

ECO Triplet-w

Scattering/Fluorescence Combination

The ECO Triplet custom optical instrument is now available with active anti-biofouling. It features an evolutionary design that builds off the bio-wiper and faceplate available on the current ECO line. The optics of the ECO Triplet-w are arranged on a circumference on the face of the instrument. A copper faceplate covers all but the optics, and a central pivot three-armed copper and neoprene wiper clears the optics prior to sampling.



Features

- Addresses the need for multiple simultaneous scattering and fluorescence sensors for autonomous and unattended measurement platforms
- Performs a free space measurement and requires no pump. It accommodates a variety of deployment options
- Provides excellent precision, reliability, and overall performance at a fraction of the cost and size of similar instruments
- Ships with WET Labs' ECOView host software for communication and configuration
- Provides multiple measurements in a compact design, making the ECO Triplet unique among *in-situ* fluorometers

Options

Configuration options:

- Three scattering
- Two scattering, one fluorescence
- Three fluorescence
- One scattering, two fluorescence

Measurement options:

- Blue scattering
- Green scattering
- Red scattering
- Chlorophyll fluorescence
- CDOM fluorescence
- Phycocyanin fluorescence
- Phycoerythrin fluorescence
- Rhodamine fluorescence

Optical

Scattering wavelengths ¹ Sensitivity, all Range, typical	470, 532, 650, or 700 nm 0.003 m ⁻¹ 0–5 m ⁻¹
Chlorophyll EX/EM Sensitivity Range, typical	470/695 nm 0.025 µg/l 0–50 µg/l
CDOM EX/EM Sensitivity Range, typical	370/460 nm 0.28 ppb 0–375 ppb
Uranine EX/EM Sensitivity Range, typical	470/530 nm 0.15 ppb 0–300 ppb
Rhodamine EX/EM	518/595 nm
Phycocyanin EX/EM ²	630/680 nm
Phycoerythrin EX/EM ³ Sensitivity Range Linearity	518/595 nm 0.09 ppb 0–175 ppb 99% R ²

Mechanical

Diameter	8.08 cm
Length	Triplet-w: 22.1 cm Triplet-wB: 33.34 cm
Weight in air	Triplet-w: 1.25 kg Triplet-wB: 2.1 kg
Weight in water*	Triplet-w: 0.29 kg Triplet-wB: 0.43 kg
Materials	Acetal co-polymer

- ECO Triplet w—Ships with wiper for long term operation
- ECO Triplet wB—Ships with wiper and internal batteries for long term autonomous operation

Electrical

Digital output resolution	12 bit
Internal data logging	Yes
Internal batteries	Triplet-w: No Triplet-wB: Yes
Connector	Triplet-w: MCBH6MP Triplet-wB: MCBH6MP & MCBH3FS
Input	7–15 VDC
Current, non-wiping	60 mA
Current, wiper active	200 mA
Current, sleep	140 µA
Data memory	67,000 samples
Sample rate	User selectable to 4 Hz
RS-232 output	19200 baud

Environmental

Operation Temperature Range	0 - 30 °C
Depth Rating	600 m

1. Backscattering specifications are given in beam cp (m⁻¹) based on the regression of the response of the instrument relative to the beam c_p measured at the coincident wavelength using an ac-s spectrophotometer. Scale factors for backscattering incorporate the target weighting function and the solid angle subtended.
2. Measurement made with BB 3 dye.
3. Measurement made with Rhodamine WT dye.