

ChemFIN Nutrient Analyzer



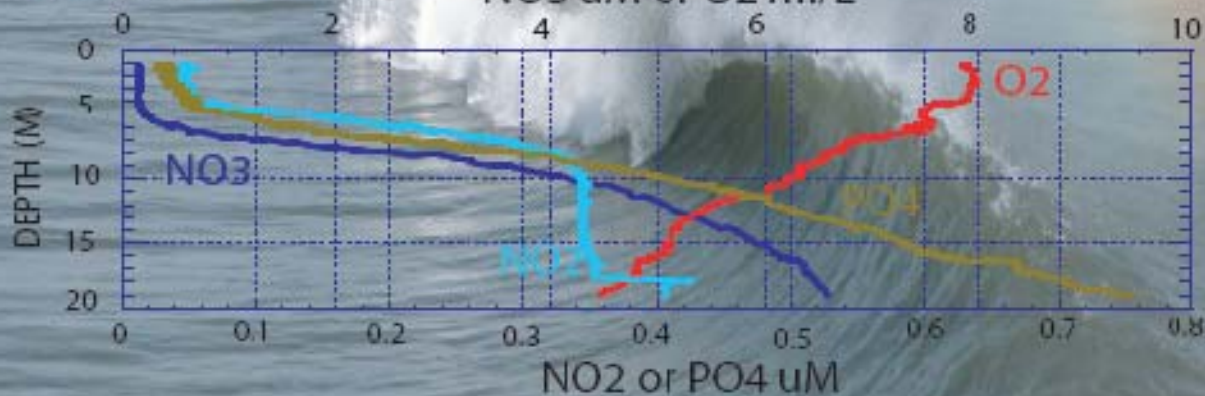
Autonomous Profiling Nutrient Analyzer

- Single Channel Analyzer
- Multi-Chemical Capability
- Fast Response - Trace Concentrations
- Real-Time Data
- Programmable Controller
- Multi-Platform Adaptability

Autonomous or Cabled Multi-Mode Operation

- Autonomous Hi-Res Moored Vertical Profiling
- Continuous Underway Surveying
- Intermittent Long-Term Moored Sampling

NO₃ μ M or O₂ ml/L



Nitrate, Nitrite, Ammonium, Phosphate, Silicate, Iron



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ChemFIN SPECIFICATIONS

Number of Analytical Channels	1 or 2 channel instrument				
Nutrients	Nitrite	Nitrate	Phosphate	Silicate	Ammonium
Wavelengths (nm)	A 540	A 540	A 820	A 820	F 370/460 ex/em
Path lengths (cm)	1, 5	1, 5	1, 5	1, 5, 15	N/A
Range-1 (µM)	0.05-50	0.05-50	0.05-50	0.15-170	0.01-15
Range-5 (µM)	0.02-11	0.02-11	0.02-14	0.05-45	0.1-100
Precision (% range)	2	2	2	3	1

Deployment Mode	Continuous	Intermittent Profiling	Intermittent Sampling
Endurance	~2 months (1 reading/sec)	~2,340 Profiles 6 profiles/day for 13 mo. (from 200 m depth – 33 min ea)	~10,080 Measurements (48/day for 7 mo.) Fixed Depth
Reagent volume	~2 Liter	~2 Liter	~2 Liter
Estimated Battery Usage (Amp-Hr/Day)	5.5	3.3	1.7

Power Supply/Range	12 volt DC / 12-72 volt DC
Power consumption	Analysis: 3 W, Sleep: 33 µW
Dimensions	ChemFIN L: 13" Dia.: 4.0", Reagent Reservoir. L: 6.0" Dia. 6.0"
Weight	6.4 lbs. Air, Neutral in Water:
Displacement	165 cubic in (2.7 liters)
Depth Capability	600 meters, pressure compensated
Instrument Control	Programmable microcontroller with 8 Gb compact flash memory
Communications	RS232/485-ACII, 9.6-115.2 kBAUD, Ethernet
Materials	Non metallic, Acetal
Multi-mode Deployment Platforms	Ship-deployed vertical or towed profilers, autonomous moored profilers, autonomous underwater vehicles, or fixed-depth on piers or moored buoys.
Optional Capabilities and Extras	Real Time Data Telemetry (Acoustic/RF/cellular/Wi-Fi/Iridium/LAN External server with local FTP site, web data display Integrated peripheral sensors (CTD, O2, Chl, etc)

A time series of five hourly high-res vertical nitrate and temperature profiles that were obtained in Monterey Bay, CA with a SubChem nutrient analyzer deployed on an autonomous bottom-up profiler.

