



Dual Chemistry NP Sensor

Nitrate & Phosphate Detection



**Cost Effective Solution to Real-Time,
“Hands-Free” Measurement of Dual Chemistry
Nitrate & Phosphate (NP) Concentrations**

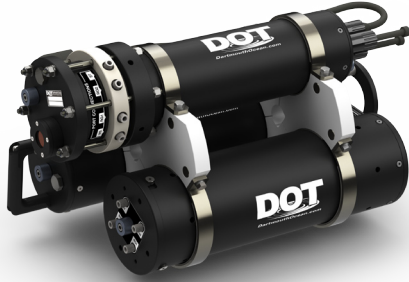
Nitrate & Phosphate Sensor C1000-200 Features at a Glance:

- Lab-on-Chip (LOC): Microfluidic wet-chemistry sensor featuring patented and proprietary “Inlaid Optical Cell Technology™”*
- Provides expanded insights into the water sample chemistry not available from a single chemical analysis
- Reduces reagent consumption, decreases reaction time, and reduces power draw
- Self-Powered and self-logging for real time measurement (data streaming available)
- Technology Flexibility: An excellent contender for towed systems, un-crewed vehicles, gliders, ROVs, Voluntary Observation Ships, buoys, and profiling floats
- Customizable and configurable to fit into most platforms

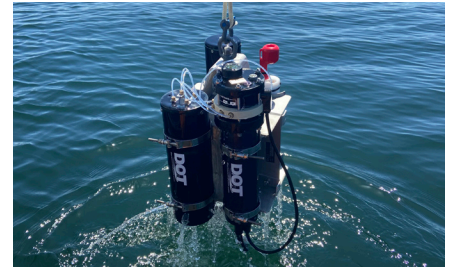


Nitrate & Phosphate Sensor - In-Situ Multi-Nutrient Detection

Autonomous



- Nitrate & Phosphate Sensor
- Reagent Housing
- Battery Housing
- Tri-mount Bracket
- Easy transport and deployment
- Sample time:
 - 1 - 2 min @ 20 °C
 - 20 min @ 4 °C



Autonomous deployment on a seafloor/river bed deployment frame

Sensor Payload

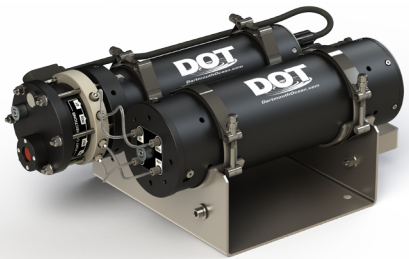


- Nitrate & Phosphate Sensor
- Reagent Housing
- 1000 samples per reagent load
- Reagent bags inside housing
- Requires power from platform
- Flexible mounting configurations



Sensor and Reagent Housing deployed on a V-Wing 1220, powered from EM tow cable

Platform-Mounted



- Nitrate & Phosphate Sensor
- Reagent Housing
- Dual Mount Bracket
- Typical configuration on platform with power



Nitrate & Phosphate Sensor and Reagent Housing mounted on Multi-Sensor Seafloor Platform (MSSP) by COVE

Specifications

Weight		Dimensions:	Sensor:	Reagent:
- In Air	5.0 kg (11.0 lbs)	- Diameter	89 mm (3.5 in)	111 mm (4.4 in)
- In Salt Water	1.8 kg (4.0 lbs)	- Length	442 mm (17.4 in)	349 mm (13.8 in)
Sample Rate:	1 / 15 minutes to 1 / day (programmable)	Depth Rating:	200 m (656 ft)	
Intake Filter:	25mm - 0.45µm pore size (default)	Power Draw:	1 W (typ) to 10 W (max)	
Reagents:	<ul style="list-style-type: none"> • NIST traceable standards • Blue method (modified EPA 365.2) standard • Modified Griess Assay 	Data Output:	• Ethernet, RS232	
Concentration Range:	10* µM - 200 µM (0.6 - 12.5 mg/L) [nitrate ^a] 0.15 µM - 10 µM (0.014 - 0.95 mg/L) [orthophosphate ^b] 0.005 mg/L - 0.3 mg/L [orthophosphate-P]	Options:	<ul style="list-style-type: none"> • Mounting brackets • Software visualization • Real time data output • External battery case (Lithium Primary) • Hard, floodable reagent case 	

* Improved limit of detection with longer sampling time. Specifications subject to change.

^a Nitrate concentrations in seawater can reach up to 2.4 mg/L, mostly due to nitrification processes, but can exceed these levels from nutrient runoff.

^b Canadian provincial restrictions range from 0.1 - 1 mg/L (total phosphorous) and less than 0.5 mg/L orthophosphate in effluent.



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