



SM5A

Specifications

SediMeter Sensor

Light emitted	945 nm (NIR)
Number of OBS detectors	48
Detector spacing	10 mm
Diameter	15 mm / 20 mm
Data output	Turbidity in 48+47 levels, bed level
Bed level resolution; precision	0.01 mm; 0.1 mm

Nephelometric Turbidimeters (90°)

ISO 7027 type	850 nm, NIR spectra
Improved laser compared to SM4	

3 Bands: OBS, nephelometric, and incident light

Measures both incident and reflected light at all 48 levels

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	4 @ 10 bits, or 6 @ 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 2 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
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Physical

	SM5	SM5A
Length, ca	77 cm	74 cm
Diameter, sensor	15 mm	20 mm
Diameter, holder tube	20 mm	Not Applicable
Application(s)	Monitoring	
Environment	Below and above water	

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

Lindorm, Inc.

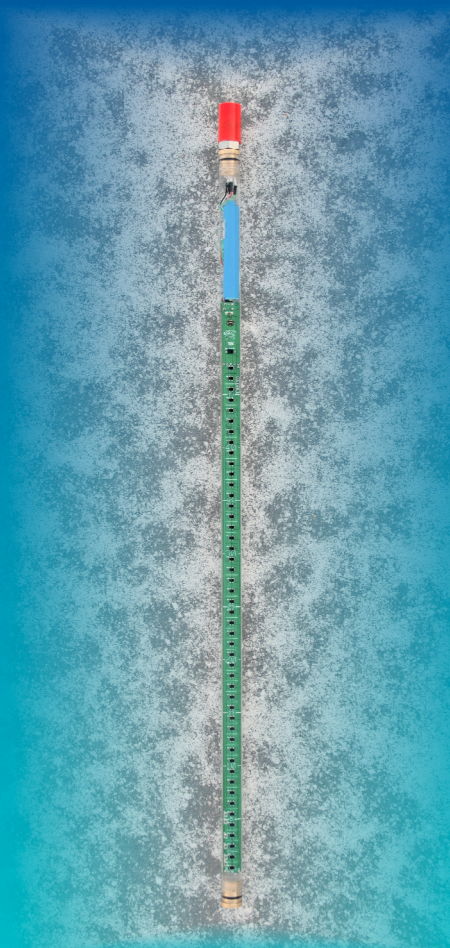
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Representative:



SediMeter™ SM5 & SM5A

- Sediment and Turbidity Monitoring
 - Also Works Above Water
 - 48 cm Long & Stackable
- Timed, CBM, Remote Logging
- Stabilized Laser Turbidimeter



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

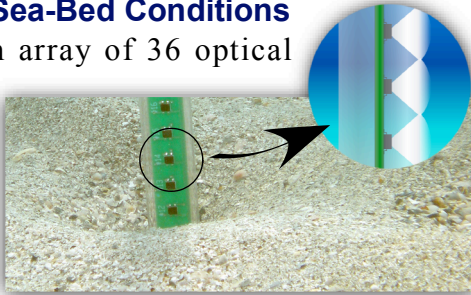
The key sensor is an array of 36 optical backscatter detectors (OBS) mounted inside a vertical transparent tube at 1 cm interval. The SediMeter also measures oblique backscatter, which helps in distinguishing air from sediment. The bed level of the sea floor is deduced from the OBS data. In fine sand 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 SM5 features an improved ISO style nephelometric turbidimeter suited for measuring turbidity up to 400 FTU. It reports data with 0.1 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 NIR light (horizontally), and water temperature.

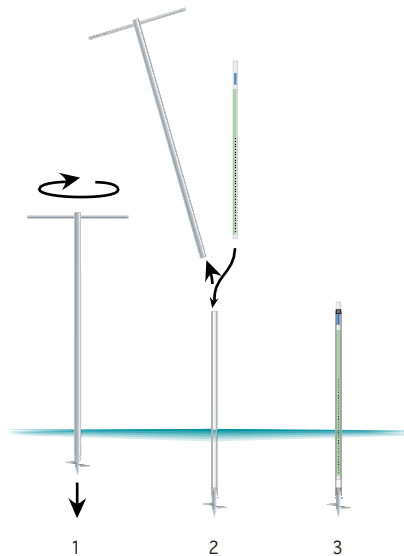


Burst Measurements

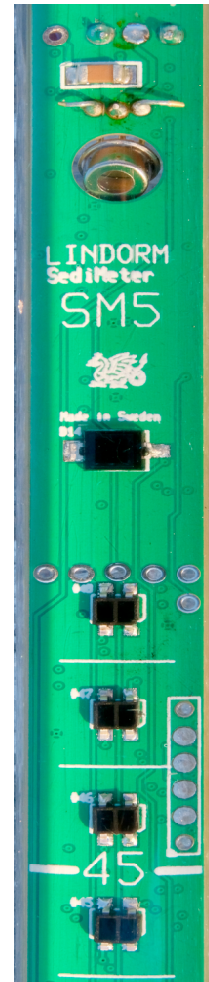
The SediMeter can measure up to 255 records in a rapid sequence. The rate can be set from once every 8 seconds, to 2 times per second. Bursts can be turned on individually for timed and CBM measurements.

Accelerometer and CBM

The 3D accelerometer is used to measure instrument tilt, but it can also detect vibration and free-fall events 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.



Mounting method of SM5



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 SM5 and the SM5A have exactly the same electronics and firmware, but they differ in the mechanical hardware. While the SM5 is preferred for longer deployments and in sea water, the SM5A is physically stronger and is preferred in settings with a higher energy level.

Stackable Sensor: >1 m long

There are four huge improvements in the SM5 compared to the SM4:

1. it measures incident light as well as reflected light enabling it to work also in daylight,
2. it measures in only one spot at a time making it virtually immune to ambient light,
3. it is slightly longer, 48 cm sensor length (up from 36 cm in SM2, SM3, and SM4), plus...
4. **several units can be mounted in a single tube**

This means that the SM5 could be used above and below water, day and night, and with lengths as long as required, e.g. 192 cm for a snow stick to measure firn on a glacier. The specifications are still preliminary, and for now only the 48 cm version is available for immediate order.

