

PERFORMANCE
YOU CAN RELY ON



NEW!

*Graphic chart display
of oil spectra on large
color touch screen for
fast & easy on-site
oil analysis*



Fingerprint Your Oil in Seconds

Degradation Monitoring: oxidation, nitration, sulfation, ester breakdown, depletion of phosphate antiwear additives and antioxidants

Contamination Analysis: soot, water, glycol, gasoline, diesel fuel

Property Calculation: TAN, TBN, viscosity class, change in viscosity

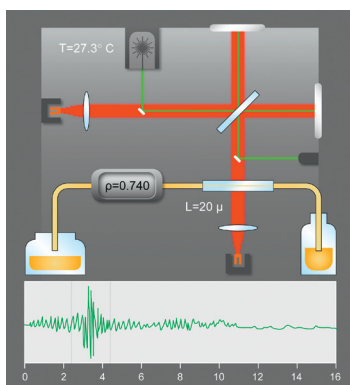
all this in seconds with a portable analyzer in full compliance with the latest international standards

ERASPEC OIL

PORTABLE FTIR OIL ANALYSIS IN SECONDS

High-Speed Results

Lubrication is vital for machinery operation. Early detection of lube oil degradation and engine wear is essential for timely replacement. It helps avoid unnecessary maintenance while reducing the risk of breakdowns. ERASPEC OIL uses the economic infrared (IR) analysis test method to deliver specific information about the chemical condition of the lubricating oil. IR analysis also allows inferences about the state of the machine component from which the sample was taken. **IR measurement is fast, provides reliable results and a large amount of information can be gained from an IR spectrum.** Therefore, oil analysis laboratories use it as a routine method.



Stand-Alone Portability

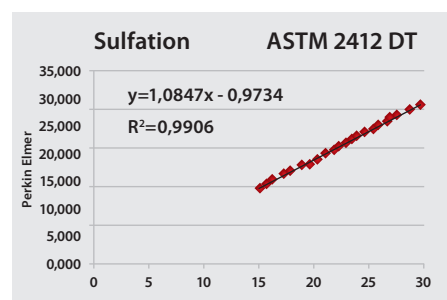
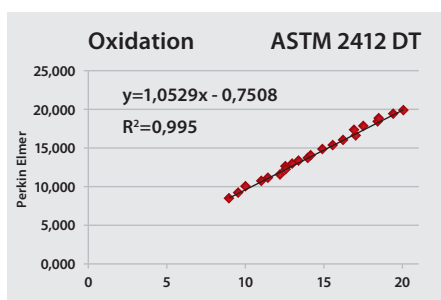
With its patented rugged FTIR spectrometer the **ERASPEC OIL is the first truly portable stand-alone analyzer that offers all the advantages of latest FTIR technology** for high speed lubricant oil condition monitoring in full compliance with ASTM, DIN and JOAP methods.



Within seconds the fully automated ERASPEC OIL provides a detailed fingerprint of the used oil to check for degradation and contamination. First, an integrated pump introduces the sample automatically from the sample container. Then, the ERASPEC OIL measures and calculates the results from the IR spectrum using standard evaluation methods. Its **built-in industry PC and the large full-color touch screen** allow the direct display of the oil spectra as graphic chart. Therefore, the spectra can be analyzed immediately after measurement. Several thousand spectra can be saved in the internal instrument memory, which makes it easy to compare new measurements with previous results.

Lab FTIR vs. ERASPEC OIL

*The comparison study of the portable ERASPEC OIL vs. latest laboratory FTIR analyzers from Bruker Optics and Perkin Elmer showed an **excellent correlation for all parameters.***



Comparison Perkin Elmer lab FTIR – ERASPEC OIL for Oxidation, Sulfation and Nitration

Field Design for Lab Performance

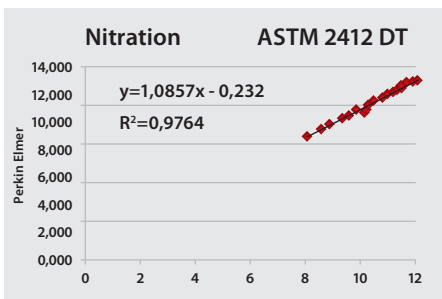
Compact and rugged (8 kg / 17.6 lb in a full aluminum housing), the **ERASPEC OIL brings lab quality results to the field.**

Immediate feedback on in-service oil quality even at remote sites, where avoiding equipment breakdown is most critical.



