The LaserNet 200 Series is the world’s best particle counter for lubrication oil testing.

In commercial laboratories, power generation plants and industrial facilities, the LaserNet 2000 Series offers unrivaled functionality for contamination control and condition-based maintenance programs.

**FEATURES INCLUDE:**
- Particle count, size distribution and codes (ISO 4406, NAS 1638, NAVAIR 01-1A-17, SAE AS 4059, GOST, ASTM D6786, HAL and user-defined bins).
- Differentiation of contaminants (silica and fibers from machine wear metal)
- Classification of wear particles, image storage and reporting of particle count and size for Cutting, Sliding, Fatigue, Fibers and Non-metallics wear types
- Total ferrous content measurement in the sample with ferrous particle count and size distribution

Multiple configurations and options cover the needs of commercial laboratories and industrial plants for contamination control and predictive maintenance.

**OPTIONS INCLUDE:**
- **Ferrous Monitor to measure ferrous content** – enables measurement of both ferrous content and total particle count on the same sample, eliminating the need to measure ferrous content on another instrument
- **Classification of wear particle shape** – directly images wear particle silhouettes and counts and classifies wear particles over 20 microns
- **Autosampler for high throughput sample processing** – provides automated, unattended processing of up to 24 used oil or hydraulic fluid samples
The LaserNet 200 Series provides particle counts and codes, large wear particle classification and ferrous wear monitoring. Options include an autosampler for high throughput sample processing as well as configurations without the ferrous monitor and wear classification.

Wear images are stored and analyzed directly on the LaserNet 200 software. They can be sorted by wear class. OilView™ software also reports on particle count and size distribution by wear category.

Establishing alarm limits and condemnation levels for large machinery wear particles is often challenging. Unlike parameters such as ISO code, water, elemental concentration and TAN, there are no pre-defined limits set by the equipment supplier. In each piece of equipment, machinery wear particles of different sizes reach their own dynamic equilibrium condition. The LaserNet 200 software calculates recommended wear particle limits for categories of cutting wear, severe sliding wear and fatigue wear by analyzing a series of six or more samples.
Sample preparation

Sample preparation is efficient with the LaserNet 200 Series – viscosities up to 320cSt can be processed without dilution due to the wide dynamic range. And, unlike conventional light blockage particle counters, there are no flow control valve adjustments needed when testing different sample viscosities.

With an intuitive, configurable graphical user interface and no calibration required, the LaserNet 200 Series is fast, accurate and easy to use.

Data Management

The LaserNet 200 Series has a data export capability to laboratory LIMS systems as well as comma or tab delimited text file formats. The wear images can be exported as .jpeg or .bmp files.

Spectro Scientific’s MiniLab Series software, when integrated with the OilView LIMS module, can transfer data to the AMS Machinery Health Manager LIMS module.

SpectroTrack is a browser-based Laboratory Information Management System (LIMS). It provides a single view of a sample lifecycle from scheduling the sample to report generation and includes a customizable asset management database for trend analysis.

ASP Autosampler

The ASP autosampler is a low cost solution for automatic and unattended processing of a batch of up to 24 samples. The ASP may be added to existing LaserNet 200 installations with minimal setup. Features include:

- Automatic reversing stirrer
- Two-stage wash system using focused spray jets
- Quick disconnect/shutoff for solvent supply and drainline
## LaserNet 200 Series Ordering Information

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SpectroLNF-Q210</td>
<td>LaserNet 210 particle counter. Requires SA1023 or SA1024 accessory kit and a PC.</td>
</tr>
<tr>
<td>SpectroLNF-Q220</td>
<td>LaserNet 220 particle counter with wear particle shape classifier. Requires SA1023 or SA1024 accessory kit and a PC.</td>
</tr>
<tr>
<td>SpectroLNF-Q230</td>
<td>LaserNet 230 particle counter, wear particle classifier, and ferrous monitor. Requires SA1025 or SA1026 accessory kit and a PC.</td>
</tr>
<tr>
<td>SA1023</td>
<td>LaserNet 210/220 standard accessories with ultrasonic cleaner, 115V</td>
</tr>
<tr>
<td>SA1024</td>
<td>LaserNet 210/220 standard accessories with ultrasonic cleaner, 220V</td>
</tr>
<tr>
<td>SA1025</td>
<td>LaserNet 230 standard accessories with ultrasonic cleaner, 115V</td>
</tr>
<tr>
<td>SA1026</td>
<td>LaserNet 230 standard accessories with ultrasonic cleaner, 220V</td>
</tr>
</tbody>
</table>

