MicroLab Information

PRODUCT INFORMATION

Part Numbers	MicroLab 30: 800-00033 (115VAC) 800-00034 (220VAC) MicroLab 40: 800-00035 (115VAC) 800-00036 (220VAC)
Accessories (Included)	UPS backup power supply/surge protector
Applications	OnRoad, OffRoad/Mining, Marine, and Industrial Equipment
Operating Mode	Single or multi-parameter tests

OUTPUT

Elemental analysis (ppm)	Basic Metals – MicroLab 30 and 40: Aluminum(Al), Chromium(Cr), Copper(Cu), Iron(Fe), Lead(Pb), Molybdenum(Mo), Potassium(K), Silicon(Si), Sodium(Na), Tin(Sn)
	Extended Metals – MicroLab 30 (option), MicroLab 40: Barium(Ba), Boron(B), Calcium(Ca), Magnesium(Mg), Manganese(Mn), Nickel(Ni), Phosphorous(P), Titanium(Ti), Vanadium(V), Zinc(Zn)
Fluid Chemistry	Soot (% by weight), Water (% by weight), Glycol (% by weight), Oxidation (Abs./cm), Nitration (Abs./cm), TBN (mg KOH/g)
Viscosity	Kinematic Viscosity (up to 680 cSt) at 40C and 100C
Particle Count (MicroLab 40)	Particle counts > 4um [per mL] (7 particle size ranges, plus ISO Code)
Methodology	Per ASTM D7417
Repeatability	Per ASTM D7417

OPERATIONAL SPECIFICATIONS

Sample Volume Required	1-5 oz. depending on analyses performed
Sample Time Required	5-15 minutes, depending on analyses selected
Oil range specs	Up to 680 cSt at 40C Particle counter limited to 320cSt at 40C
Calibration	Standardization (analyzer metals detection) dependent on application – Typically required every 50 samples (software-changeable)
Ambient Operating Temperature	0 to 25C
Operational Humidity	0-85% non-condensing
Ambient Altitude	up to 2400 meters

USER INTERFACE SPECIFICATIONS

Computer OS	Windows 7 32-bit; SQL Server database
Display	15" (diag.) touchscreen
Data Entry	touchscreen / keyboard / USB port for computer mouse
Data Storage	(2) 250 GB hard drives (one as unconnected spare drive); 4GB USB drive for database backups
Data Transfer	FTP (for online reporting)
Security	AVG 2015
Communication	Network port 25 (Email of reports) ; Port 21 (online reporting); Remote access software (LogMeIn) for support/training

POWER REQUIREMENTS

Power	115/230V 50/60 Hz (single-phase) - Spec. by Part Number (top)
Power Consumption	1100 Watts continuous; 1700 Watts instantaneous max.

MECHANICAL SPECIFICATIONS

Dimensions	29" (L) x 30" (W) x 26" (H) (74cm x 76cm x 66cm)
Weight	130 lbs. (59 kg)

CONSUMABLES

29002-05-ABS	5 oz. ABS high-temp sample bottle (200)
29033-00	Cleaning Swabs (100)
29823-00	Sample Straws (Long) – 350 per pk.
29824-00	Kimwipes (280)
29088-01	Check Flush fluid (1 Gal)
29087-01	Test Standard fluid (32 oz.)
29089-01	Low-Viscosity Standard fluid (32 oz.)
29090-01	High-Viscosity Standard fluid (32 oz.)
22194-00	Filter Screen (1/2", #60 x 60 mesh)
23042-00	Upper Electrode
23076-00	Lower Electrode

COMPLIANCE

CE Mark / RoHS

To keep your MicroLab running in top condition, it is important to use the recommended cleaning and standardization fluids.

CheckFlush is specially designed to clean the lines in the MicroLab between samples. This prevents cross-over contamination and keeps your instrument running its best.

The standardization fluids are designed for calibration of the instrument. Your maintenance practices should follow the prescribed standardization process to ensure your results are accurate.

Spectro Scientific
Confidence in knowing

MicroLab

ALL-IN-ONE, AUTOMATED LUBRICANT ANALYSIS SYSTEM

Comprehensive, on-location oil testing

MicroLab® Applications

The MicroLab is used in virtually every industry that operates equipment powered by engines including:

- Automotive
- Trucking
- Energy
- Mining
- Heavy Equipment
- Government (Military, Municipal)

The two MicroLab models are:

MicroLab 30 – Provides automated comprehensive diagnostic analysis of engine, generator, gear box, power steering, and transmission fluids.

MicroLab 40 – Provides automated comprehensive diagnostic analysis of engine, generator, gear box, hydraulics, power steering, and transmission fluids. Recommended if particle count is needed for hydraulics.