Reliable Precision

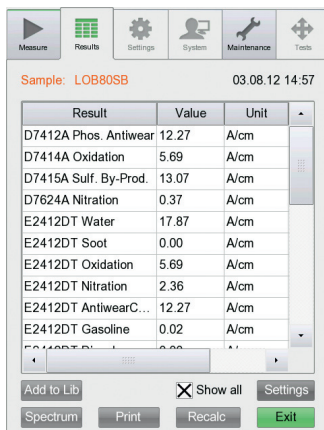
In order to show the great performance of the ERASPEC OIL, an extensive comparison study with two dedicated laboratory FTIR oil analyzers, one system from Bruker Optics, the other system from Perkin Elmer, has been performed. Oil samples were taken from engines between several oil change intervals, one interval typically being 3000 hours of operation. The evaluation of the spectra for both the laboratory FTIRs and the ERASPEC OIL was done using latest ASTM standards incl. ASTM E2412.



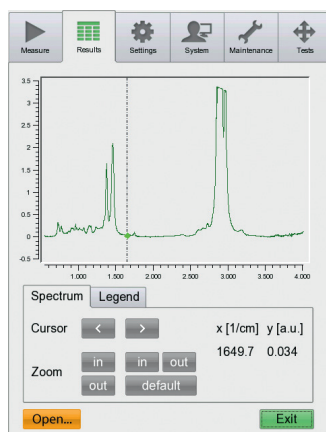
ERASPEC OIL

Available Test Methods

ERASPEC OIL offers highly reliable lubricant oil condition monitoring in full compliance with the following ASTM, DIN and JOAP methods:



Result	Value	Unit
D7412A Phos. Antiwear	12.27	A/cm
D7414A Oxidation	5.69	A/cm
D7415A Sulf. By-Prod.	13.07	A/cm
D7624A Nitration	0.37	A/cm
E2412DT Water	17.87	A/cm
E2412DT Soot	0.00	A/cm
E2412DT Oxidation	5.69	A/cm
E2412DT Nitration	2.36	A/cm
E2412DT AntiwearC...	12.27	A/cm
E2412DT Gasoline	0.02	A/cm



Parameter	Standards	Range
Soot	ASTM E2412 JOAP, DIN51452	0 – 6 m% 0 to > 300 Abs/cm
Oxidation	ASTM E2412 ASTM D7414 JOAP, DIN51453	0 to > 30 Abs/cm
Nitration	ASTM E2412 ASTM D7624 JOAP, DIN51453	0 to > 30 Abs/cm
Sulfation	ASTM E2412 ASTM D7415 JOAP	0 to > 30 Abs/cm
Phosphate Antiwear Additives	ASTM E2412 ASTM D7412 JOAP	0 to > 30 Abs/cm
Antioxidant depletion		to be defined
Water	ASTM E2412 JOAP	0 – 5 m% 0 to > 30 Abs/cm
Glycol (Antifreeze)	ASTM E2412 JOAP	0 – 5 m% 0 to > 30 Abs/cm
Diesel Fuel	ASTM E2412 JOAP	0 to > 30 Abs/cm
Gasoline	ASTM E2412 JOAP	0 to > 30 Abs/cm
TAN*) (Total Acid Number)	correlation to ASTM D664	0 – 10 mg/g KOH
TBN*) (Total Base Number)	correlation to ASTM D2896	0 – 10 mg KOH/g
Viscosity*) of Engine Oils	Determination of viscosity class Change in viscosity for used engine oils	

*) These properties are calculated based on a database using Multi-Linear Regression (MLR) and Cluster Analysis. Range and repeatability depend on the database used!

