

LISST-100X

Submersible Particle Size Analyzer

- **Particle Size Distribution**
- **Volume Scattering Function**
- **Optical Transmission**
- **Particle Volume Concentration**

The LISST-100X instrument obtains *in-situ* measurements of particle size distribution, optical transmission, and the optical volume scattering function (VSF). Using a red 670nm diode laser and a custom silicon detector, small-angle scattering from suspended particles is sensed at 32 specific log-spaced angle ranges.

This primary measurement is post-processed to obtain sediment size distribution, volume concentration, optical transmission, and VSF. Special versions for deep-ocean use, and for high turbidity environments are available (see LISST-INFINITE). Temperature and depth are also recorded. Optionally, SeaBird

MicroCat 37-SI CTD can be integrated for high precision conductivity, temperature, and depth measurement. For extended field deployment, our BIOBLOCK anti-fouling system option is recommended. The LISST-100X replaces our original workhorse, the LISST-100 instrument.



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FEATURES

- Small Angle Forward Scattering Laser Diffraction Technology
- Self Contained with internal datalogger and Alkaline battery pack
- RS232 connection to PC for real-time size distribution displays
- Programmable data collection
- New high performance datalogger with expandable CF Memory module
- Integrated BioBlock connection

SPECIFICATIONS

Parameters Measured

Particle size Distribution, Particle Volume Concentration, Optical Transmission, Volume Scattering Function, Depth, Temperature

Technology

Small Angle Forward Scattering
 Laser: Solid State diode 670 nm, < 1mw
 Detector: 32-ring custom photodiode
 Sample rate: Programmable, up to 4 size distributions per second
 Optical Path: 50mm standard
 Optional shorter paths available for higher max. concentrations

Sediment Concentration

Range: 1 mg-750 mg/L (approx. range based on 30 micron mean size particles)
 Resolution: <1mg/l

Sediment Size Distribution

Number of size classes: 32 (log-spaced)
 Size Range: 1.25 to 250 microns or, 2.5 to 500 microns
 Special Version, LISST-Floc 7 to 1400 microns

Mechanical and Electrical

Dimensions: 5.25" diameter x 34.25" long (13.3 cm diameter x 87cm long)
 Weight: 25 lbs (11 Kg) in air, 8 lbs (3.6 kg) in water
 Depth Rating: 300 meters
 Serial Interface: RS232C , 9600 baud, High speed offload at 115K baud
 Alkaline battery pack: Custom 9V nominal pack, 42 amp-hr
 External Power Input (optional): 12 VDC nominal, 10 to 24 VDC,
 Standard Flash Memory Module: 16Mb (195,000 size distributions)

