



BB2F

WET Labs' popular *Environmental Characterization Optics (ECO)* series tools determine bio-optical and physical parameters within natural waters. These instruments are designed as a modular suite of sensors with special features for specific application support. The ECO series incorporates a common set of options with a single basic design to make the sensors ideal for a wide variety of deployments. Features include:

- Compact size
- Integrated self-logging
- Configurable output
- High precision and stability

WET Labs, Inc. manufactures a combination sensor for concurrent determination of chlorophyll fluorescence and optical backscattering at two wavelengths. Developed under the aegis of the National Oceanographic Partnership Program*, the BB2F addresses the need for operational biogeochemical sensors for autonomous and unattended measurement platforms. Arranged in a cloverleaf configuration, the sensor measures optical backscattering at 117 degrees at both 470 nm and 700 nm, and additionally chlorophyll fluorescence within the same volume. These combined capabilities make the *ECO* BB2F a powerful tool for bio-optical characterization of natural waters.

The *ECO* BB2F offers excellent performance and powerful capabilities—combined with size and pricing that's a fraction of other sensors and systems, this sensor is the preferred choice for a wide variety of research and monitoring applications.



* Development of the BB2F was, in part, funded under NOPP and the NSF for "Development of Optical Sensors for Autonomous and Unattended Use" in conjunction with Mary Jane Perry of the University of Maine and Charles Eriksen of the University of Washington.



ECO BB2F Specifications

Mechanical

<i>Diameter</i>	2.48 in (6.3 cm)
<i>Length</i>	5.0 in (12.7 cm) (standard)
<i>Weight in air</i>	0.95 lbs (0.4 kg) (standard)
<i>Weight in water</i>	0.05 lbs (0.02 kg) (standard)
<i>Pressure housing</i>	Acetal copolymer

Optical

<i>Scattering wavelengths</i>	470, 700 nm
<i>Sensitivity, blue</i>	$4.1 \times 10^{-5} \text{ m}^{-1} \text{ sr}^{-1}$
<i>Sensitivity, red</i>	$2.1 \times 10^{-6} \text{ m}^{-1} \text{ sr}^{-1}$
<i>Fluorescence</i>	ex/em: 470/700
<i>Accuracy (min.)</i>	0.005 m^{-1} @1 Hz
<i>Linearity</i>	99 % R^2

Environmental

<i>Temperature range</i>	0–30 deg C
<i>Depth rating</i>	600 m (standard)
<i>Pressure/temperature sensor</i>	optional

Electrical

<i>Digital output resolution</i>	12 bit
<i>RS-232 output</i>	19200 baud
<i>Internal data logging</i>	Y
<i>Internal batteries</i>	optional
<i>Connector</i>	MCBH6M
<i>Input</i>	7–15 VDC
<i>Current, typical</i>	80 mA
<i>Current, sleep</i>	85 μA
<i>Data memory</i>	50,000 samples
<i>Sample rate</i>	to 8 Hz

Specifications subject to change without notice.

Contact WET Labs about the availability of other ECO-instrument options.



ECO BB2F

Specifications Sheet

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Revision History

Revision	Date	Revision Description	Originator
1	02/08/02	Draft specifications sheet	C. Moore, W. Strubhar, D. Whiteman
A	02/13/02	Approved spec sheet (DCR 194)	C. Moore, W. Strubhar, D. Whiteman
B	05/01/02	Change references from SM to BB (DCR 219)	H. Van Zee
C	07/08/02	Add internal battery option to table (DCR 228)	H. Van Zee
D	10/15/02	Update specifications (DCR 248)	H. Van Zee
D1	9/10/03	Update specifications	H. Van Zee
E	11/24/03	Finalize updated specifications (DCR 338)	H. Van Zee
E1	6/16/04	Update specifications	H. Van Zee, I. Walsh
F	6/29/04	Updates approved (DCR 400)	H. Van Zee, I. Walsh
G	7/26/04	Correct scattering wavelength (DCR 404)	H. Van Zee, I. Walsh
H	1/27/05	Remove analog out spec (DCR 448)	H. Van Zee, I. Walsh