

eraspec oil

PROFESSIONAL FTIR LUBE OIL ANALYSIS

Standards

ASTM E2412, D2668, D7214, D7412, D7414,
D7415, D7418, D7624, D7844, D8340;
DIN 51452, 51453; IEC 60590, 60666;
JOAP

Excellent correlation to

ASTM D611, D664, D2896, D4739, D6304



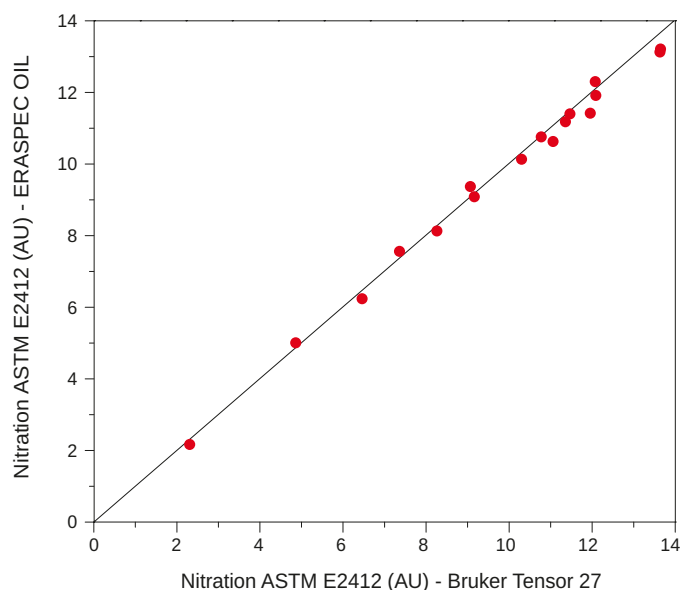
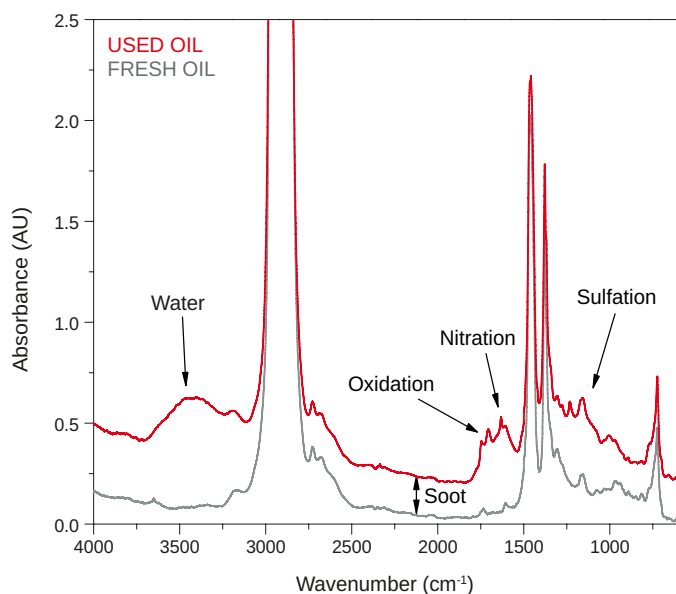
eraspec oil – high speed lube oil testing with lab-grade precision

Oil Condition Monitoring

eraspec oil can determine parameters relevant in lubricant analysis according to latest infrared standards such as ASTM E2412. It monitors degradation products (oxidation, sulfation, nitration), additive depletion (aminic and phenolic antioxidants, antiwear) and contaminants (water, soot, fuel, FAME, coolant liquid). Complex oil parameters such as TAN and TBN or the aniline point are calculated by chemometrical models using a customer-expandable database.

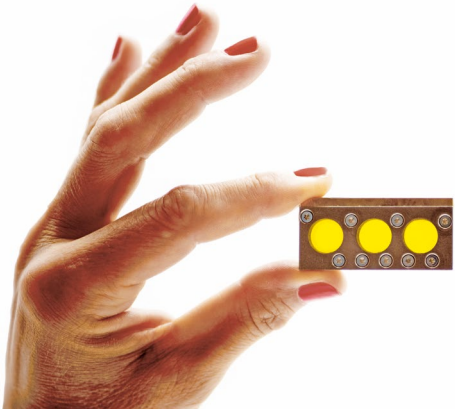
Portable FTIR Analyzer

eraspec oil is a compact, rugged and lightweight FTIR spectrometer that delivers laboratory-grade results in monitoring lubricant conditions. It is the first truly standalone analyzer combining advantages of infrared oil condition monitoring, like fast and reliable results, with high portability. Measurements can be performed directly on-site and the results are available within a few seconds following ASTM, DIN and JOAP methods. The unique triple-cell design enables flexibility and the lowest limits of detection (LOD).



