

## FluidScan

### Handheld Lubricant Condition Monitor

#### Features

- ▶ Small, handheld rugged mid-infrared spectrometer
- ▶ Sensitive, comparable to high-end laboratory FTIR spectrometers
- ▶ On-site analysis
- ▶ Patented optical waveguide technology
- ▶ Reliable performance – self-calibrating reference
- ▶ Under 1 minute analysis time
- ▶ Measures key oil condition parameters including:
  - ▶ Total Base Number (TBN)
  - ▶ Total Acid Number (TAN)
  - ▶ Oxidation
  - ▶ Nitration
  - ▶ Sulfation
  - ▶ Incorrect lubricant
  - ▶ Additive depletion
  - ▶ Soot
  - ▶ Glycol/Antifreeze
  - ▶ Water
- ▶ Stores over 5,000 records



*"A portable fast, accurate, and cost effective instrument for the on-site determination of lubricant degradation & contamination."*

The FluidScan is a handheld condition based maintenance system that protects machinery by determining when a lubricant needs to be changed due to excessive contamination or degradation. Its detection capabilities can determine lubrication contamination, degradation and cross-contamination at the point of use by measuring key oil condition parameters in both synthetic and petroleum-based lubricants and fluids. The FluidScan is available with a standard sampling reservoir or disposable IR sampling card.

The FluidScan analyzes lubricants and fluids using infrared spectroscopy, a technique that has found wide acceptance as a primary test for contamination and degradation. It performs the analyses with similar accuracy to laboratory instruments, but does so on-site in a handheld version. The FluidScan thus reports and stores information on lubricant condition at the point of use.

#### Application:

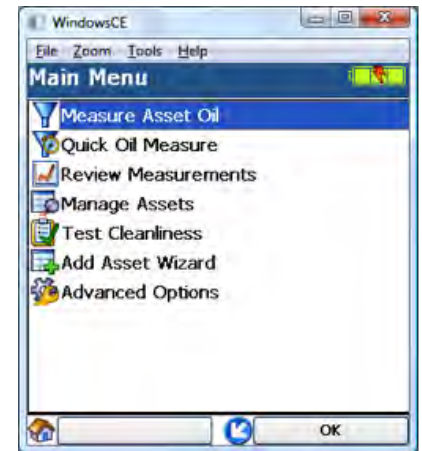
The FluidScan Lubricant Condition Monitor is applicable to any large mechanical system where unexpected down time is unacceptable. Ideal applications include:

• Engines	• Hydraulics
• Gas Turbines	• Steam Turbines
• Wind Turbines	• Gears
• Transmissions	• Compressors
• Biodiesel QC Checking	

## FluidScan Theory of Operation

The FluidScan Lubricant Condition Monitor is a complete self-contained handheld analyzer that delivers fluid condition assessment based on ASTM Standard Practice E 2412. It uses a flip top oil cell for analysis. The fluid sample is placed between an electronically modulated broadband source and a miniature mid-infrared spectrometer. The spectrometer consists of a fixed cylindrical grating bonded to an optical waveguide to obtain high signal throughput and aberration-free diffraction. A continuous infrared spectrum is collected using an array detector attached to the waveguide. The FluidScan operates in two frequency ranges, 930-1780 cm-1 and 2580-3700 cm-1.

Discrete infrared absorption bands, established by the Joint Oil Analysis Program Technical Support Center (JOAP-TSC) for used oil analysis, are continuously monitored with on-board microprocessor based readout electronics. Analytical data for lubricant and fluid samples are displayed on a color screen and can be stored in memory for trending or to be downloaded to a central database. The included Oil Monitoring Manager software provides data logging, trending, warnings and alarm condition alerts.



FluidScan Home Screen

## Benefits

The FluidScan provides immediate on-site analysis of lubricant properties, accurately warning when it is time to change the lubricant due to contamination or degradation. The primary benefits of real-time, on-site analysis include:

- Extended oil change intervals.
- No delay in waiting for laboratory analysis.
- Reduced operational and maintenance costs.
- Reduction of unscheduled maintenance outages.
- Prevention of catastrophic failures.
- Reduction of hazardous waste.

## Specifications:

Power:	3 AA Rechargeable Batteries
Size:	17 x 14 x 9 cm (6.5 x 5.5x 3.5 in.)
Weight:	1.6 Kg (3.5 lbs)
Operating System:	Windows CE
Display:	320 x 320 Transflective Color Display
Connectivity:	USB Host (accepts keyboard and mouse) USB Client (for data transfer) RS-232 Ethernet
Memory:	64 MB RAM 32 MB Flash
Controls	4-button Keypad (Up, Down, Enter, Home)
Storage:	5,000 Assets and Analyses
Operating Temperature:	-10°C to 50°C (14°F to 122°F)
Operating Humidity:	0 to 100%, Non-condensing
Ambient Altitude:	5,000 meters (16,400 feet)
Battery Life:	6 - 8 Hours

*Spectro Incorporated is the only company dedicated exclusively to provide instrumentation, software and applications support for machine condition monitoring through oil analysis.*

*Contact us for your instrumentation needs and complete turnkey systems for oil analysis.*

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