

LISST-100X

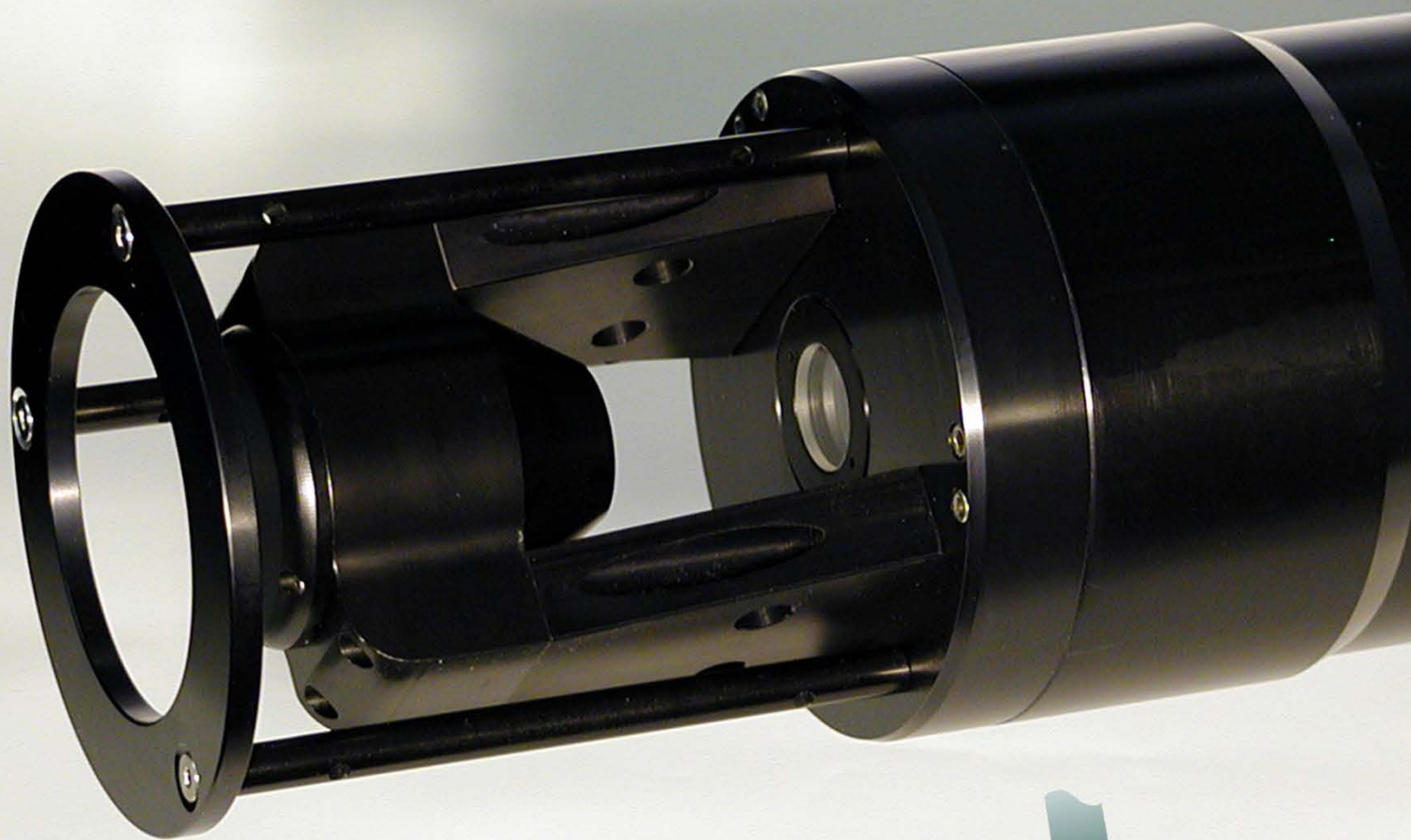
Submersible Particle Size Analyzer

- **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. Temperature and depth are also recorded. Optionally, a SeaBird MicroCat 37-SI CTD can be integrated for high precision conductivity, temperature, and depth measurement. Alternatively a Campbell OBS-3+ or a Turner

Designs Cyclops-7 fluorometer can be integrated upon request. Special versions with folded housing or a shorter housing with an external battery pack are available. A version for deep-ocean use (LISST-DEEP) is also available. For extended field deployment, our BIOBLOCK anti-fouling system option is recommended.



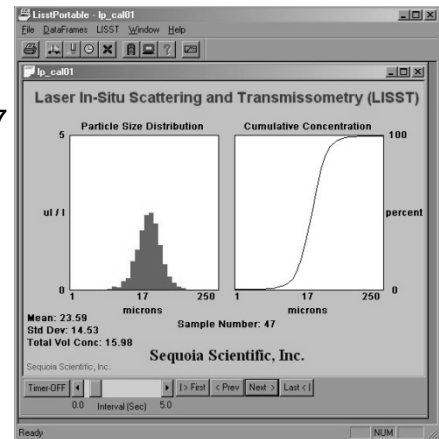
FEATURES

- Small angle forward-scattering laser diffraction technology
- Self-contained with internal datalogger, CF memory module and alkaline battery pack
- RS232 connection to PC for real-time size distribution displays
- Programmable data collection
- Integrated BioBlock connection
- *Optional extra feature:* Can be configured to receive input from Campbell OBS-3+, Turner Designs Cyclops-7 fluorometer or Sea-Bird Micro-Cat CTD.

SPECIFICATIONS

Parameters Measured

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



Technology

Solid State Diode Laser @ 670 nm, 1mW
 Detector: 32-ring custom photodiode
 Sample Rate: Programmable, up to 25 Hz internally, 1 Hz saving to datalogger
 Optical Path: 50 mm standard. Bolt-on path reduction modules are available for higher concentration environments

Sediment Size Distribution, Scattering Angles and Concentration

32 log-spaced size classes: 1.25-250 or 2.5-500 μm (0.08-15° or 0.04-7.5° in water)
 Range: 1-750 mg/L (approximate range based on 30 μm mean size particles)
 Resolution: <1 mg/L

Mechanical and Electrical

Dimensions: 5.25" (13.3 cm) \varnothing x 34.25" (87 cm) L
 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, 42Ah
 External Power Input (optional): 12 VDC nominal, 10 to 24 VDC
 CF Memory Card: 128 Mb standard (1,600,000 size distributions)
 Battery Current Drain: 146 mA / 8 mA / 128 μA (measuring/quiescent/sleeping)

