

LISST-INFINITE

Turbine Abrasion Warning System

• On-line Sediment Monitoring • Very High Concentration

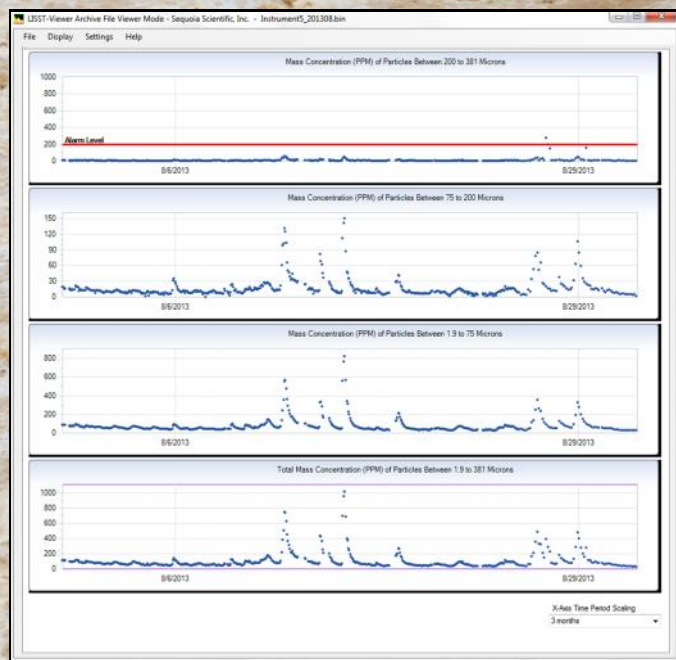
The LISST-INFINITE On-Line Sediment Monitoring System is specifically designed for use in hydropower plants where extreme sediments cause turbine abrasion. It incorporates state of the art Laser Diffraction technology, and thereby accurately records silt concentrations in 32 size classes. In situations of high concentrations, an

automated dilution system kicks in, extending working concentration range from ~8,000 to ~80,000 ppm. Provided software displays time-series of concentration in 4 size classes: fine, medium, coarse and total. The software also has user-settable alarms for hazardous sediment conditions and system maintenance alerts.

An optional Modbus-TCP interface module allows connection to existing SCADA systems. The LISST-INFINITE operates with line power and a filtered clean water supply. Sequoia offers complete turnkey installations of the LISST-INFINITE for hydro power monitoring applications. Contact your Sequoia representative for details.



Real-Time Monitoring



FEATURES

- Designed to be used autonomously.
- Operates from line power.
- Self contained system transmits data in real-time over RS-485 to monitoring PC (not included).
- Submersible well pump for sample intake acquisition (optional).
- 10:1 single dilution as required.
- Built in clean water source level monitoring.
- Automatic background recalibrations for improved long term performance.
- Warnings for high sediment concentrations in power plant control room monitor-PC
- Built-in ultrasonic cleaning
- Monitoring software included

SPECIFICATIONS (subject to change without notice)

Sediment concentration, size range, accuracy

- 10-81,000 mg/l @ < 1mg/l resolution. NOTE: Actual range is dependent on the grain-size and size distribution of the suspended particles. The table shows concentration ranges based on measurements using ISO particle standards and easily obtained reference materials. SMD: Sauter Mean Diameter. Table is based on 0 dilutions. Multiply all concentrations by 10 for the concentration range available with 1 dilution.

Material	SSC [mg/l]	SSC [mg/l]	D10 [μm]	D50 [μm]	D90 [μm]	SMD [μm]
	98% optical transmission	30% optical transmission				
ISO Fine (ISO 12103-1,A2)	10	700	1.5	7	41	3
ISO Coarse (ISO 12103-1,A4)	50	1,525	4	38	99	10
20-30 μm glass beads	90	4,450	19	24	34	24
75-125 μm sieved sand	135	8,110	85	122	175	112

- 2.5-500 μm particle size range in 32 log-spaced size classes
- Accuracy as per USGS acceptance criteria:

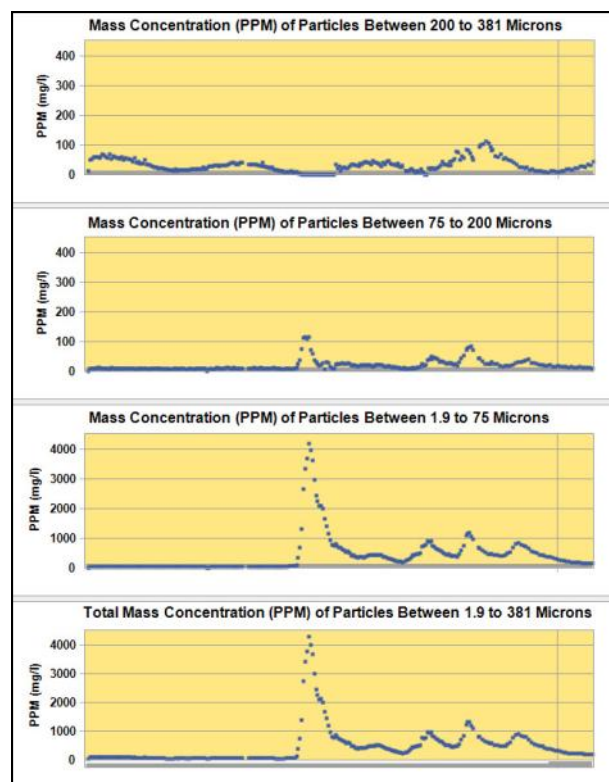
Min SSC (g/L)	Max SSC (g/L)	Accuracy (± Percent)
0	<0.01	50
0.01	<0.1	50-25 linearly
0.1	<1.0	25-15 linearly
1.0	-	15

Parameters Measured

- Detailed Particle Size distribution in 32 log spaced size classes
- Detailed Volume Concentration
- Optical Transmission

Mechanical and Electrical

- Dimensions: 24" × 8.5" × 16" [H × D × W]
- Weight: 15 kg
- Mounting: Wall mounting only.
- Pressure: 5 psi incoming water pressure or less
- 4-20 mA or MODBUS output available upon request
- 110/220VAC, 50Hz



LISST-Infinite Monitor software showing concentration time-history

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