

Micro-ESR™ Oil Analyzer



Active Spectrum's on-line Micro-ESR™ sensor is the world's first industrial process monitoring instrument that provides real-time, embedded, nondestructive measurement of free radicals and transition metals.

Active Spectrum's on-line Micro-ESR sensor uses the principle of Electron Spin Resonance (ESR/EPR) spectroscopy to measure the composition and concentration of free radicals in any fluid or solid sample.

APPLICATIONS

- Asphaltene and Vanadium in Crude Oil
- Thermal Breakdown of Lubricants
- Corrosion: iron oxides
- Soot and carbon in exhaust gases and oil
- Chemical additive concentration
- Transition metals: Mn, V, Fe, Cr, Co, Cu and others
- Combustion, oxidation, polymerization and coking processes
- Catalyst coking

Magnetic resonance spectroscopy is unaffected by sample density or opacity. This makes Micro-ESR ideal for analyzing emulsions, opaque liquids and non-metallic solids that cannot be analyzed in other ways.



SPECIFICATIONS

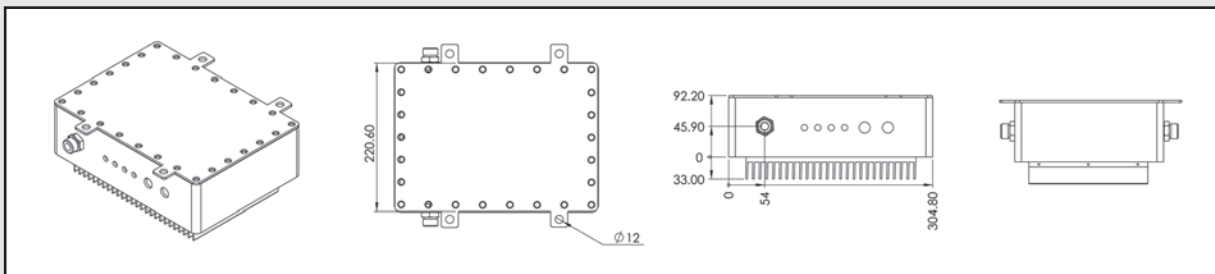
Active Spectrum's Micro-ESR™ Oil Analyzer uses a microwave resonance signal to measure free radicals in crude oil, lubricants, catalysts and petrochemicals.

Parameter	X-band (9.5 GHz)
Sensitivity	0.1 µM
Minimum sample volume	100 µL
Magnet Assembly	3480 ± 150 Gauss
Magnetic Field Uniformity	0.25 Gauss
Supply Voltage	15 VDC / 6.7A (120V/240V Wall Adapter Included)
Data Interfaces	Ethernet and USB
Temperature Controller	Included
Dimensions	12"x8"x5"H
Internal Bore Diameter	ø4.0 mm
Maximum Pressure	100 psi
Fluid Fittings	¼" Swagelok
Maximum Oil Inlet Temperature	160°C
Operating Temperature Range	-30°C to +55°C
Supply Voltage	12-32 VDC / 2.5A

Application	Notes
Crude Oil Analysis- Vanadium and Asphaltene	Detection limits: 1 ppm (Vanadium) 0.05% (Asphaltene)
Online process monitoring – additives and impurities	Hazardous location enclosures and PLC interface available.
Catalyst coking	Measure coke, Vanadium Pentoxide, other contaminants
Marine Fuel Dilution of Lubricants	Measure Residual Fuel Dilution (RFD)
Soot in Lubricants	Correlates to ASTM D7844
Oxidation in Lubricants and Hydraulic Oils	Correlates to ASTM D7414
Thermal Coking of Gearbox and Turbine Oils	Real-time measurement.

Please contact us for custom requirements.

OUTLINE DRAWING



Perspective

Top

Front

Side

AVAILABILITY

Please contact our sales department at +1 650-212-2625 or sales@activespectrum.com to discuss your application in more detail.



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