Technical Specifications

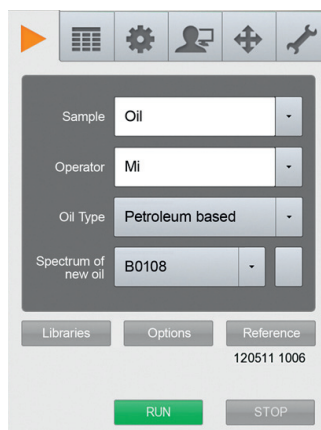
Available test methods	ASTM E2412, ASTM D7412, D7414, D7415, D7418, D7624, JOAP, DIN 51452, DIN 51453 Excellent correlation to ASTM D445, D664, D2270 and D2896
Spectrometer type	MID-FTIR interferometer (patented laser and temperature controlled design) 16384 data points; scanning range: 450 to 7000 cm ⁻¹
Calibration	Factory calibrated with a matrix of international oils
Warm-up time	30 seconds
Measuring time	60 – 120 seconds
Sample introduction	Directly from the sample container by an integrated pump
Cleaning	Automatic rinsing with next sample or solvent
Filter	Integrated 80 µ metal filter
Sample volume	10 ml
Display	7" four-color touch screen
Communication languages	English, German, French, Spanish, Portuguese, Russian, Chinese, etc.
Interfaces	Built-in PC with Ethernet, USB and RS232 interfaces Direct LIMS connectivity and output to printer or PC
Remote control	Remote service capability via Ethernet interface
Result database	≈ 3,000 detailed test reports and spectra stored in the internal memory
Operators	Over 100 operator names storable
Alarm tracking	All messages are stored in the database with the result
Power requirements	Auto switching 85-264 V AC, 47-63 Hz, 70 W (multi-voltage power supply) Field application: 12V/7A DC (vehicle battery)
Dimensions / Weight	22 x 32 x 28 cm (8.7 x 12.6 x 11 in) / 8 kg (17.6 lb)
Accessories	ERASOFT RCS - PC software for multi-instrument networking, result & spectra download, view and analysis of spectra, software update, etc. Carrying case for safe transport and storage DC adaptor for +12 V vehicle battery operation Printer (USB laser printer, parallel DeskJet or dot matrix)

Due to continuing product development, specifications are subject to change.
All eralytics products are manufactured under ISO 9001 regulations and are CE compliant.

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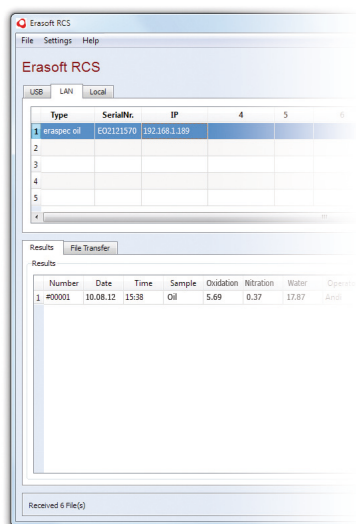
Fast & Easy Operation

All eralytics analyzers use an intuitive menu structure that is easy to navigate. Samples need no prior preparation and measurements are done fully automated.

The results are displayed immediately after the test on the **large and user-friendly color touch screen**. An internal memory holds the measurement results. For convenience, data can be directly **saved to USB flash drives** for further processing or a thorough analysis. The data format is compatible with most PC spreadsheets, such as Microsoft® Excel. Customized print-out designs are available for easy direct printing.

Oil testing in three easy steps with the ERASPEC OIL

- Select/enter the Sample ID and the Operator
- Put the inlet tube into the sample
- Press RUN to start the fully automated measurement



ERASOFT RCS *Remote Control PC Software*

The RCS software by eralytics is the ideal tool for **operating one or more eralytics analyzers via a PC**. As an alternative to LIMS, it allows for convenient data transfer and fast analysis of results. It ideally supports the cutting-edge technology and functionalities built into the eralytics instruments.

- Multi-instrument networking
- Remote control
- Fast & easy data transfer (results, settings, spectra, libraries, etc.)
- Software upgrade
- Backup/restore for configurations and unit parameters
- Convenient analysis of quality-check tracking data

PORTABLE FTIR OIL ANALYSIS IN SECONDS

Compact Stand-Alone Analyzer

All eralytics instruments are compact stand-alone analyzers with a built-in industrial PC. They represent the latest in technology, designed for long-term, maintenance-free operation. Of course, all eralytics analyzers use cutting-edge industry technology and provide universal data transfer options. **Ethernet and USB interfaces allow advanced data management** and connectivity to PCs, modern printers, keyboards, PC-mice, barcode readers, or other external equipment.

Direct LIMS Communication

A direct out-of-the-box connection to LIMS (Laboratory Information Management System) is established with a standard Ethernet cable.

No extra software or PC are necessary.