The MicroLab delivers comprehensive on-site oil analysis, providing immediate actionable results, saving time and reducing costs.

Reduce maintenance costs

- Extend component lifetime through preventative maintenance
- Proactively schedule maintenance based on predictive analysis
- Extend oil drain intervals based on oil condition rather than time, allowing savings in labor, oil and waste disposal

Increase equipment availability

- Early identification and trending of component wear and failure modes for preventative maintenance before catastrophic failure occurs
- Analyzer provides a complete analysis of the oil and equipment health
- LubeTrak® software makes it easy to track and trend the key oil parameters necessary for optimizing asset health and utilization

Fast and easy to use

- Comprehensive oil analysis in 15 minutes instead of waiting days or weeks for outside lab results
- Minimal disruption to workflow with fully automated measurement, diagnostics and cleaning
- Can be operated by maintenance or support staff, no chemist required
- Easy to interpret results with expert system; recommended maintenance actions and color coded alarm limits

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MicroLab

FULLY AUTOMATED OIL ANALYSIS

The MicroLab combines automation and artificial intelligence in a simplified oil analysis tool. The user inputs sample information on the touchscreen and the automated fluidics system moves the sample through the analysis and self-cleaning processes. The embedded expert system then provides a complete data analysis with diagnostics and recommendations.

CHEMISTRY

The MicroLab Infrared Spectrometer measures six key parameters which indicate potential oil degradation and contamination.

Both the MicroLab 30 and 40 provide:
- Oil degradation: oxidation, nitration, total base number
- Oil contamination: soot, water, glycol

VISCOSITY

The MicroLab Dual Temperature Viscometer (DTV) provides kinematic viscosity analysis which can help identify potential oil degradation or contamination.

Both the MicroLab 30 and 40 provide:
- Kinematic viscosity at 40C and 100C
- Viscosity Index (VI)

ELEMENTAL ANALYSIS

The MicroLab Optical Emission Spectrometer quantifies wear metals cause from mechanical components, as well as other elements from oil additives or sources of contamination.

- MicroLab 40 analyzes 20 elements including wear, contamination and additives
- MicroLab 30 analyzes 10 elements (wear and contamination) and is upgradable to include all 20 elements

PARTICLE COUNT

The MicroLab 40 model is equipped with a particle counter to measure particle contamination which is crucial for maintaining hydraulic systems, compressors and turbines.

The MicroLab 40 measures:
- Gross particle count
- ISO particle size

Expert System & Reports

The MicroLab has an embedded expert system which translates all of the analytical data into maintenance actions specific to your equipment. The artificial intelligence of the system is built from over 20 years of industry knowledge and more than 10,000 rules statements to generate the diagnostic statements that are specific to each application, the type of equipment and the type of oil.

- Saves time – compiles and analyzes all test data
- Takes the guess work out of interpreting results – provides suggested maintenance actions
- Saves money – no need to hire an analytical resource
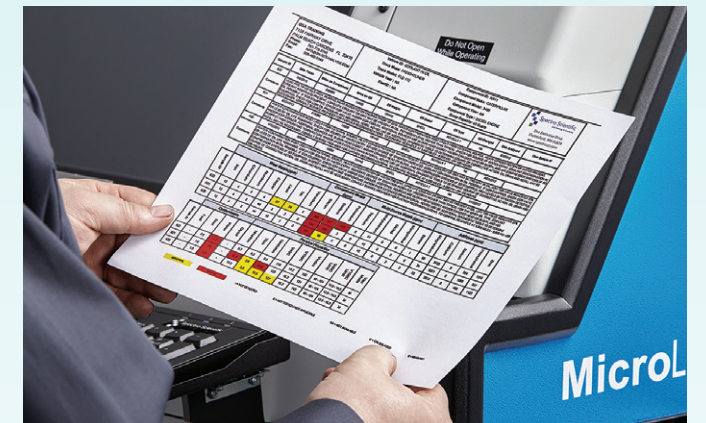
Comprehensive MicroLab report includes color-coded alarm limits, diagnostic statements and trending history.

LubeTrak – Data Management

Online subscription service to track and trend equipment sample results and identify maintenance issues across all sites and assets. All maintenance and management personnel can access fleet and equipment information from any web device around the world.

- Synchronized asset oil analysis history across multiple locations
  - Optimized for assets moving from one location to another
- Centralized asset condition based on oil analysis results
  - Corporate asset dashboard
  - Multiple asset condition displays with one display per site
- Streamline communication between headquarters and remote site operation, maximize the benefit of oil analysis for the company.