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XRF OIL ANALYZER

XRF Oil Analyzer – ToronXRF™ Oil 300

An XRF Oil Analyzer gives fast elemental screening for oils, fuels, greases, and other petroleum-related materials without wet chemistry. X-Ray Fluorescence Spectrometer – ToronXRF™ Oil 300 is based on energy-dispersive X-ray fluorescence and is positioned for sulfur analysis, wear metal screening, additive monitoring, and pollutant detection in lubricating oils, grease, gasoline, jet fuel, kerosene, hydraulic oil, crude oil, residue, wax oil, alcohol gasoline, and biodiesel. The instrument can analyze elements from magnesium to uranium, with a content range of 2 ppm to 99.99% and a test time of 30 to 300 seconds.

ToronXRF™ Oil 300 is a compact XRF Spectrometer designed for fast qualitative and quantitative elemental analysis in field and industrial maintenance workflows. This intelligent oil analyzer can be used for rail transit, ships, and other transportation equipment where users need quick screening of wear metals, additive depletion, sulfur, heavy metals, and contaminants in lubricants and related petroleum products. ToronXRF™ Oil 300 also can be operated with one-click operation, making the system suitable for routine use without requiring an advanced spectroscopy background.

This ToronXRF™ Oil 300 is broader than a sulfur-only analyzer. Along with sulfur testing, it is presented for screening worn metals, additive elements, and pollutants in lubricating oil and grease, plus multiple liquid fuel matrices. That makes it suitable for sites that want one XRF Oil Analyzer to support both fuel quality work and oil condition monitoring.

APPLICATIONS

XRF Oil Analyzer – ToronXRF™ Oil 300 Application

- Sulfur analysis in fuels and petroleum products: ToronXRF™ Oil 300 is suited to sulfur screening in gasoline, jet fuel, kerosene, biodiesel, crude oil, residue, and related petroleum products.
- Wear metal and contaminant monitoring in lubricating oils and greases: The analyzer for detecting worn metals, additive consumption, and pollutants in lubricating oils and greases used in running and transmission parts. This

supports maintenance programs where abnormal metal trends can indicate component wear, contamination, or lubricant distress.

- Railway, marine, and transportation equipment condition monitoring: In these environments, fast elemental screening can support oil condition monitoring directly near the asset, which helps reduce the delay between sampling and maintenance decisions. The analyzer’s one-click workflow and portable benchtop size are positioned for this type of practical on-site use.
- Multi-matrix screening for solids, powders, and liquids: ToronXRF™ Oil 300 is also presented for solid, powder, and liquid samples, which broadens its use beyond routine lubricant testing. This makes it useful for mixed industrial labs that handle fuels, grease, residues, and other petroleum-related materials and want one X-Ray Fluorescence Spectrometer for rapid elemental checks.

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ToronXRF™ Oil 300
XRF Oil Analyzer

FEATURES

XRF Oil Analyzer – ToronXRF™ Oil 300 Key Features

- Broad elemental coverage from magnesium to uranium, supporting both trace and high-level elemental analysis.
- Energy-dispersive XRF method for fast qualitative and quantitative screening of oils, fuels, grease, solids, powders, and liquids.
- SDD / Fast SDD detector with minimum resolution of 130 eV / 125 eV for improved peak discrimination.
- Content range from 2 ppm to 99.99%, allowing the instrument to cover trace contamination and high-concentration elemental analysis in one platform.
- Sulfur detection capability in fuels with limits of 10 ppm / 2 ppm, depending on the application setup.
- Fast test cycle from 30 to 300 seconds, which supports routine screening and quick maintenance decisions.
- One-click testing workflow with no need to manually select a specific test mode, which simplifies operator use.
- Automatic sampling and quick multi-sample completion, as a way to support faster oil-condition decisions.
- Direct grease testing without heating or dissolving, which reduces sample prep and avoids sample destruction.
- No odor or harmful gas release during the stated test workflow, which supports easier use outside of a fume hood for the listed application style.
- Configured element package for railway and transport lubrication applications, including Fe, Cu, Si, Zn, Ca, S, and Cl in gearbox oil, diesel engine oil, hydraulic oil, axle-box bearing grease, and traction motor grease.
- Low consumable cost and low sample consumption, which helps reduce routine operating cost.

TECHNICAL SPECIFICATIONS

XRF Oil Analyzer – ToronXRF™ Oil 300 Technical Specification

Specification	XRF Oil Analyzer – ToronXRF™ Oil 300

Measurement method	Energy-dispersive X-ray fluorescence analysis method
Element range	Magnesium (Mg) to Uranium (U)
Test objects	Solid, powder, liquid
Content range	2 ppm to 99.99%
Detector	SDD / Fast SDD detector
Detector resolution	130 eV / 125 eV minimum resolution
Sulfur detection limit in fuel	10 ppm / 2 ppm
Detection time	30 to 300 seconds
Operation	One-click testing, no specific mode selection required
Working temperature	-10°C to +50°C
Working humidity	< 90%
Dimensions	400 × 360 × 300 mm
Weight	About 25 kg

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