

# LISST-200X

## SUBMERSIBLE PARTICLE SIZE ANALYZER

### **Particle Size Distribution • Volume Concentration Beam Attenuation • VSF**

The LISST-200X is Sequoia's workhorse. It is a self-contained submersible laser-diffraction based particle size analyzer, designed for measuring suspended particle size and concentration in the aquatic environment - oceans, rivers, lakes, streams. A fast response temperature sensor and a high-resolution depth sensor makes it suitable for profiling or towing. With Sequoia's optional BioBlock accessory it can be deployed for months on moorings or landers for long-term studies. For the system integrator, the LISST-200X can power and accept inputs from up to three external analog sensors. The LISST-200X is typically used for sediment, (harmful) algae, oil-spill, ocean optics, visibility, dredging, aquaculture, environmental and laboratory applications.



## FEATURES

- Small angle forward scattering laser diffraction technology
- Measures particle size, concentration, beam attenuation, VSF, depth, temperature
- Self-contained with internal programmable datalogger for autonomous data collection
- Externally powered (short- and long-term deployment battery packs included)
- USB connection to PC for programming, offloading and real-time size distribution displays
- Integrated depth and fast response temperature sensors
- Power and integrate up to three external analog sensors
- Analog output of mean particle size and total volume concentration
- Wide range of accessories available

## SPECIFICATIONS subject to change without notice

### Parameters Measured

- Particle size distribution in 36 size ranges
- Depth @ 0.01 m resolution
- Temperature @ 0.01 °C resolution; response time 2.5 s
- Optical transmission @ 0.1 % resolution
- Volume Concentration @ 0.1  $\mu\text{L}\cdot\text{L}^{-1}$  resolution
- VSF at 36 angles

### Measurement Ranges

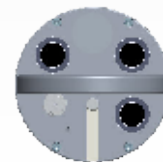
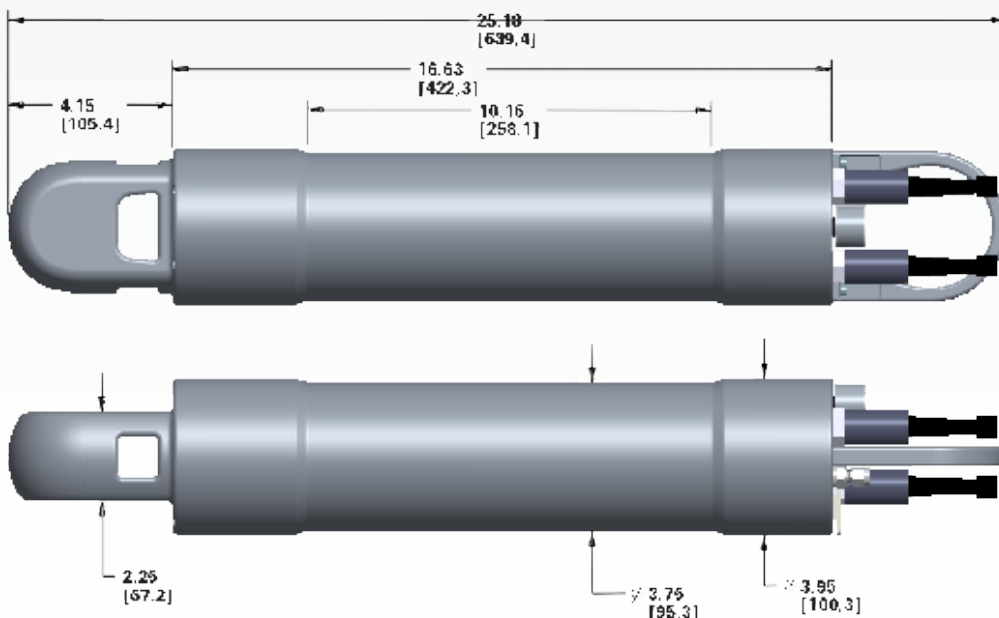
- Particle size distribution from 1  $\mu\text{m}$  to 500  $\mu\text{m}$
- Depth from 0 m to 600 m
- Temperature from -5 °C to 45 °C
- Optical transmission from 0.3 to 0.99 (30 % to 99 %)
- Concentration from ~ 0.5  $\text{mg}\cdot\text{L}^{-1}$  to 700  $\text{mg}\cdot\text{L}^{-1}$  (particle-size dependent)
- VSF from 0.036 ° to 13.8 ° in water

### Technology

- Small-angle forward laser light scattering
- 670 nm laser diode
- 32-ring custom photodiode Ring detector + 4 large angle detectors
- 25 mm optical path

### Mechanical and Electrical

- Dimensions [ $\varnothing \times \text{L}$ ]: 10.03 cm  $\times$  63.9 cm (3.95"  $\times$  25.2")
- Weight [air / water]: 5.4 kg / 1.7 kg (11.8 lbs / 3.8 lbs)
- Depth rating: 600 m
- External power input: 12 VDC nominal, 8 VDC to 24 VDC
- Current drain at 12 V: 100 mA Sampling, 8 mA between samples
- Sampling rate: Up to 1 Hz
- Data storage: 1 GB (~12,000,000 measurements; ~140 days @ 1 Hz)
- SubConn MCBH3M, MCBH5M and MCBH6M connectors



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