



Specifications (firmware rev. 2)

SediMeter Sensor

Light emitted	945 nm (NIR)
Number of OBS detectors	36
Detector spacing	10 mm
Diameter	15 mm / 20 mm
Data output	Turbidity in 36+35 levels, bed level
Bed level resolution; precision	0.01 mm; 0.1 mm

Nephelometric Turbidimeters (90°)

ISO 7027 type	850 nm, NIR spectra
U.S. EPA type	White LED, visible spectra

Fluorescence Meters (90° and 180°)

Wavelength emitted, measured	367 nm (UVA), visible spectra
------------------------------	-------------------------------

Accelerometer and Conditions-Based Monitoring (CBM)

Range	± 2 g, ± 4 g, ± 8 g, ± 16 g
Rate	1, 10, 25, 50, 100, 200, 400 Hz
Samples/record @ bit depth	20 @ 10 bits, or 30 @ 8 bits
Trigger conditions for CBM	Vibration and/or free-fall

Logger

Internal memory	32,768 records
Timed measurement interval	1 second to 24 hours
Burst sampling	0.125 to 20 Hz, 1 to 255 rec's
Communication, charging	RS485; USB modem cable
Modes	Timed and/or triggered, with bursts in none, one, or both; simultaneous log and transmit

Battery

Type	Rechargeable Lithium
------	----------------------

Physical

	SM4	SM4P
Length, ca	77 cm	74 cm
Diameter, sensor	15 mm	20 mm
Diameter, holder tube	20 mm	Not Applicable
Application(s)	Monitoring	Monitoring Profiling

Specifications subject to change without prior notice. Precision refers to repeatability.

Lindorm, Inc.

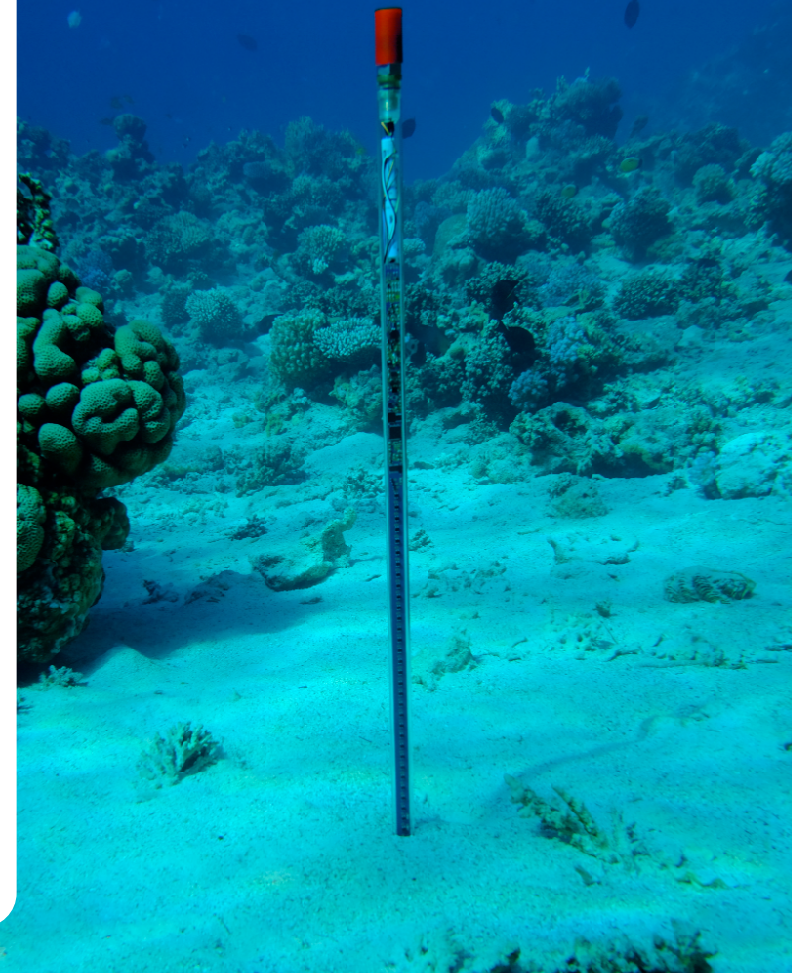
601 Plover Ave
Miami Springs, FL 33166
USA
+1-305 888 0762
www.lindorm.com
mail@lindorm.com

Representative:



SediMeter™ SM4 & SM4P

- Sediment and Turbidity Monitoring
 - Burst Sampling
- Timed and/or Triggered Logging
- Network Operation by Cable or Radio
- SediSond™ Sediment Profiling (SM4P)



Sediment Monitoring

The SediMeter™ is a fantastic instrument for sediment studies, combining bedload transport studies, sedimentation and erosion studies, suspended sediment transport studies, and now also sediment profiling in a single instrument.

