

ECO-Triplet Combination Sensor

The Triplet, one of the popular *Environmental Characterization Optics (ECO)* series tools, is a special-order, three optical-sensor instrument available in a user-defined configuration.

Configuration options:

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

Measurement options:

- Blue scattering
- Green scattering
- Red scattering
- Chlorophyll fluorescence
- CDOM fluorescence
- Phycocyanin or Phycoerythrin fluorescence
- Rhodamine fluorescence
- Uranine (fluorescein) fluorescence



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.

ECO Triplet Specifications

ECO Triplet—Capable of data logging and periodic sampling.

ECO Triplet B—Provides the capabilities of the Triplet with internal batteries for autonomous operation.

Optical		Mechanical	
Scattering wavelengths	470, 532, 660 nm	Diameter	6.3 cm
Sensitivity, 470 nm	$1.2 \times 10^{-5} \text{ m}^{-1} \text{ sr}^{-1}$	Length	12.7 cm (std)
Sensitivity, 532 nm	$7.7 \times 10^{-6} \text{ m}^{-1} \text{ sr}^{-1}$	Weight in air	0.4 kg (std)
Sensitivity, 660 nm	$3.8 \times 10^{-6} \text{ m}^{-1} \text{ sr}^{-1}$	Weight in water	0.02 kg (std)
Range, typical	$\sim 0.0024\text{--}5 \text{ m}^{-1}$	Pressure housing	Acetal copolymer
Chlorophyll EX/EM		Electrical	
	470/695 nm	Digital output resolution	12 bit
Sensitivity	0.01 $\mu\text{g/l}$	RS-232 output	19200 baud
Range, typical	0.01–50 $\mu\text{g/l}$	Sample rate	To 4 Hz
CDOM EX/EM	370/460 nm	Internal data logging	Yes
Sensitivity	0.18 ppb	Internal batteries	Optional
Range, typical	0.18–375 ppb	Connector	MCBH6M
Uranine EX/EM	470/530 nm	Input	7–15 VDC
Sensitivity	0.22 ppb	Current, typical	90 mA
Range, typical	0.22–175 ppb	Current, sleep	85 μA
Rhodamine EX/EM	540/570 nm	Data memory	50,000 samples
Sensitivity	0.04 ppb	Environmental	
Range, typical	0.04–175 ppb	Pressure/temperature sensor	Optional
Phycocyanin EX/EM	630/680 nm	Temperature range	0–30 deg C
Sensitivity	0.15 ppt	Depth rating	600 m (std)
Range, typical	0.15–300 ppt		
Phycoerythrin EX/EM	540/570 nm		
Sensitivity	0.04 ppb		
Range, typical	0.04–175 ppb		
Linearity (all)	99% R^2		

Specifications subject to change without notice.

REF – ECO-TRIPLER iss A APR 2009