

ECO BB

Backscattering

The ECO BB measures scattering at 124 degrees, the angle determined as a minimum convergence point for variations in the volume scattering function (VSF) induced by suspended materials and water itself.* As a result, the signal measured by this meter is less determined by the type and size of the materials in the water, and is more directly correlated to the concentration of the materials. Conversely, the meter provides unparalleled accuracy, for any single-angle measurement, in determining the optical backscattering coefficient—an important parameter for remote sensing and in-water bio-optical applications.

*E. Boss and W. S. Pegau, "Relationship of light scattering at an angle in the backward direction to the backscattering coefficient," Applied Optics. 40(30):5503–5507 (2001).



Features

- Single channel Backscatter sensor
- Compact size
- Integrated self-logging
- Configurable output
- High precision and stability
- Optional integrated anti-fouling
- Available with turbidity (NTU) calibration



Optical

Wavelength options	470, 532, or 650 nm
Sensitivity	470: 0.003 m ⁻¹ 532: 0.003 m ⁻¹ 650: 0.003 m ⁻¹
Range	~ 0-5 m ⁻¹
Linearity (both)	99% R ²

Electrical

Digital output resolution	12 bit
Internal data logging	Optional
Internal batteries	Optional
Connector	MCBH6MP
Input	7–15 VDC
Current, typical	50 mA
Current, sleep	140 µA
Data memory	108,000 samples
Sample rate	User selectable to 8 Hz
RS-232 output	19200 baud
Analog output signal	0-5 v
Anti-fouling Bio-wiper™	Optional*
Bio-wiper™ cycle	140 mA

Options*

ECO BB(RT)—Provides analog or RS-232 serial output with 4,000-count range. This unit provides continuous operation when power is supplied.

ECO BB(RT)D—Provides the capabilities of the BB(RT) with 6,000-meter depth rating.

ECO BB—(Standard configuration) Provides the capabilities of the BB(RT) with periodic sampling.

ECO BBB—Provides the capabilities of the BB with internal batteries for autonomous operation.

ECO BBS—Provides the capabilities of the BB with an integrated anti-fouling Bio-wiper™.

ECO BBSB—Provides the capabilities of the BBS with internal batteries for autonomous operation.

Environmental

Temperature Range	0 - 30 °C
Depth Rating*	600 m (std) 6000 m (deep)

Mechanical

Diameter	6.3 cm
Length	12.7 cm (std) 17.68 cm (deep)
Weight in air	0.4 kg (std) 1.3 kg (deep)
Weight in water	0.02 kg (std) 0.75 (deep)
Materials	Acetal copolymer (standard) Titanium (deep)

*The limit depth for ECO with Anti-fouling Bio-wiper™ and Internal Batteries (models B, S and SB) rated to 300 m.