sup>2</sup> area defined in the ASTM D 3241 is reported in addition to the calculated total deposit volume.



### Reported results

Reported results	Measurement limits
Average deposit thickness	0 to 1200 nm
Maximum deposit thickness	0 to 1200 nm
Maximum deposit thickness area	0 to 1200 nm
Deposit volume	0 to 0.5 mm <sup>3</sup>

### Technical specifications

Technical specifications	Description
Test duration	15 minutes (maximum)
Number of measurement points	1,200 points
Results storage	Limited only to capacity of external device
LAN connectivity	Ethernet port RJ45
Printer output	USB (printer is optional)
Data output	USB (2), Ethernet
Dimensions (mm)	250x160x290 (10"x 16"x 12")
Weight	10 kg (22 lb)
Electrical	115 to 230V - 2 A - 50/60 Hz

We reserve the right to alter specifications without notification

*Note 1: The DR 10 is not yet part of the method. ASTM Subcommittee J has formed a WG in charge of evaluating the thickness deposit measurement technique. AD systems with its DR 10 is actively working in the WG.*

Your local distributor:

For additional information:

### AD systems

20 rue François Arago

14123 Ifs - France

+33 (0)2 50 28 14 20

Email: sales@adsystems-sa.com

www.adsystems-sa.com

