

HIAC HRLD SERIES LIGHT OBSCURATION LIQUID PARTICLE COUNTING SENSORS

Sensors for particle contamination monitoring

Features

- 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

The HIAC HRLD Series light obscuration liquid particle counting sensors use laser diode technology to measure particles from 1.2 to 600 microns in a variety of fluids. For particles of 1.2 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.

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.



www.hachultra.com

EXCELLENCE IN PROCESS ANALYTICS

Performance Specifications

HRLD Series Model Number	Measurement Range (µm)	Concentration Limit (<10% coincidence)	Flow Rates (mL/min)	Standard Calibrated Flow Rate (mL/min)
HRLD-100	4 µm(c)-100 µm(c)*	10,000	20-100	60
HRLD-100HC	4 µm(c)-100 µm(c)*	18,000	10-50	20
HRLD-150	1.2 min.-150	18,000	10-50	10 or 25
HRLD-150JA	1.2 min.-150	18,000	10-50	10 or 25
HRLD-400	2.0 min.-400	10,000	20-100	60
HRLD-400HC	2.0 min.-400	18,000	10-50	20
HRLD-600JS	2.0 min.-600	6,000	30-200	100

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

NOTE: Minimum and maximum particle sizes are not available at all flow rates within the ranges specified. Consult factory for non-standard flow-rate particle sensitivities.

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



Global Headquarters

6, route de Compois, CP 212
1222 Vérenaz, Geneva, Switzerland
Tel +41 (0)22 594 64 00
Fax +41 (0)22 594 64 99

Americas Headquarters

481 California Avenue
Grants Pass, Oregon 97526, USA
Tel 1 800 866 7889 / +1 541 472 6500
Fax +1 541 472 6170



© 2007 Hach Ultra Analytics, Inc. Trademarks are property of their respective owners. Specifications are subject to change without notice.

ANATEL HIAC ORBISPHERE HYT MET ONE POLYMETRON

www.hachultra.com