



FL

WET Labs offers the *Environmental Characterization Optics (ECO)* series, a modular suite of fluorometers to allow for a wide variety of applications and deployments. Standard ranges are given below, others are available.



- Ships with *ECOVView Host software*
- Optional integrated *Bio-wiper™* and/or copper faceplate for anti-fouling
- Optional integrated self-logging; 1 Mb memory
- Full ocean depth model available

Chlorophyll-a

Chlorophyll-a fluorescence serves as a valuable indicator of active phytoplankton biomass and chlorophyll concentrations in waters. This measurement is used for tracking biological variability and abundance in the water column.

Colored Dissolved Organic Matter

The CDOM *ECO* allows you to obtain CDOM fluorescence across a wide range of environments, from mangrove swamps to oligotrophic blue water.

Uranine (fluorescein) & Rhodamine

The qualities of the *ECO* line are now available for flow and dye tracing studies. Specify measurement sensitivity when ordering. Detection ranges from parts per trillion to parts per million.

Phycoerythrin

Detection of the cyanobacteria fraction of the phytoplankton community is now easier and less expensive with the introduction the phycoerythrin meter, which allows for detection of red cyanobacteria fluorescence.



ECO FL Specifications

- **FL(RT)**—Provides analog or RS-232 serial output with 16,300-count (approximate) range. This unit provides continuous operation when powered.
- **FL(RT)D**—Provides the capabilities of the FL(RT) with 6,000-meter depth rating.
- **FL**—Provides the capabilities of the FL(RT) with periodic sampling.
- **FLS**—Provides the capabilities of the FL with an integrated anti-fouling *bio-wiper*™.
- **FLB**—Provides the capabilities of the FL with internal batteries for autonomous operation.
- **FLSB**—Provides the capabilities of the FLS with internal batteries for autonomous operation.

Mechanical

<i>Diameter</i>	2.48 in (6.3 cm) (std)
<i>Length</i>	5.0 in (12.7 cm) (std)
<i>Length</i>	10.1 in. (25.6 cm) (deep)
<i>Weight in air</i>	0.9 lbs (0.4 kg) (std)
<i>Weight in air</i>	2.86 lbs (1.3 kg) (deep)
<i>Weight in water</i>	0.05 lbs (0.02 kg) (std)
<i>Weight in water</i>	1.6 lbs. (0.75 kg) (deep)
<i>Pressure housing</i>	Acetal copolymer (std)
<i>Pressure housing</i>	Titanium (deep)

Optical

Chlorophyll-a	ex/em: 470/695 nm
<i>Sensitivity</i>	0.01 µg/l
<i>Range, typical</i>	0.01 to 125 µg/l
CDOM	ex/em: 370/460 nm
<i>Sensitivity</i>	0.09 ppb
<i>Range, typical</i>	0.09 to 500 ppb
Phycoerythrin	ex/em: 540/570 nm
<i>Sensitivity</i>	0.01 ppb
<i>Range, typical</i>	0.01–230 ppb
Uranine	ex/em: 470/530 nm
<i>Sensitivity</i>	0.07 ppb
<i>Range, typical</i>	0.07–1200 ppb
Rhodamine	ex/em: 540/570 nm
<i>Sensitivity</i>	0.01 ppb
<i>Range, typical</i>	0.01–230 ppb
<i>Linearity (all)</i>	99 % R ²

Electrical

<i>Digital output resolution</i>	14 bit
<i>RS-232 output</i>	19200 baud
<i>Analog output signal</i>	0–5 V
<i>Internal data logging</i>	optional
<i>Internal batteries</i>	optional
<i>Connector</i>	MCBH6M
<i>Bio-wiper™ cycle</i>	140 mA
<i>Input</i>	7–15 VDC
<i>Current, typical</i>	80 mA
<i>Current, sleep</i>	85 µA
<i>Data memory</i>	65,000 samples
<i>Sample rate</i>	to 8 Hz
<i>Anti-fouling bio-wiper™</i>	optional

Environmental

<i>Temperature range</i>	0–30 deg C
<i>Depth rating</i>	600 m (std)
<i>Depth rating</i>	6000 m (deep)
<i>Pressure/temperature sensor</i>	optional

Specifications subject to change without notice.



ECO FL

Specification Sheet

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Revision History

Revision	Date	Revision Description	Originator
A	3/08/00	Begin revision control	H. Van Zee
B	10/26/00	Correct spec info for DFLB (DCR 69)	H. Van Zee
C	1/16/01	Change AFLT to AFLD (DCR 80)	H. Van Zee
D	5/21/01	Correct input voltage minimum (DCR 109/110)	H. Van Zee
E	1/23/02	Remove "new" reference (DCR 190)	H. Van Zee
F	3/13/02	Correct DFLS/DFLB weights (DCR 201)	H. Van Zee
G	4/16/02	Add max. samples (DCR 215)	D. Whiteman
H	5/1/02	Change reference to AFLx (DCR 218)	H. Van Zee
I	7/8/02	Add battery option to spec table (DCR 228)	H. Van Zee
J	10/15/02	Update specification table (DCR 248)	H. Van Zee
K	11/12/02	Add analog capability (DCR 254)	I. Walsh
L	2/24/03	Replace "shutter" with "bio-wiper™" (DCR 280)	H. Van Zee
M	3/26/03	Correct reference from FLD to FL(RT)D (DCR 287)	A. Derr
N	11/24/03	Add other measurement parameters (DCR 340)	H. Van Zee
O	5/11/04	Add optical parameters (DCR 390)	I. Walsh
O1	6/16/04	Update specifications	H. Van Zee, I. Walsh
P	6/29/04	Updates approved (DCR 400)	H. Van Zee, I. Walsh
Q	8/26/04	Add deep unit specs (DCR 419)	H. Van Zee
R	9/20/04	Correct CDOM sensitivity value (DCR 427)	I. Walsh
S	2/7/05	Correct phycoerythrin paragraph (DCR 449)	H. Van Zee
T	9/26/06	Update photo and specifications (DCR 507)	M. Johnson, H. Van Zee