

ECO Triplet

Scattering Fluorescence Sensor

The Triplet is a special-order, three optical-sensor instrument available in a user-defined configuration. The Triplet addresses the need for multiple simultaneous scattering and fluorescence sensors for autonomous and unattended measurement platforms.

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 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	630/680 nm
Phycocerythrin EX/EM Sensitivity Range Linearity (all)	518/595 nm 0.09 ppb 0–175 ppb 99% R2

Mechanical

Diameter	6.3 cm
Length	12.7 cm (std)
Weight in air	0.4 kg
Weight in water*	0.02 kg
Materials	Acetal co-polymer

- ECO Triplet—Capable of data logging and periodic sampling.
- ECO Triplet B—Provides the capabilities of the Triplet with internal batteries for autonomous operation.

Electrical

Digital output resolution	12 bit
Internal data logging	Yes
Internal batteries	Optional
Connector	MCBH6M
Input	7–15 VDC
Current, typical	60 mA
Current, sleep	140 µA
Data memory	77,000 samples
Sample rate	User selectable to 4 Hz
RS-232 output	19200 baud

Environmental

Pressure/temperature sensor	Optional
Temperature Range	0 - 30 °C
Depth Rating	600 m

*Backscattering specifications are given in beam c_p (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.