

HIAC HRLD Series Light Obscuration Liquid Particle Counting Sensors

Sensors for particle contamination monitoring

Features and Benefits

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- 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:

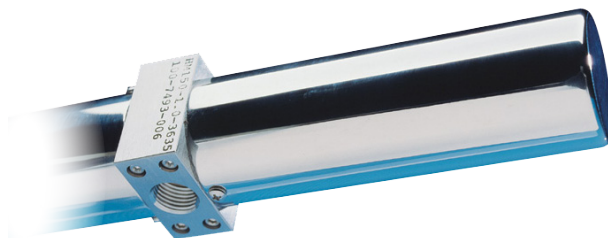
GROUP 1: HRLD-100/100HC/150/400/400HC

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		

*Viton™ seals standard. Kalrez™ seals available for phosphate esters.



The HIAC HRLD Series light obscuration liquid particle counting sensors use laser diode technology to measure particles from 1.3 to 600 microns in a variety of fluids. For particles of 1.3 microns and larger, light obscuration is the preferred technology.

These sensors are used in a wide range of applications for contamination monitoring, such as fluid power, pharmaceutical and biotech products and precision cleaning applications. Many industries that formerly used microscopes for particle counting have turned to light obscuration sensors for increased accuracy, reliability and efficiency.



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Specifications

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

* 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

CE CLASS 1 LASER PRODUCT
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Make it simple.
Be right.**

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