



Portable, Benchtop Oil Condition Monitoring:

The **FluidInspectIR® BenchPro + Elemental** is a two-system solution delivering both **multi-parameter oil condition monitoring** and **rapid quantitative elemental analysis** through a single unified software platform.

Using an integrated multi-sensor approach, **BenchPro + elemental** provides comprehensive analysis of lubricants and fluids, enabling users to identify fluid degradation, contamination, elemental analysis and wear-related conditions without the need for laboratory-based testing.

Multi-Parameter Fluid Analysis

BenchPro provides fast measurement and classification of key fluid condition parameters, including:

- ☐ **Chemical degradation and additive depletion** — assessment of lubricant condition and changes in chemical properties.
- ☐ **Kinematic viscosity** — measurement output of **KV40 & KV100**.
- ☐ **Particulate contamination** — particle concentration and cleanliness classification in accordance with **ISO 4406**.
- ☐ **24 elemental Analysis** (RDE-OES) stand-alone unit (ASTM D6595 and ASTM D6728)

Designed for On-Site Operation

- ☐ BenchPro + elemental systems are mains powered and can be operated through an integrated **touchscreen GUI or connected laptop**. It can also connect directly to a **phone or tablet without requiring installation of proprietary software**, simplifying deployment and access to results.
- ☐ For the Portable Case Unit, an integrated automatic pumping system draws fluid directly from a sample bottle, reducing manual handling and providing a consistent sample introduction process.
- ☐ System has default Oil Library of 15 measurement files for common oils and fluids across most applications (gears, hydraulics, engines, etc). Larger library available on request.
- ☐ Full elemental (24x elements) analysis from benchtop RDE-OES unit.

Data Analysis & Trending

Analysis results are displayed directly on screen for immediate assessment. For more + elemental data management and condition monitoring, **DataInspectIR®** software provides additional capabilities for Data charting and plotting Historical trend analysis



Portable BenchPro Unit



Elemental Analyser Unit

Technical Specifications

- Weight - Combined weight about 40kg
- Dimensions (W×L×D) - 40cm x 40cm x 30cm for OCM and 40cm x 40cm x 40cm for Elemental
- Power Supply - 220V for both systems
- Analysis Time - Less than 10min per sample
- Sample Volume - Min 100ml
- Connectivity - MODBUS & Cloud connection available

Portable OCM Case: - Typical Application Measurement parameters

	Gas Engine (Landfill or LNG)	Turbomachinery	Hydraulic	Gears and Rollers	Marine VLSFO / Diesel Engine	Diesel Engine	Marine Stern Tube / Thruster EAL
Oxidation – abs/cm	x	x	x	x	x	x	x
Nitration – abs/cm	x					x	
Sulphation – abs/cm	x				x	x	
ipH	x						
Water (ppm)	x	x	x	x	x	x	x
TBN – mgKOH/g	x				x	x	
TAN – mgKOH/g	x	x	x	x			x
KV100C – cSt (or mm/s2)	x				x	x	
KV40C – cSt (or mm/s2)		x	x	x			x
Fuel Dilution					x	x	
Amine AO – %		x					
Phenol AO – %		x					
Soot (wt%)					x	x	
ISO 4406 Classification		x	x	x			x

Parameter Equivalency +/- 5% to standard lab measurements

Elemental Analyser Measurement Specifications

Element	Range (ppm)	Typical Application
Fe (Iron)	0–1000	Engine cylinder / bearing wear
Cu (Copper)	0–1000	Bearing, bushing, cooler wear
Al (Aluminium)	0–1000	Piston, pump housing wear
Cr (Chromium)	0–1000	Piston ring, chrome lining wear
Pb (Lead)	0–1000	Bearing overlay / fuel contamination
Si (Silicon)	0–1000	Dirt / silica ingestion, antifoam
B (Boron)	0–1000	Coolant contamination indicator
Na (Sodium)	0–1000	Coolant / seawater contamination
Mo (Molybdenum)	0–1000	Anti-wear / friction modifier
Zn (Zinc)	0–6000	ZDDP anti-wear / antioxidant
Mg (Magnesium)	0–6000	Detergent additive (engine oils)
P (Phosphorus)	0–6000	Anti-wear additive (ZDDP)
Ca (Calcium)	0–6000	Detergent / dispersant additive
+ 11 more	Various	Ag, Ni, Ti, V, Cd, Sn, Mn, K, Li, Sb, Ba

24 elements simultaneously in ≤30 seconds

Custom upper ranges available on request.

Compliant with ASTM D6595 and ASTM D6728.

