



EnviroTech Instruments

MicroLAB

Compact Nutrient Monitor



Applications

- ◆ Run-off monitoring & storm events
- ◆ TMDL requirements
- ◆ Outfall assessment
- ◆ Harmful algal bloom studies
- ◆ Real-time nutrient data

Benefits

- ◆ Small easy manageable size
- ◆ Cost effective
- ◆ Proven technology
- ◆ Precise measurements
- ◆ Low detection limit
- ◆ Wide dynamic range
- ◆ Easy to use
- ◆ Multiple nutrients
- ◆ No waste to the environment
- ◆ Low reagent usage
- ◆ Two year warranty

Nutrient Monitoring Made Easy

MicroLAB is a fifth generation nutrient monitoring system based on over a decade of experience and designed with ease of use, reliability, cost and size mind. MicroLAB features a new easy-load reagent bag carousel, integral waste collection, internal battery pack and reliable long-term high-precision measurement all in one small package. Available for nitrate, phosphate, silicate and ammonia analysis in multiple ranges for each parameter. Based on EPA standard chemistry methods our field proven automated single analysis technique produces very little waste and the waste collector eliminates any discharge into the environment.

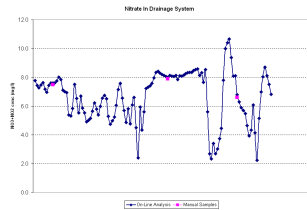
EnviroTech Instruments LLC

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



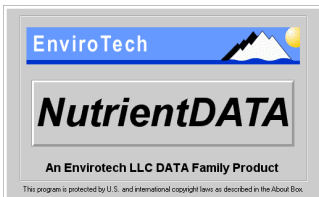
Description

Modular detectors can be quickly changed by the user allowing MicroLAB to be easily prepared for deployments in a wide spectrum of applications where low detection limits or extended ranges are required. Options include a chlorophyll probe, integral temperature and depth along with built-in interfaces for industry leading multi-probes. MicroLAB is telemetry-ready with radio and board add-on systems available. The sample interval is fully programmable and continuous on-board standard analysis and self-calibration provide high integrity data. Our technology has been proven to be resilient to fouling, growth and interferences from organic material found in rivers, lakes and coastal waters.

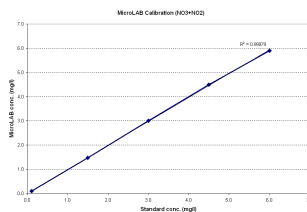


NutrientDATA software allows the users to easily prepare, bench test and program MicroLAB with single click commands in its default "monitor mode". The software also extracts and processes stored data. For demanding applications MicroLAB can be instantly put into "research mode" giving the user complete customizable control of both chemistry routines and analysis cycles.

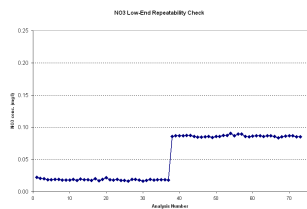
MicroLAB's rugged design incorporates PVC, TEFLON and titanium for ultimate resilience to corrosion. This and a standard 200 m (650 feet) depth rating allows MicroLAB to go where other devices cannot and measure nutrients throughout the growth zone, making MicroLAB equally at home in freshwater, estuarine and saltwater environments. MicroLAB's firmware is serial port upgradeable and frequent free updates include new features and external sensor drivers.



Specification



	Nitrate	Silicate	Phosphate	Ammonium
Detector	Colorimeter	Colorimeter	Colorimeter	Fluorimeter
Chemical methods	4500-NO3	EPA 366.0	EPA 365.5	Aminot, et al
Ranges (mg/l)	0 - 13	0 - 4	0 - 1.5	0 - 4
(µMol)	0 - 960	0 - 120	0 - 48	0 - 300
Pathlengths (mm)	2, 5, 10, 20	2, 5, 10, 20	2, 5, 10, 20	N/A
Wavelength (nm)	543	810	880	
Precision (% range)	2%	3%	3%	2%
Detection Limit (mg/l)	0.002	0.002	0.002	0.002
(µMol)	0.15	0.06	0.06	0.15
Endurance	2 months (typical) 4 months (max)	1 month (typical) 2 months (max)	1 month (typical) 2 months (max)	1 month (typical) 2 months (max)
Operating environment	Freshwater, brackish, estuarine and marine waters. (Also operates in air for streamside and underway monitoring)			
Dimensions	8.5" (215 mm) diameter x 17.75" (450 mm)			
Weight	22 lbs / 9.9 kg			
Depth capability	200 m / 650 ft standard			
Battery life	50 days (nitrate / 60 min sample interval / 20 °C) 46 days (nitrate / 60 min sample interval / 0 °C)			
Communications	RS232 - ASCII – 300 baud to 115.2 kbaud (19,200 baud default) SDI-12 interface			
Memory	4 Mb non-volatile flash memory			
Power supply	12 volt DC (range 9.0 - 15.5 volts) at 27 mA mean. Internal battery as standard. External power options (e.g. solar panels).			
Materials	PVC (housings) & titanium (fittings)			
Reagents	Payload: 4500 ml (max) Usage: 1.3 ml / sample (nitrate) – Waste 3.4 ml / sample total volume Samples: 1200 (typical)			
Optional extras	Deployment frame, chlorophyll probe, temperature sensor, depth transducer, telemetry systems, external power (solar), training.			



MicroLAB is provided with a standard limited **TWO-YEAR WARRANTY**, free firmware, software and chemistry method upgrades for the life of the product and backed by a over a decade of experience in automated remote nutrient analysis.