The LaserNet 200 Series is a contamination and wear debris system designed for lubricant condition monitoring for predictive maintenance.

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)
- Ferrous content measurement in the sample with ferrous particle count and size distribution
- Differentiation of large ferrous particles >25 micron from total ferrous particles. Reporting percentage of large ferrous particles and ferrous wear severity index for easy trending and interpretation of the ferrous measurements. Patent pending.
- Classification of wear particles, image storage and reporting of particle count and size for Cutting, Sliding, Fatigue, Fibers and Non-metallic wear types

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

---

**LaserNet Comparison**

<table>
<thead>
<tr>
<th>LaserNet Comparison</th>
<th>210</th>
<th>215</th>
<th>220</th>
<th>230</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total particle count &amp; codes</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Non-metallic particles (sand/dirt)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Free water measurement</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Air bubble/water droplet correction</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Wear particle classification</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Total ferrous concentration</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Ferrous particle count &amp; size distribution</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Large ferrous concentration</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Autosampler option</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
The LaserNet 200 Series provides particle counts and codes, ferrous wear monitoring, and large wear particle classification.

Wear images are stored and analyzed directly on the LaserNet 200 software. They can be exported to TruVu 360™, OilView™ and other LIMS offerings.

Ferrous Monitor to measure ferrous content

Ferrous wear measurement is a critical requirement for monitoring machine condition. The high sensitivity in line magnetometer measures and reports ferrous content in ppm, and provides ferrous particle count and size distribution for large ferrous particles >25 μm.

Measurement of both ferrous content and total particle count on the same sample, provides the ability to report larger ferrous particles and ferrous wear index. These parameters, in addition to wear particle shape provide the user with wear debris analysis metrics eliminating the need to measure ferrous content, or manual ferrography on other instruments.

LaserNet Flush cleans the system and offers the following:
- Reduces cross-contamination due to highly contaminated wet samples.
- Uses less solvents
- Provides more accurate data
- Non-flammable and non-hazardous for easy shipping
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.

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

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 TruVu 360 Device Console (TDC) fully integrates the LaserNet 200 with the TruVu 360 Enterprise Fluid Intelligence platform.
## LaserNet 200 Series Product Information

### Methodology
- **ASTM D7596**

### 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
- **Recommended solvents when processing mineral based oils**: LaserNet Flush
- **Alternative solvent for dry oils**: Lamp Oil/Kerosene, Diesel or Jet Fuel

**Notes:**
1. Lamp oil/Kerosene, diesel, or jet fuel not effective for flushing after samples with high water content.
2. Higher flammability solvents (Isopropyl Alcohol (IPA), Hexane, Heptane, Naptha, Mineral Spirits, Toluene, Petrol) may be used with appropriate caution in the LaserNet, however; these may NOT be used with an ASP.
3. Solvent options when processing Skydrol: IPA (Isopropyl Alcohol) or Acetone only.

### Environmental Operating Requirements
- 5°C to 40°C ambient temperature, 10-80% relative humidity, non-condensing, 2000 m maximum altitude

### User Interface Specifications
- **Software/Operating System**: Windows® 7, Windows 10 Pro, 32 or 64 bit, US English version

### Power Requirements
- **Power**: LaserNet 200 Series: AC 110/240 V, 50/60 Hz, 10 Watts

### 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)
- **Weight**: LaserNet 200 Series: 7.7 kg (17 lbs)
- **Shipping Package**
  - LaserNet 200 Series: 35.6 cm x 36.8 cm x 78.7 cm (14 in x 14.5 in x 31 in)
  - **Shipping Package Weight**: LaserNet 200 Series: 12.2 kg (27 lbs)

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

### Support Resources
- **SVC107**: Global one year support agreement
- **EDC303**: Online live training, 3 hours
- **SVC026**: Factory preventive maintenance & calibration
- **SVC026-F**: In field (continental US) preventive maintenance & calibration

### Part Numbers
- **800-00122**: LaserNet 210 particle counter. Requires SA1023 or SA1024 accessory kit and a PC.
- **800-00123**: LaserNet 215 particle counter with ferrous monitor. Requires SA1025 or SA1026 accessory kit and a PC.
- **800-00124**: LaserNet 220 particle counter with wear particle shape classifier. Requires SA1023 or SA1024 accessory kit and a PC.
- **800-00125**: LaserNet 230 particle counter, wear particle classifier, and ferrous monitor. Requires SA1025 or SA1026 accessory kit and a PC.
- **800-00127**: LaserNet 210, Skydrol Compatible, including LaserNet 210 optical particle counter, software, user manual, connection cables and power cord. Requires 800-00156 or 800-00158 Standard Accessory Kits.
- **800-00128**: LaserNet 215, Skydrol Compatible, including LaserNet 215 optical particle analyzer with particle count and distribution, and ferrous particle analysis, software, user manual, connection cables and power cord. Requires 800-00157 or 800-00158 Standard Accessory Kits.
- **800-00129**: LaserNet 220, Skydrol Compatible, including LaserNet 220 optical particle analyzer with particle count and distribution, and wear particle classification, software, user manual, connection cables and power cord. Requires 800-00156 or 800-00158 Standard Accessory Kits.
- **800-00130**: LaserNet 230, Skydrol Compatible, including LaserNet 230 optical particle analyzer with particle count and distribution, wear particle classification and ferrous particle analysis, software, user manual, connection cables and power cord. Requires 800-00157 or 800-00158 Standard Accessory Kits.

### Accessories and Consumables
- **LNF-909**: LaserNet 200 Series routine maintenance kit
- **LNF-910**: LaserNet 200 Series with Skydrol configuration routine maintenance kit
- **LNF-509**: Calibration check fluid 2806, 400 ml
- **LNF-545**: Ferrous validation standard, 400 ml
- **600-00008**: Spectro certified sample bottle, PET, 120 ml (4 oz), package of 50

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

---

AMETEK Spectro Scientific | One Executive Drive, Suite 101, Chelmsford, MA 01824-2563
978-431-1120 | www.spectrosci.com | sales.spectrosci@ametek.com | An ISO 9001:2015 company

Copyright © 2018 Spectro Scientific. All rights reserved. While every effort is made to assure the information in this document is accurate, Spectro Scientific does not accept liability for any errors or omissions that may arise. Specifications are subject to change without notice.