

SUNA V2

UV NITRATE SENSOR



Overview

The SUNA V2 is the ultimate solution for chemical-free, real-time nutrient monitoring. This sensor measures nitrate with industry leading accuracy and stability over a wide range of environmental conditions (including extremely turbid and high fDOM conditions), from blue-ocean nitraclines to storm runoff in rivers and streams.

The SUNA V2 incorporates the proven MBARI-ISUS nitrate measurement technology, which is based on the absorption characteristics of nitrate in the UV light spectrum.

Features

- Accuracy and stability over a wide range of environmental conditions*
- Adaptive sampling intelligence
- Universal real-time nitrate processing algorithm
- Serial data output and a 500 meter depth rating
- Titanium housing
- User-friendly UCI software (Windows and Mac OS X compatible)
- Real-time temperature-salinity correction available (0-35°C, 0-40 PSU); requires external T/S data.

Class based freshwater calibration stock. Specific calibration must be added (freshwater, seawater, high range freshwater).

Optional Features

- Reduced 5 mm pathlength for high turbidity environments
- Active fouling control with built in wiper
- Seawater, Freshwater, and Class-based Freshwater calibration options
- Internal data logging and scheduling with 2 GB memory
- SDI-12 interface
- USB communications

Applications

- Long-term nutrient monitoring
- Coastal water profiling
- Water quality monitoring
- Pollution detection

Field Specifications

The specifications below represent the expected performance of the instrument when deployed in the field. Under controlled circumstances in a lab, we would expect the instrument to outperform these specifications.

We have chosen to display field specifications to give our users a true measure of how Sea-Bird Scientific instruments perform in harsh environments and applications. It is critical to keep this in mind when comparing specifications with instruments from other manufacturers.

Performance

PATHLENGTH	FRESH WATER	SEAWATER
5 mm	4 μM	4 μM
10 mm	2 μM	2 μM
Limit of Detection	0.3 μM	2.4 μM
Limit of Quantification	1.0 μM	8.0 μM
Nitrate Measure Precision (at 3σ)	0.3 μM	2.4 μM
Drift (per hour of lamp time)	<0.3 μM	<1.0 μM

Optics

Pathlength	10 mm & 5 mm (high turbidity option)
Wavelength Range	190-370 nm
Lamp Type	Continuous Wave, Deuterium Lamp
Lamp Lifetime	900 h

Electrical

Input Voltage	8-18 VDC
Power Consumption	7.5 W (0.625 A at 12 V) nominal

Mechanical

Material	Titanium
Depth Rating	500 m
Weight	5.1 kg
Displacement	1749 cm ³

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Hydro-Wiper



The Hydro-Wiper is an external anti-fouling system fully integrated with the SUNA V2 nitrate sensor. The Hydro-Wiper keeps the SUNA V2 sample windows clean for several months and is specifically intended for use in freshwater and coastal systems.

Anti-fouling Guard



The anti-fouling guard provides passive fouling prevention through the release of copper ions that inhibit biological growth in the area. It is intended for use in blue-ocean applications with low-to-no suspended sedimentation and/or low-to-no turbidity.

Flow Cell



The flow cell adapts the SUNA V2 for flow-through operations on shipboard underway systems, moorings with pumped flow, or for laboratory testing and calibration.



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