

# LISST-DEEP

## Deep Submersible Particle Size Analyzer

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

The LISST-Deep 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. Optionally, SeaBird MicroCat 37-SIP CTD can be integrated for high precision conductivity, temperature, and depth measurement.



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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 Depth Sensor

**SPECIFICATIONS**

**Parameters Measured**

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

Optional: High precision conductivity, temperature, depth via SBE-37SIP.

**Technology**

Small Angle Forward Scattering

Laser: Solid State diode 670 nm,

Detector: 32-ring custom photodiode

Sample rate: Programmable, up to 1 size distribution per second

Optical Path: 50 mm standard

Optional shorter paths available with bolt-on Path Reduction Modules (PRM's) for higher maximum concentration

**Sediment Concentration**

Range: 0.5 mg-750 mg/L (approx. range based on 30 micron mean size particles)

**Sediment Size Distribution**

Number of size classes: 32 (log-spaced)

Size Range: 1.25 to 250 microns (Type B) or 2.5 to 500 microns (Type C)

**Mechanical and Electrical**

Dimensions: 4.95" diameter x 31.60" long (12.57 cm diameter x 80.3 cm long)

Weight: 38 lbs (17 kg) in air; 18 lbs ( 8 kg) in water

Depth Sensor: strain gauge type with 0.5 meter resolution, accuracy 1% FS

Depth Rating: 3000 meters

Serial Interface: RS232C , 9600 baud, High speed offload at 115K baud

Alkaline battery pack: four standard 9V batteries

External Power Input (optional): 12 VDC nominal, 10 to 24 VDC,

Standard Flash Memory Module: 128Mb ( 1,600,000 size distributions)

