OIL & GREASE

GRABNER INSTRUMENTS

MINISCAN IR LOG

LOGical Solution for Condition Monitoring of Lubricants, Oils and Greases

The MINISCAN IR LOG is a highly versatile and extremely fast FTIR analyzer, designed for on-site condition monitoring of oils and greases. It is also capable of measuring low or high levels of water in oil accurately and quickly, without using hazardous reagents.

KEY BENEFITS

- **Cost Saving**
  A condition monitoring apparatus is a hard-dollar saving investment, if the analyzer allows to check lube oil and grease quality directly on-site. It enables timely and accurate response to oil degradation. If oil and grease condition is not monitored continuously, additional costs are inevitable: the failure to predict oil degradation leads to engine-repair expenditures that can easily sum up to several hundred thousand dollars per year. An equal amount of costs can accumulate, if expensive oils and greases are changed too early.

- **Easy and Fast Condition Monitoring**
  The MINISCAN IR LOG FTIR analyzer requires only one drop of sample to accurately measure numerous performance indicators of oils and greases. Depletion of anti-wear oxidation compounds and additives, as well as the level of sulfates, nitration, soot or water is measured and pass/fail information is displayed within minutes. Preconfigured methods are easily selectable for measuring different types of lubricating oils. A measurement can be done by untrained personnel. The instrument is also able to determine low or high levels of water in oil, offering a perfect alternative to Karl Fischer titration. The FTIR analyzer reduces measurement time to minutes, no hazardous chemicals are required for testing and results are analytically as accurate or better than KF titration.

- **Unique Dial-Path Setup**
  The MINISCAN IR LOG is featuring a unique dial-path setup, which allows easy switching between sample cells. Three different path lengths are preinstalled: a 50 micron sample cell for quick screening, a 100 micron cell for ASTM and EN compliant measurements and a 1000 micron cell which allows the detection of very low levels of additives or contaminants in oil. This setup guarantees that the instrument conforms to and exceeds precision requirements specified in various ASTM, EN or IP methods.

- **Compact and Robust for Field Testing**
  Because the sample is directly applied to the measuring cell rather than flowing through the cell, instrument performance is not limited by the viscosity of a sample or by particle contamination, which could harm the measuring cell. Cell rinsing is not required, the cell can be cleaned with a simple tissue. No chemicals are needed to perform reference measurements. Versatility, ease of use and the possibility to measure oil and grease directly on-site and in real time make the MINISCAN IR LOG a perfect solution for monitoring lubrication of engines, generators or turbines and for measuring degradation of hydraulic and transformer oils.

AMETEK®
OIL & GAS

OILS & GREASES

- Turbine Oils
- Hydraulic Oils
- Gear Oils
- Engine & Machine Oils
- Transformer Oils
- Compressor Oils
- Marine and Crude Oils
- Greases and Bearing Oils

ASTM METHODS

- ASTM E2412 and ASTM D7418
- Phosphate (ASTM D7412)
- Oxidation (ASTM D7414)
- Sulfate (ASTM D7415)
- Nitration (ASTM D7624)
- Antioxidants (ASTM D2668)
- TBN (ASTM D2896)
- TAN (ASTM D664)

COMPONENTS & CONTAMINANTS

- Antiwear: ZDDP, Phosphates, Silicates
- Biproducts: Phosphates, Sulfates
- Aminic Antioxidants: Napthalamine, Diphenyl Amine
- Phenolic Antioxidants: Hindered Phenol
- Extreme Pressure: Phenates, Sulfurized Isobutylene, Aromatics, Sulfoxides
- Antifoam: Silicones, Siloxanes
- Dispersant: Polyisobutylene Succinimide
- Oxidation: Ketone, Esters, Carboxylic Acids
- Ester Breakdown, Phosphate Ester, Polyolester, WD 40 Ester (Dialkylated Sulfosuccinate)
- Sulfate, Sulfonate: Organic and inorganic sulfoxides, corrosive and acidic
- Nitration: Organic nitrates
- Water, stabilized water
- Carbonate
- Glycol
- Antifreeze
- Contamination with Gasoline, Diesel, FAME
- Soot
- Other contaminants

FEATURES

- FTIR analyzer designed for field use
- Internal battery (up to 4h operation)
- Portable and robust housing
- Dedicated sample interface
- Maintenance free transmission setup
- Unique dial-path setup (3 cells)
- Easy to clean, no rinsing required
- Less than 1 mL sample per measurement
- No limit for viscosity or particle contamination
- Easy to set up, easy to use
- Results within minutes
- Requires no reference measurement w/ chemicals

TECHNICAL DETAILS

Interferometer geometry	High-throughput Michelson interferometer with fixed and moving flat mirrors
Standard beamsplitter	Zinc selenide
Range / Max. spectral resolution	4000-650 cm^{-1} / 4 cm^{-1}
Detector	1.3 mm diameter, thermoelectrically cooled dTGS
Laser	Low-powered solid state
Cell windows	Selectable path length: 50, 100 or 1000 µm
Power Supply	100-240 V AC, 3A, 50/60 Hz Battery operation: 6600 mAh, 12.6V/3.5 A DC
Environmental conditions	Operating temperature 0 to 50°C (32 to 122°F), Humidity up 95% r.h., non condensing
Dimensions / Weight	WxHxD: 216 x 292 x 191 mm (8 x 11.5 x 7.5 in) / 6.8 kg (15 lbs)

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