Triple-cell design for lowest LOD

eraspec oil features a groundbreaking triple-cell design that unlocks superior sensitivity. It is equipped with an exclusive 500 µm measurement cell alongside the standard 100 µm cell. The built-in reference cell completes the unique triple-cell. The broad measurement range of the 100 µm cell is seamlessly paired with the enhanced sensitivity of the 500 µm cell to master most demanding low-level analysis like water, ester and antioxidant additives with precision and confidence.



DEGRADATION	STANDARD	UNIT
Oxidation	ASTM E2412, D7414, DIN 51453, JOAP	A/cm
Nitration	ASTM E2412, D7624, DIN 51453, JOAP	A/cm
Sulfation	ASTM E2412, D7415, JOAP	A/cm
ADDITIVES ²	STANDARD	UNIT ³
ZDDP Antiwear	ASTM E2414, D7412, JOAP	A/cm, %, wt%
Phenolic Antioxidants	ASTM D2668, IEC 60666	%, wt%
Aminic Antioxidants		%, wt%
Aromatics	IEC 60590	%
CONTAMINANTS	STANDARD	UNIT ³
Soot	ASTM E2412, D7844, DIN 51452, JOAP	A/cm, wt%
Water	ASTM E2412, JOAP	A/cm, wt%
Ethylene Glycol	ASTM E2412, JOAP	A/cm, wt%
Diesel Fuel	ASTM E2412, JOAP	A/cm, wt%
Gasoline	ASTM E2412, JOAP	A/cm, wt%
FAME		wt%
Polyolester		wt%
Phosphate Ester		wt%

PROPERTIES ¹	CORRELATION TO	UNIT
TAN	ASTM D664	mg KOH g ⁻¹
TBN	ASTM D2896, D4739	mg KOH g ⁻¹
Water	ASTM D6304	ppm
Aniline point	ASTM D611	°C/°F

- 1 ... Requires a customized library. The range and repeatability depend on the used database.
- 2 ... Additive depletion results in % remaining additive are available only for spectral subtraction measurements.
- 3 ... wt% values are determined by a factory calibration.

Standard Model

EO10 eraspec oil

Diesel Fuel Module

EO01-DIE optionally extends the measurement capabilities of eraspec oil to diesel fuel.

- Cetane number & index, evaporation and distillation points
- Aromatics, cetane improver, FAME

Autosampler

Directly attached optional 10-position autosampler

Technical Specifications of **eraspec oil**

Available Test Methods	ASTM E2412, D2668, D7214, D7412, D7414, D7415, D7418, D7624, D7844, D8340; DIN 51452, 51453; IEC 60590, 60666; JOAP
Correlation to	ASTM D611, D664, D2896, D4739, D6304
Spectrometer Type	Patented mid-FTIR interferometer Laser and temperature controlled design
Measurement Cell	100 µm and 500 µm path length sample cell, reference cell Optimized triple-cell design enabling automated reference measurement without solvent
Calibration	Factory calibrated with a matrix of international lubricants Factory calibration for e.g. soot, water, glycol
Spectral Libraries	Easily expandable libraries to adjust measurements to target applications and user-defined parameters
Measurement Principle	Direct trending: calculation of results without the need to record the fresh oil spectrum Spectral subtraction: fresh oil spectrum used as reference for highest performance and lowest LODs
Measuring Time	60–120 seconds depending on the viscosity of the sample; Warm-up time: 30 seconds
Sample Introduction	Directly from sample container via integrated pump
Sample Viscosity	0–2 000 mm ² /s at 20 °C
Sample Volume	10–15 mL
Cleaning	Automatic rinsing with next sample or solvent Integrated filter to prevent blocking of measurement cell
Display	Industry proven multilingual color touchscreen
Interfaces	Built-in PC with Ethernet, USB and RS232 interfaces; Wifi via USB dongle Direct LIMS connectivity and output to printer or PC Optional input by external keyboard, mouse and barcode reader
Remote Control	Remote service capability via Ethernet interface
PC Software	erasoft RCS – remote control Windows® software for multi-instrument remote control, convenient data transfer, viewing spectra and result analysis erasoft OCM Software – supports operators in the management, operation and predictive maintenance of technical equipment with a focus on oil condition monitoring
Result Database	50 000+ detailed test reports and spectra storable in internal memory
Alarm Tracking	All alarm messages stored in the result database together with the results
Power Requirements	Auto-switching 85–264 V AC, 47–63 Hz, max. 150 W (multi-voltage power supply) Field application: 12 V DC (vehicle battery) adapter available
Dimensions / Weight (W x D x H)	29.1 x 32.9 x 34.8 cm (11.5 x 12.9 x 13.7 in) / 10.6 kg (23.4 lb)

Due to continuing product development, specifications are subject to change.

All **eralytics** products are manufactured under ISO 9001 regulations and are CE, ROHS and UL/CSA compliant. www.eralytics.com/eraspec-oil



eralytics instruments are available worldwide.
An international network of over 50 authorized and well-trained distributors is ready to answer your inquiries and to offer local support and service.
www.eralytics.com/sales

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