## ACCESSORIES AND CONSUMABLES

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LNF-909</td>
<td>LaserNet 200 Series routine maintenance kit</td>
</tr>
<tr>
<td>LNF-910</td>
<td>LaserNet 200 Series with Skydrol configuration routine maintenance kit</td>
</tr>
<tr>
<td>LNF-509</td>
<td>Calibration check fluid 2806, 400 ml</td>
</tr>
<tr>
<td>LNF-545</td>
<td>Ferrous validation standard, 400 ml</td>
</tr>
<tr>
<td>P-10193</td>
<td>Electron solvent (1 gallon)</td>
</tr>
<tr>
<td>LNF-902</td>
<td>Skydrol kit (phosphate ester fluids) for LaserNet 210 and LaserNet 220 only (factory installation)</td>
</tr>
<tr>
<td>LNF-905</td>
<td>Skydrol kit (phosphate ester fluids) for LaserNet 230 only (factory installation)</td>
</tr>
<tr>
<td>MHM-10605</td>
<td>10 ml plastic syringe, package of 100</td>
</tr>
<tr>
<td>M99919</td>
<td>ASP sample bottles, 120 ml (4 oz), package of 50</td>
</tr>
<tr>
<td>600-00008</td>
<td>Spectro Certified Sample Bottle, PET, 120 ml (4 oz), package of 50</td>
</tr>
<tr>
<td>AS051SF</td>
<td>Solvent Filtration and Dispenser</td>
</tr>
<tr>
<td>ASP</td>
<td>Autosampler for LaserNet 200 Series, 115/230V</td>
</tr>
<tr>
<td>A475101</td>
<td>OilView LIMS software</td>
</tr>
<tr>
<td>750-00047</td>
<td>MiniLab Software for Oilview LIMS interface</td>
</tr>
<tr>
<td>M90035</td>
<td>SpectroTrack base product</td>
</tr>
</tbody>
</table>

## PRODUCT INFORMATION

- **Applications**: Mineral and synthetic lubricants including gear, engine, hydraulic, turbine and distillate fuels
- **Output**: Particle count: ISO 4406, NAS 1638, NAVAIR 01-1A-17, SAE AS 4059, GOST, ASTM D6786, HAL and user defined Total ferrous, ppm Ferrous particle count and distribution Free water, ppm; Soot wt. %; Particle shape per LaserNet 200 Series method

## Methodology

- **ASTM D7596, ASTM WK52557**

## Standard Analytical Range

- **Particles 4 μm - 100 μm**

## Calibration

- **Not required. Validation standards supplied with instrument.**

## OPERATIONAL SPECIFICATIONS

### Sample Volume

- **5-30 mL, varies with viscosity**

### Solvents/Reagents

- **Solvent options when processing mineral based oils:**
  - Electron-22 Environmentally Safe Solvent
  - Lamp Oil/Kerosene
  - Diesel or Jet Fuel
- **Solvent options when processing Skydrol:**
  - IPA (Isopropyl Alcohol) or Acetone only
- **Note:** Higher flammability solvents (Isopropyl Alcohol (IPA), Hexane, Heptane, Naphtha, Mineral Spirits, Toluene, Petrol) may be used with appropriate caution in the LNF, however these may NOT be used with an ASP.

## Environmental Operating Requirements

- **5C to 40C ambient temperature, 10-80% relative humidity, non-condensing, 2000 m maximum altitude**

## USER INTERFACE SPECIFICATIONS

- **Software/Operating System**: Windows® 7 Pro, 32 or 64 bit, US English version

## POWER REQUIREMENTS

- **Power**: LaserNet 200 Series: AC 110/240 V, 50/60 Hz, 10 Watts
  - ASP: AC 115/230 V, 50/60 Hz, 2.5A/1.6A

## MECHANICAL SPECIFICATIONS

### Dimensions

- **LaserNet 200 Series**: 22.9 cm x 17.8 cm x 43.2 cm (9 in x 7 in x 17 in)
- **ASP**: 55 cm x 62 cm x 52 cm (21.5 in x 24.5 in x 20.5 in)

### Weight

- **LaserNet 200 Series**: 7.7 kg (17 lbs)
- **ASP**: 35 kg (76 lb)

## Compliance

- **CE Mark**: EMC Directive (2004/108/EC); RoHS, UL, CSA, ETL

## SUPPORT CONTRACTS

- **SVC025**: Service Contract LaserNet 210/LaserNet 220
- **SVC026**: Service Contract LaserNet 230