

SpectroFTIR Q⁴⁰⁰ Oil Analyzer

Features

- ▶ Instrument and software specifically designed for the analysis of in-service (used) oil.
- ▶ Complies with ASTM E 2412 Standard Practice for Condition Monitoring of Used Lubricants by Trend Analysis Using Fourier Transform Infrared (FT-IR) Spectrometry.
- ▶ Quantitative TAN and TBN analyses (in mgKOH/g)
- ▶ Patent-pending flip-top sample cell eliminates need for solvents and simplifies cleaning.
- ▶ Fixed interferometer, does not require software or manual alignment.
- ▶ Exceptional stability and reliability in harsh operating environments.
- ▶ Completely sealed and desiccated to prevent humidity interferences.



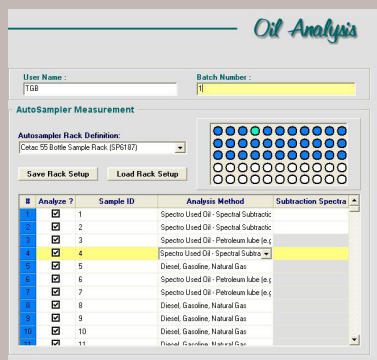
"The SpectroFTIR Q⁴⁰⁰ was developed and optimized for predictive maintenance programs according to JOAP and ASTM standards for the rapid determination of oxidation, nitration, sulfation, water, coolant, fuel dilution, soot and wear additive depletion in used lubricating oils."

The SpectroFTIR Q⁴⁰⁰ Oil Analyzer

The SpectroFTIR Q⁴⁰⁰ Oil Analyzer is specifically designed for the molecular analysis of lubricating oil to determine oil degradation and contamination. It was developed and optimized for predictive maintenance programs according to JOAP and DIN standards for the rapid determination of oxidation, nitration, sulfation, water, coolant, fuel dilution, soot and wear additive depletion in used lubricating oils. It also provides quantitative TBN analysis (in mgKOH/g) for mineral based engine oils and TAN analysis (in mgKOH/g) for polyol ester based synthetic turbine fluids. When purchased as a manual system, it features a patent-pending flip-top sampling cell designed for easy and reliable sample introduction, analysis and cell cleaning without the need for solvents.

When coupled with an optional autosampler, the SpectroFTIR Q⁴⁰⁰ Oil Analyzer is ideal for condition monitoring laboratories with large sample loads. For automatic operation, the SpectroFTIR Q⁴⁰⁰ spectrometer is equipped with a zinc selenide wedge transmission flow cell that improves performance by minimizing fringing associated with normal cells. The transmission cell has high infrared throughput, is optimized for used oil analysis and is easy to clean. The cell assembly is mounted in a pre-aligned base plate for fast and reproducible exchange.

The system is easy to use and requires little training for operation since it is optimized for one application: used oil analysis. It features continuous on-line diagnosis of all spectrometer components and automatic control of selected measurement parameters.



The SpectroFTIR Q⁴⁰⁰ Oil Analysis Software is flexible and capable of accommodating a variety of autosampler racks and sample bottles.

Specifications

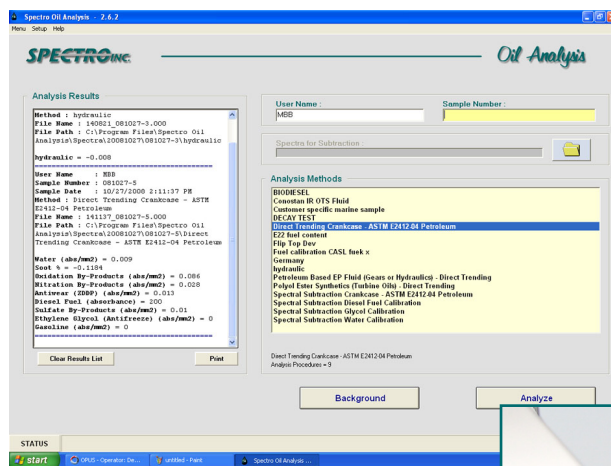
**The SpectroFTIR Q⁴⁰⁰
Spectrometer is a complete
used oil analysis system.**

It includes:

- ▶ Software for in-service oil analysis.
- ▶ Permanently aligned, high sample throughput interferometer.
- ▶ Software that continuously monitors all optical components and accessories.
- ▶ Source, detector and laser which are easily replaced without special training.
- ▶ Easy to install sampling accessories that mount into pre-aligned quick lock base plate.
- ▶ Fixed interferometer which avoids the need for time consuming and complex alignment.
- ▶ Internal Validation Unit (IVU) with calibration standards to systematically validate the system.
- ▶ Computer and monitor, Windows® XP PRO operating system.
- ▶ Ethernet connection for spectrometer operation from a PC, laptop or network.

Spectral Range	7,500 to 370 cm^{-1} , with standard KBr beamsplitter
Wavelength Accuracy	Better than 1 cm^{-1} (apodized)
Photometric Accuracy	Better than 0.01 cm^{-1} @ 2,00 cm^{-1}
Signal to Noise (Minimum)	5 Sec: >6,000:1 (= 7.2*10 ⁻⁵ AU noise) peak-to-peak, 4 cm^{-1} resolution
Signal to Noise (Achievable)	5 Sec: >8,000:1 (= 5.4*10 ⁻⁵ AU noise) peak-to-peak, 4 cm^{-1} resolution 1 Min: >45,000:1 (= 9.7*10 ⁻⁶ AU noise) peak-to-peak, 4 cm^{-1} resolution
Interferometer	Permanently aligned, high stability
Spectrometer Size (WxDxH)	66.5 x 43.4 x 28.1 cm (26 x 17 x 11 inches)
Sample Compartment Size (WxDxH)	25.5 x 27 x 16 cm (10 x 10.6 x 6.3 inches)
Weight	37 Kg (81 lbs)
Power	85 – 265 VAC, 45 – 67 Hz, 70 W
Computer Interface	Ethernet Connection
Cleaning Solvent	None for flip-top cell, pentane for wedge cell (automatic operation).

The SpectroFTIR Q⁴⁰⁰ is an analyzer optimized for the manual or automatic analysis of in-service oil degradation and contamination"



"The SpectroFTIR Q⁴⁰⁰ features software designed exclusively for in-service oil analysis."

"The flip-top cell eliminates the need for plumbing and solvents. It is easy to remove and install by sliding it into its holder."

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