

LISST-200X

Next Generation Submersible Particle Size Analyzer

• Size Distribution • Volume Concentration • Optical VSF

The LISST-200X is a submersible laser-diffraction based particle size analyzer designed to measure particle size and concentration in rivers, streams, ports, harbors, coasts and oceans, whether for biological, sediment transport, or environmental monitoring needs.

Applications include sediment transport studies, harmful algae blooms, oil spill dispersion effectiveness, dredge plume monitoring, etc. For marine optics applications the LISST-200X provides the small-angle Volume Scattering Function.

20 years of LISST-100X experience combined with feedback from users has led us to create this Smaller, Deeper, and Smarter Particle Size Analyzer.

The LISST-200X is significantly smaller than the LISST-100X but it has also been made stronger and is now able to make measurements at twice the depth: up to 600 meters. Improved optics cover the size range 1-500 microns in 36 size classes. The optics are also more robust and have improved rejection of ambient light. A superior depth sensor and a faster temperature sensor improve profiling data. The 25mm optical path allows a wider working range of particle concentrations. Auxiliary information, such as calibrations and background files, are stored in the saved data file. All information needed to process the data are included in this single file, therefore alleviating the need for tracking multiple files.

The LISST-200X also outputs the Mean Size and Total Concentration as analog voltages while simultaneously storing the full size distribution internally for later downloading. This allows real-time monitoring of summary data during profiles via existing CTD interfaces.

A full range of accessories are available for the LISST-200X including small and large External Battery Packs, Mixing Chamber, Flow Through Chamber, BioBlock Anti-Fouling Shutter, Settling Column, Path Reduction Modules, and towed and AUV configurations.

This next generation particle sizer is simply smaller, deeper and smarter, whether for lab or field use.



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LISST-200X

Submersible Particle Size Analyzer

FEATURES

- Small Angle Forward Scattering Laser Diffraction Technology
- Measures Particle Size and Concentration
- Self Contained with internal programmable datalogger
- Externally powered (Small and Extended Battery Packs available)
- USB connection to PC for programming, offloading and real-time size distribution displays
- Programmable, autonomous data collection
- Integrated Depth and Fast Response Temperature Sensors
- 36 size classes measuring 1 to 500 microns
- Analog output of Mean Size and Total Volume Concentration

APPLICATIONS

- Sediment transport in rivers, lakes, and oceans
- Sediment monitoring for reservoir siltation studies
- Dredge plume monitoring
- Ocean optics and remote sensing studies
- Underwater visibility, imaging, and communications
- Harmful Algae Bloom monitoring
- Oil spill dispersion effectiveness monitoring
- Environmental impact studies
- Laboratory particle size measurements
- Aquaculture

SPECIFICATIONS (subject to change without notice)

Parameters measured

- Particle Size Distribution from 1.0-500 μ m in 36 size ranges
- Depth (600 meter max depth @ 0.01 meter resolution)
- Temperature @ 0.01 deg C resolution; Response time: 2.5 sec.
- Optical transmission @ 0.1% resolution
- Volume Concentration @ 0.1 μ l/l resolution
- Volume Scattering Function from 0.036 to 13.8 degrees in water
- Analog output of Mean Size and Total Volume Concentration

Operating Concentration range

- Optical transmission from 0.3-0.99 (30-99%)
- Concentration from ~ 0.5-700 mg/l (particle-size dependent)

Technology

- Small-angle forward scattering
- 32-ring custom photodiode Ring Detector + 4 large angle detectors
- 25 mm optical path

Mechanical and electrical

- Dimensions 10.03 cm (3.95") \varnothing \times 63.9 cm (25.2") L
- Weight: 5.4 kg (11.8 lbs) in air, 1.7 kg (3.8 lbs) in water
- 600 meter depth rating
- External power input: 12VDC nominal, 8-24VDC
- Sampling rate: Up to 1 Hz
- Current drain at 12V: 100mA Sampling, 8 mA between samples
- Data storage: 1 GB (~12,500,000 size distributions)

