



Sensors for industrial & contamination monitoring

Light Extinction Liquid Particle Counting Sensors

FEATURES

- Long life laser diode
- High concentration limits
- High flow rates
- Wide operating pressure range
- Vibration insensitive
- Viscous and dark liquid samples compatibility
- Online and batch operation
- Calibration certificate, traceable to NIST Standards

APPLICATIONS

- Precision Cleaning Bath Monitoring
- Filter Testing
- Online Process Monitoring
- Liquid *In Situ* Process Monitoring



The HIAC HRLD and LB Series sensors use laser diode technology to measure particles from 1.2 to 600 micrometers in a variety of fluids. For particles of 1.2 micrometer and larger, light extinction is the preferred technology. These sensors are used in a wide range of applications for contamination monitoring, such as fluid power, pharmaceutical industries, and precision cleaning applications. Many industries that formerly used microscopes for particle counting have turned to extinction sensors for increased accuracy, reliability, and efficiency.

Reproducible counting of particles is critical for standards such as USP <788> and ANSI/NFPA/T2.9.6R1. HIAC extinction sensors exhibit count reproducibility better than 10% for mean counts greater than 1000 particles/ml. These features guarantee reproducible results.

HIAC extinction sensors offer increased levels of reliability because of their laser diode light source. They are vibration insensitive and provide a long life and stable illumination, eliminating the frustration of frequent lamp changes. The sensors also compensate for dark fluids, providing accurate results. HRLD surpasses all industry standards with resolution of better than 10% (typical 3% at 10 microns). Fluid compatibility is as follows:

GROUP 1: HRLD-100/150/400/400HC, LB-1020

Hydraulic fluids	Phosphate esters*	Skydrol*
Stoddard solvent	Kerosene	Diesel fuel
Jet fuel (JP4, JP5)	Pharmaceutical products	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 and Skydrol™.



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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	60
HRLD-100HC	4 µm(c)-100 µm(c)*	18,000	20
HRLD-150	1.2 min.-150	18,000	10 or 25
HRLD-400	2.0 min.-400	10,000	60
HRLD-400HC	2.0 min.-400	18,000	20
HRLD-150JA	1.2 min.-150	18,000	10 or 25
HRLD-600JS	2.0 min.-600	6,000	100

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

Pressure Limit	1000 psi (6,894 kPa)
Sample Temperature Limit	150°F (65°C)
Calibration Options	ASTM F658-87 (PSL spheres); ISO 4402 (ACFTD in oil); or, ISO 11171 (MTD in oil). For pharmaceutical applications, sensor resolution is factory tested in accordance with USP <788>.

LB Series Model Number	Measurement Range (µm)	Concentration Limit (<10% coincidence)	Flow Rates (mL/min)
LB-1020 (STD)	2.0 min.-400	16,000	100 (20-120 avail.)
LB-1020 (HC)	2.0 min.-250	45,000	50 (20-60 avail.)

Pressure Limit	3000 psi (20,684 kPa)
Calibration Options	SAE ARP 1192B and ASTM F658-87 (PSL spheres in water); available if requested: NFPA T2.9.6 R2 and ANSI B93.28-1973 (ACFTD in 5606 oil)

ORDERING GUIDE

When Ordering, specify:

HRLD-100	HRLD-150	HRLD-400	LB-1020
HRLD-100HC	HRLD-150JA	HRLD-400HC	LB-1020HC
HRLD-600JS			



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