Turbidity Array for Sea-Bed Conditions

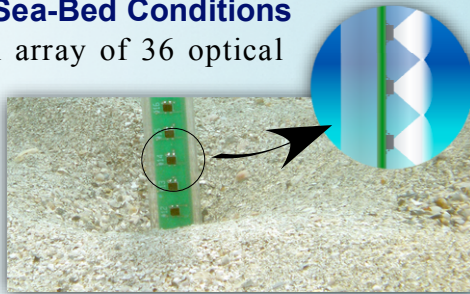
The key sensor is an array of 36 optical backscatter detectors (OBS) mounted inside a vertical transparent tube at 1 cm interval. The SediMeter also measures oblique backscatter, which helps in distinguishing air from sediment. The bed level of the sea floor is deduced from the OBS data. In fine sand this can give a bed level resolution of 0.1 mm, or 100 g/m². However, it is the graphical turbidity profile over time that provides the most value from the sensor.

Turbidimeter for Suspended Sediment Concentration (SSC)

The SM4 features an ISO style nephelometric turbidimeter suited for measuring turbidity up to 400 FTU. It reports data with 0.1 FTU resolution. It also features an EPA style turbidimeter with 1 FTU resolution.

Additionally, the SediMeter features 90° and 180° fluorescence meters that may detect chlorophyll, thus distinguishing algae from SSC. Two LEDs emit UV-A light, and the instrument measures visible light resulting from fluorescence. The same LEDs are used in an anti-fouling system, as a complement to copper tape.

The SediMeter also measures visible and NIR light (horizontally), and water temperature.

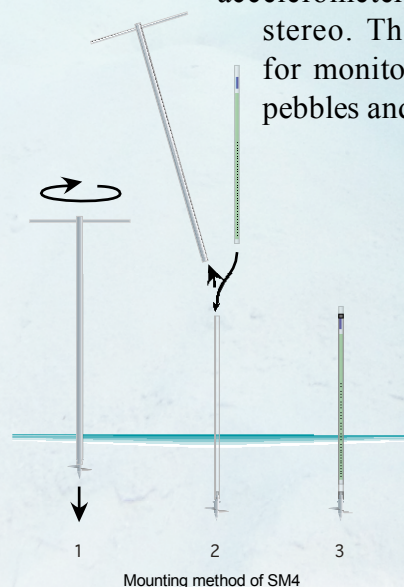


Burst Measurements

The SediMeter can measure up to 255 records in a rapid sequence. The rate can be set from once every 8 seconds, to 20 times per second. Bursts can be turned on individually for timed and CBM measurements.

Accelerometer and CBM

The 3D accelerometer is used to measure instrument tilt, but it has more tricks up its sleeve. It can detect vibration and free-fall events continuously (in a FIFO memory) and wake up the SediMeter to start measuring when one of two user-defined conditions are met. This conditions-based monitoring (CBM) can be selected on its own, or together with timed logging. Using 20 Hz bursts, continuous 400 Hz accelerometer data can be collected. It is also possible to listen to this accelerometer data, including in stereo. This might be useful for monitoring the motion of pebbles and cobbles.



Software and Networking

The free PC software is used to set up the instrument for stand-alone logging, for real time monitoring, for downloading, and for data analysis. It also allows for simultaneous storage of data in internal memory and on the PC, as well as providing it over the Internet. An RS485 network can be set up using cables or our SediLink radio modem. The communication protocol is open, thus allowing the integration in user networks.

The SM4 and the SM4P have exactly the same electronics and firmware, but they differ in the mechanical hardware. While the SM4 is preferred for longer deployments and in sea water, the SM4P is physically stronger and is preferred in settings with a higher energy level. Also, the SM4P has a dual purpose as sond for...

Sediment Profiling

SM4P can be used as a SediSond™ that is allowed to free-fall into the sediments, all the while recording a turbidity profile as well as the retardation, which is a proxy for sediment density. Furthermore, if left in place it can continue monitoring as a SediMeter.

