

## Specifications of Oceanographic Sensors Used in the Hudson Shelf Valley

Parameter	Sensor	Manufacturer's Specification	Caveats
Conductivity (for Salinity <sup>3</sup> )	Sea Bird Conductivity Cell (SBE-04, SBE 16 or SBE-37) <a href="http://www.seabird.com">www.seabird.com</a>	Range: 0-7 S/m Accuracy: 0.0003 S/m Resolution: 0.00001 S/m	Sensitive to biofouling and sediment in cell
Temperature	Sea Bird Temperature Probe (SBE-4) <a href="http://www.seabird.com">www.seabird.com</a>	Range: -5 to 35°C Accuracy: 0.002°C Resolution: 0.0001°C	none
Light Transmission	Sea Tech <sup>4</sup> Transmissometer	Path Length: 25 cm Wave Length: 660 nm red LED Accuracy: +/- 0.05% Sensitivity: 0.4 mg/l per 0.1% decrease	signal loss due to biofouling
Turbidity	Seapoint Optical Backscatter Sensor <a href="http://www.seapoint.com">www.seapoint.com</a>	Wavelength: 880 nm Sensing Distance: < 5 cm Linearity: < 2% deviation 0-750 FTU Temperature Coeff: < 0.05%/°C Gain    Sensitivity    Range mV/FTU         FTU 100x   200                 25 20x    40                         125 5x     10                         500 1x     2                             ** (* ** output is non-linear above 750 FTU)	signal loss due to biofouling  Gain was fixed at 1x for the NY deployment.
Pressure	Paroscientific Digiquartz	Range: 0-130 m Using a period sampling method: Resolution: 0.57 mm Repeatability: 0.005% full scale	
Mean Current Profile	RD Instruments 300 kHz Workhorse Acoustic Doppler Profiler <a href="http://www.rdinstruments.com">www.rdinstruments.com</a>	As deployed for this experiment Profiling Range: 2-99 m Depth Cell Size: 2 m Velocity Range: ±5 m/s Accuracy as operated: 0.4 cm/s Compass Accuracy: ±2° Tilt Accuracy: ±0.5°	
Near Bottom Currents	Oceanographic Instrument Systems Benthic Acoustic Stress Sensor (BASS) <sup>6</sup>	Range: 0-120 cm/s Resolution: 0.03 cm/s Accuracy: 0.3 cm/s Cosine Response: 5% ±20° horiz. Tilt Accuracy: 0.1° Compass Accuracy: 0.5°	Current measurement accuracy depends on calibration technique, 0.3 cm/s was reliably achieved using dock calibrations.
Near Bottom Currents	Nobska Modular Acoustic Velocity Sensor (MAVS) <a href="http://www.nobska.net">www.nobska.net</a>	Current Range: 0-300 cm/s Resolution: 0.03 cm/s Accuracy: 0.3 cm/s or 1%,	Current measurement accuracy depends on calibration technique, 0.3 cm/s was reliably

		<p style="text-align: right;">whichever is greater</p> <p>Temperature  Range: -5 to +45°C  Resolution: 0.015°C  Accuracy: 0.25°C  Response: &lt; 1 sec</p> <p>Tilt  Range: 0-30°  Resolution: 0.1°  Accuracy: 2°</p> <p>Compass  Accuracy: ±2°  Resolution: 1°</p>	<p>achieved using dock calibrations. This is less of an issue with the MAVS than with the BASS.</p>
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Notes:

- 1) The mention of manufacturer's names does not constitute an endorsement by the USGS
- 2) Contact manufacturer directly for more detail
- 3) The accuracy of measurements such as Salinity is influenced by several sensors: conductivity, temperature and pressure
- 4) Sea Tech is no longer in business
- 5) No longer commercially available.
- 6) Contact Albert Williams III, Woods Hole Oceanographic Institution