



## OBS500

Turbidity Probe with Antifouling Features

# Accurate, Rugged

Patented\* ClearSensor antifouling features, dual backscatter sensors



A shutter on the OBS500 probe is opened (left) only during measurements to reduce fouling of the lens.

## Overview

The OBS500 is a submersible turbidity probe with active antifouling capabilities for better measurements in biologically active wa-

ter with both high and low turbidity. It outputs an SDI-12, digitally processed signal that many of our dataloggers can measure.

## Benefits and Features

- › Dual backscatter and sidescatter sensors used to measure turbidity
- › Patented\* ClearSensor Antifouling Method providing better measurements in biologically-active water
- › Shutter/wiper mechanism to keep lenses clean
- › Refillable biocide chamber for preventing fouling
- › Disposable plastic sleeve that facilitates clean up
- › Optional copper sleeve for additional protection (especially for sea water) or disposable plastic sleeve facilitates easy cleanup

## Technical Description

Design features of the OBS500 include the combination of a backscatter sensor (better at measuring higher turbidity) with a second sidescatter sensor (better at measuring lower turbidity). It has a shutter that is opened only during measurements, which reduces the time that algae or other organisms can cling to its optics.

To prevent biofouling and ensure better measurements, the OBS500 incorporates the ClearSensor Method. This method uses

a shutter/wiper mechanism to protect and clean the optics. With the ClearSensor method, a chamber is also filled with a biocide that continuously leaches out over the optics while the probe shutter is in the closed position.

Campbell Scientific offers a disposable, plastic sleeve that can make cleanup a snap, as well as a copper sleeve that can provide additional protection, especially in sea water.

\*U.S. Patent No. 8,429,952





The OBS500 has a plastic sleeve option that can simplify cleanup. The three above photographs show the sleeve being removed.

## Ordering Information

### Turbidity Sensors

When ordering the sensor, you must choose a wiper option. You will also need a cable to connect the sensor to a datalogger.

**OBS500** Smart Turbidity Meter with ClearSensor® Technology (case not included)

### Wiper Options (choose one)

- SW Standard Wiper
- BW Brass Wiper for biologically-active water

### Cables for Datalogger Attachment

Several field cable choices are offered for attaching the OBS500 to the datalogger. The cables differ in their length.

- 27785** OBS500 Field Cable with 5 m (16 ft) length
- 27786** OBS500 Field Cable with 10 m (32.8 ft) length
- 27787** OBS500 Field Cable with 20 m (65.6 ft) length
- 27788** OBS500 Field Cable with 30 m (98.4 ft) length

### Accessories

- 27225** OBS500 Carrying Case (holds 2)
- 27573** Test Cable with 2 m (6.5 ft) length. Connects sensor to a PC.
- 27803** OBS500 Copper Sleeve
- 27473** OBS500 Plastic Sleeve
- 20915** 5-Point Sediment Calibration (must send Campbell Scientific a dry sample of sedimentation from the water that will be monitored)



## Specifications

- › Dual Probe: 90° sidescatter and backscatter
- › Range: 0 to 4000 NTU
- › Active and Passive Antifouling: shutter, wiper, biocide, copper, optional removable sleeve
- › Accuracy:  $\pm 2\%$  of reading or 0.5 NTU (whichever is greater)
- › Temperature Range: 0° to 40°C
- › Temperature Accuracy:  $\pm 0.3^\circ\text{C}$
- › Emitter Wavelength: 850 nm
- › Power Requirements: 9.6 to 18 Vdc
- › Measurement Time: < 10 s
- › Maximum Submersion Depth: 100 m (330 ft)
- › Diameter: 4.8 cm (1.88 in)
- › Length: 27 cm (10.63 in)
- › Weight: 0.59 kg (1.30 lb)
- › Maximum Cable Length: >500 m (1640 ft)

### Power Consumption

- › Quiescent: < 200  $\mu\text{A}$
- › Measurement: < 40 mA
- › Communication: < 40 mA
- › Maximum Peak Current: 200 mA for 50 ms when shutter motor starts
- › Active Shutter Motor: < 120 mA

### Outputs

- › SDI-12: version 1.3, 1200 bps
- › RS-232: 9600 bps
- › Analog: 0 to 5 Vdc

Biological fouling on an OBS500 probe after 86 days of deployment in the Atlantic Ocean near Savannah, Georgia. A closed sensor (far left) and opened sensor are shown.