



**EnviroTech Instruments**

---

# EcoLAB 2

## Multi-Channel Analyzer System



### *New generation multi-nutrient analyzer*

**EcoLAB 2** is the latest model multi-channel submersible nutrient/chemical analyzer, a new, redesigned & improved version of our 1 - 4 channel submersible system. EcoLAB 2 incorporates all new detectors, fluidic drive system, electronics and embedded software, building further on the original ground-breaking design. Benefits include increased measurement range, improved detection, more methods and new mooring systems. Equally at home in marine and inland waters the standard version (left) is designed for near coastal, estuarine, river & lake applications and the open ocean version is rated to 4000 m. EcoLAB can be readily integrated within monitoring packages and surface buoy systems. Parameters include nitrate, phosphate, ammonia and silicate.

### **EnviroTech Instruments LLC**

1517 Technology Drive, Suite 101  
Chesapeake, VA 23320  
Tel: (757) 549-8474  
Fax: (757) 410-2382  
Email: [mail@envirotechinstruments.com](mailto:mail@envirotechinstruments.com)

## Benefits

- Multi-nutrient analysis
- Study of episodic events and complex signals
- Precise high frequency nutrient data
- Cost-effective enhancement to traditional monitoring programs

## Applications

- Phytoplankton blooms
- Eutrophication studies
- TMDL assessment
- Monitoring run-off
- Detection of environmental change



## Description

EcoLAB performs individual chemical reactions using whole water samples using standard & approved analytical methods that have been specially adapted for long-term in-situ use and discrete analysis. EcoLAB is capable of analyzing 1 to 4 chemistry “channels” including nitrate, phosphate, ammonia, silicate and others. The system is sensitive, very resilient to biofouling, incorporates regular standardization & self-cleaning during deployment and allows the inlet filter to be back-flushed - all very important advantages over flow-analyzers and optical systems. EcoLAB is fully user programmable with the result from each analysis being stored in non-volatile memory for data extraction after recovery and/or telemetered in real-time. When deployed EcoLAB is dormant between samples in a low power state and when active only requires one sample to provide a result minimizing the power budget. EcoLAB’s pressure balanced chemical system also avoids “one-atmosphere” depth limitations and prevents problems with air bubbles in the system as all chemical circuitry external to the instrument and so at ambient pressure. Only the motors and electronics are contained in sealed pressure housings and these housings may be either air filled for shallow operation (200 m) or oil-filled if greater depth capability is required.

## Specification

	Nitrate	Silicate	Phosphate	Ammonium
Range (mg/L)	0-5 mg/L NO <sub>3</sub> /N	0-6 mg/L SiO <sub>4</sub> /Si	0-0.8 mg/L PO <sub>4</sub> /P	0-4 mg/L NH <sub>4</sub> /N
Wavelength (nm)	543	810	880	N/A
Precision (% range)	2%	3%	3%	1%
Sensitivity (mg/L)	0.003	0.003	0.003	0.003
Endurance (max)	6 months	2 months	2 months	4 months
Dimensions	12.2” (310 mm) diameter x 23.2” (590 mm) in housing			
Weight	Air: 55 lbs (25 kg) - Water: 8.8 lbs (4 kg)			
Depth capability	200 m standard - 4000 m optional			
Power use	Analysis: 260 mA / Sleep: 100 µA / Mean: 22 mA (for 8 weeks)			
Communications	RS232 - ASCII - 19.2 kbaud (N81)			
Power supply	12 volt DC (range 9.0 - 15.5 volts)			
Materials	uPVC & polypropylene (housings), titanium (fittings)			
Scope of Supply	EcoLAB main instrument, mooring frame, power & comms cable, battery pack, toolkit, spares kit, software, scientific transit case			
Optional extras	Telemetry links, external sensors (e.g. temperature & fluorescence) training course			