LISST-HORIZON

Flow-Through Automated Particle Size and Scattering Measurement

- **Particle Size Distribution**
- **Volume Scattering Function**
- **Beam Transmission**
- **Total Scattering & Backscattering**

The LISST-HORIZON is a self-contained instrument for bench-top deployment in a research vessel laboratory. Plumbed to continuous underway uncontaminated seawater, it continuously measures particle size distribution, concentration, and inherent optical properties.

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FEATURES

- Automated deployment in flow-through seawater systems, including clean water backgrounds, cleaning, and scattering standard measurement
- Mixers in the sample chamber to keep particles suspended during measurement
- Automated filtered sample background using attached external particle filter (0.2 µm)
- Measures near-forward (0.1-15°, 36 log-spaced detectors) and side scattering (35-150°, 24 detectors) from a 520 nm laser source
- Beam attenuation and particle sizing from proven LISST-200X optics, with extended pathlength for application to offshore waters
- Side scattering allows for particle sizing over an extended range, ~0.2 to 500 µm
- Raw data stored internally and offloaded via ethernet for processing with provided MATLAB software

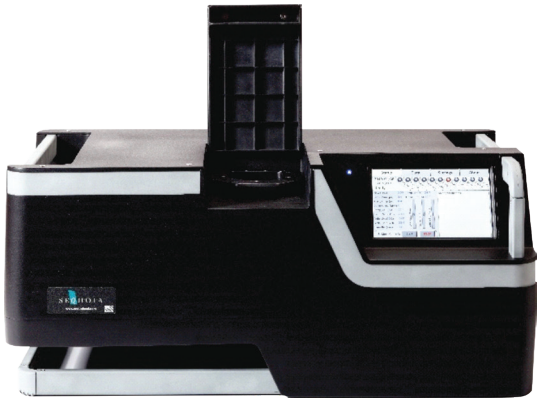
SPECIFICATIONS (subject to change without notice)

Parameters Measured

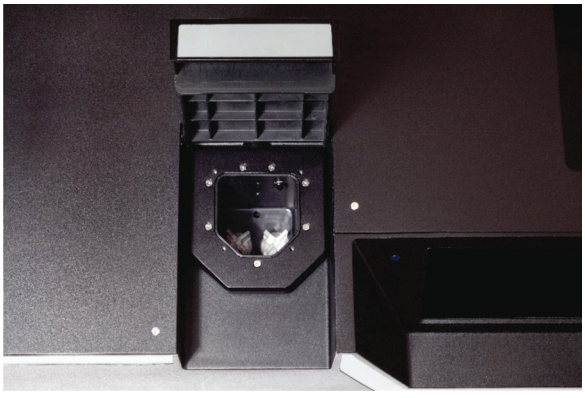
- Volume scattering function (VSF) from 0.1 to 150°
- Particle size distribution inverted from scattering measurements
- Beam transmission
- Derived IOPs including total scattering, backscattering, and absorption by difference ($a = c - b$)
- Sample temperature and fluidics parameters such as pressures and flow rate

Mechanical and Electrical

- Dimensions: L = 67.4 cm x W = 37.5 cm x H = 29.3 cm
- Weight: 19 kg
- Laser: 520 nm solid state diode laser
- External power input: 110/220 VAC converted to 24 VDC using provided power brick
- Plumbing connections using 3/8 inch OD (1/2 inch for drain) tubing and push-to-connect fittings
- External tanks for holding clean water for background, cleaning solution, and scattering standard; each with pressure sensor for monitoring tank level



Front view – sample cover open and touch panel



Top view – open sample chamber with mixers

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