The LISST-ABS is a low-cost acoustic backscatter sensor designed specifically for measuring suspended sediment concentration. It is designed for fixed-point measurements and operates at 8 MHz. At this frequency, acoustic has a nearly flat response to particles in the size range 30 µm to ~400 µm. As a result, the LISST-ABS maintains calibration within ± 30 %. This compares with optical turbidity sensors that maintains calibration within ± 400 % over the same size range.
FEATURES

• Calibrated for life from factory
• Outputs concentration in analog, SDI-12 and RS232 formats on the underwater connector
• Integrates with any datalogger that can provide power and accept analog, SDI-12 or RS232 signals
• Installs on fixed structures, profiling packages and underwater vehicles or tow bodies (minimum 15 cm from solid boundaries)

SPECIFICATIONS

Parameters Measured
• Suspended Sediment Concentration (point measurement)

Concentration Range
• (1 to 30,000) mg·L⁻¹ for 7 µm silt
• < 20,000 mg·L⁻¹ for 200 µm sand

Mechanical and Electrical
• Dimensions: [Ø × L] 5.08 cm × 33.65 cm (2” × 13.25”)
• Weight (air): 0.5 kg (1 lbs)
• Weight (water): 0.22 kg (0.5 lbs) buoyant in water
• Power supply voltage: 11 VDC - 18 VDC
• Current draw: 100 mA
• Depth rating: 100 m
• 10 mm Ø ceramic transducer
• Sample rate 1 Hz (average of 1000 measurements)
• Sample volume: [Ø × L] 10 mm × 15 mm approximately, 55 mm from the transducer
• Impulse MCBH-8-MP SS endcap connector
• ABS plastic housing

Above: LISST-ABS mounted to a streamlined depressor wing that allows it to be towed at speeds in excess of 5 knots.

Right: The relative responsivity of optical turbidity meters contrasted with the LISST-ABS acoustic backscatter sensor.