HIAC HRLD Series
Light Obscuration Liquid Particle Counting Sensors
Sensors for particle contamination monitoring

Features and Benefits

- High concentration limits
- Available in wide range of flow rates
- Wide operating pressure range
- On-line and batch operation
- Calibration certificate, traceable to NIST Standards

Applications

- Precision cleaning bath monitoring
- Hard disk-drive component cleanliness testing
- Filter testing
- On-line process monitoring
- Pharmaceutical testing USP <788>
- On-line and laboratory condition monitoring of hydraulic fluids

Reproducible particle counting is critical for standards such as USP <788> and ANSI/NFPA/T2.9.6R1. Typically, sample-to-sample reproducibilities of better than 10% can be expected for on-line and laboratory sampling applications.

The laser diode light source in HIAC obscuration sensors provides insensitivity to vibration as well as robust and stable illumination resulting in repeatable and accurate particle counting performance.

Fluid compatibility is as follows:

GROUP 1: HRLD-100/100HC/150/400/400HC

- Hydraulic fluids
- Phosphate esters*
- Water for injection
- Stoddard solvent
- Kerosene
- Diesel fuel
- Jet fuel (JP4, JP5)
- Purified water
- Alcohols

GROUP 2: HRLD-150JA/600JS (Group 1, plus:)

- Aldehydes
- Ketones
- Esters
- Aromatics
- Sulfuric acid
- Phosphoric acid
- Hydrochloric acid
- Sodium hydroxide
- Hydrogen peroxide
- Ammonium hydroxide

### Specifications

<table>
<thead>
<tr>
<th>HRLD Series Model Number</th>
<th>Measurement Range (μm)</th>
<th>Concentration Limit (&lt;10% coincidence)</th>
<th>Flow Rates (mL/min)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HRLD-100</td>
<td>4 μm(c)-100 μm(c)*</td>
<td>10,000</td>
<td>20-100</td>
</tr>
<tr>
<td>HRLD-100HC</td>
<td>4 μm(c)-100 μm(c)*</td>
<td>18,000</td>
<td>10-50</td>
</tr>
<tr>
<td>HRLD-150</td>
<td>1.3 min.-150</td>
<td>18,000</td>
<td>10-25</td>
</tr>
<tr>
<td>HRLD-150JA</td>
<td>1.3 min.-150</td>
<td>18,000</td>
<td>10-25</td>
</tr>
<tr>
<td>HRLD-400</td>
<td>2.0 min.-400</td>
<td>10,000</td>
<td>20-100</td>
</tr>
<tr>
<td>HRLD-400HC</td>
<td>2.0 min.-400</td>
<td>18,000</td>
<td>10-50</td>
</tr>
<tr>
<td>HRLD-600JS</td>
<td>2.0 min.-600</td>
<td>6,000</td>
<td>30-200</td>
</tr>
</tbody>
</table>

* As per ISO 11171 and ISO 4406. Note that 4 μm(c) < 2 μm

**Pressure Limit**
- 69 bar (1000 psi)

**Sample Temperature Limit**
- 65°C (150°F)

**Calibration Options**
- ASTM F658-87 (PSL spheres); ISO 4402 (ACFTD in oil); or ISO 11171 (MTD in oil). For pharmaceutical applications, sensor resolution can be factory tested in accordance with USP <788>.

**When ordering, specify**
- HRLD-100
- HRLD-100HC
- HRLD-150
- HRLD-150JA
- HRLD-400
- HRLD-400HC
- HRLD-600JS

**Compliance Certifications**
- CE Compliant per EMC and Low Voltage Directives
- Class 1 Laser Product Complies with IEC/EN 60825-1 and 21 CFR 1040.10 pursuant to Laser Notice 50 **

**Contact manufacturer for complete compliance details**

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**In the interest of improving and updating its equipment, Hach Company reserves the right to alter specifications to equipment at any time.**

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**CLASS 1 LASER PRODUCT**
Contact manufacturer for complete compliance details

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