True Portability

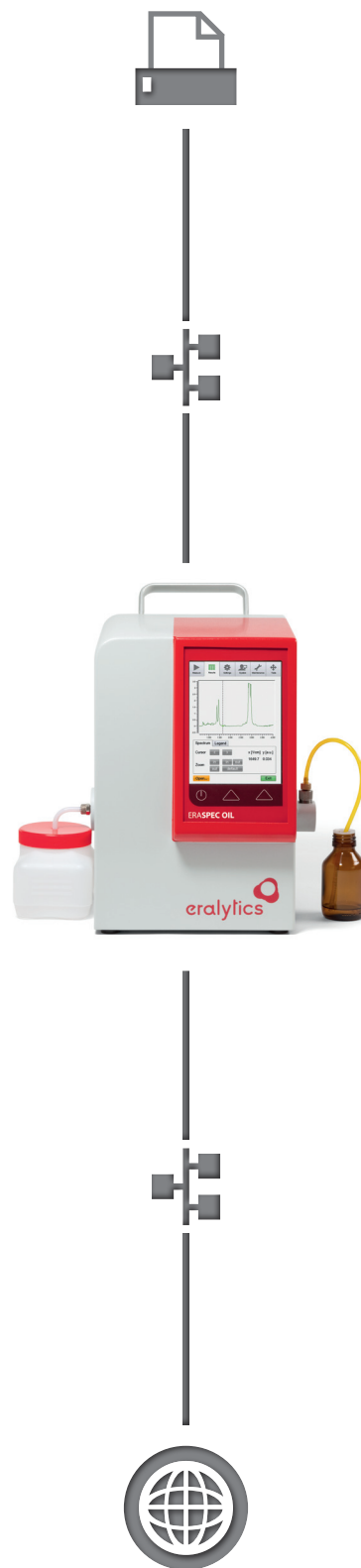
The small footprint of the eralytics instruments makes them the first choice for use in the lab and on-site. Lightweight and built with an integrated carrying handle they are **ideally suited for mobile applications.**

Large Results Memory

Data are stored safely in the large results memory, which holds many thousand records. Six user levels and a state-of-the-art password technology protect your test result data from accidental deletion.

Service and Remote Control over the Internet

At the push of a button, firmware and software updates can be downloaded from the internet. The internet connection also allows to remotely control eralytics analyzers or to perform standard service activities.



ERASPEC OIL

Welcome to a New Era of Petroleum Testing

Upgrade your lab to the 21st century. Leverage the accuracy, speed and comfortable ease of use that are characteristic of eralytics instruments.

ERAVAP

Vapor pressure testing at its best - The vapor pressure analyzer for virtually all types of fuel, from gasoline to LPG, that also handles crude oil, and takes all tests in full compliance with the latest ASTM and EN ISO standards. With its unmatched precision and measuring stability ($r = 0.3 \text{ kPa}$, $R = 0.7 \text{ kPa}$) it is the preferred analyzer in laboratories across the world.

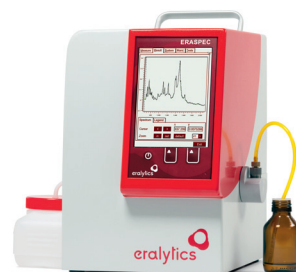


ERAFLASH

The safe side of flashpoint testing - The first and only flashpoint tester on the market to cover the wide temperature range of -25 to 420°C in a single analyzer. Its small sample size and the continuously closed measuring chamber (ASTM D6450 & D7094) guarantee maximum safety and speed at minimum costs.

ERASPEC

Spectral fuel analysis in seconds - The portable mid-FTIR spectrometer that is fully automated and multi-fuel capable. With its patented design, it is perfect for fast gasoline, diesel & jet fuel analysis, delivering precise results for over 40 fuel parameters, like aromatics incl. benzene (ASTM D6277), oxygenates (ASTM D5845), FAME (EN14078), etc. and many fuel properties like Octane, Cetane, Density, Distillation, etc.



ERACHECK

CFC-free oil-in-water testing - The portable analyzer with the patented QCL-IR technology for an extraction with the inexpensive and CFC-free solvent Cyclohexane. With its high speed and precision, it is the instrument of choice to detect even sub-ppm concentrations of total petroleum hydrocarbons (TPH) or total oil & grease (TOG) in water in full compliance with ASTM D7678.



eralytics instruments are available worldwide. An international network of over 50 authorized and well trained dealers is ready to answer your inquiries and to offer local support and service.

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