SEA-BIRD SCIENTIFIC

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SUNA V2
UV Nitrate Sensor

The SUNA V2 is the ultimate solution for 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 CDOM 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.

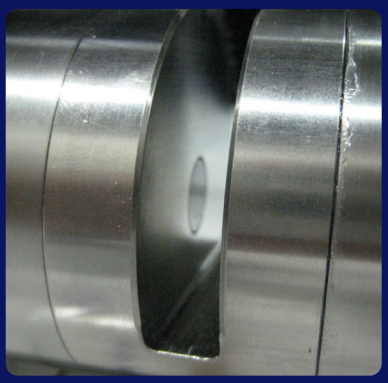
Features

- 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).

Applications

- Long-term nutrient monitoring
- Coastal water profiling
- Water quality monitoring, pollution detection



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

Accuracy*

Pathlength	Class-based fresh water	Fresh water	Seawater
5 mm	0.063 mgN/L (4.5 µM)	0.056 mgN/L (4 µM)	0.056 mgN/L (4 µM)
10 mm	0.035 mgN/L (2.5 µM)	0.028 mgN/L (2 µM)	0.028 mgN/L (2 µM)

*Accuracy varies by nitrate concentration range. Best performance shown. See User's Manual for detailed accuracy specifications.

Precision

	Fresh water or Seawater with T-S Correction	Seawater without T-S Correction
Precision (at 3σ)	0.3 µM	2.4 µM
Limit of Detection	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

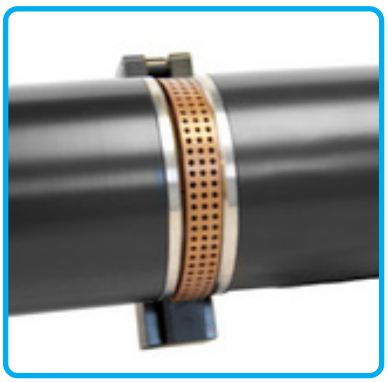
Mechanical

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

Hydro-Wiper

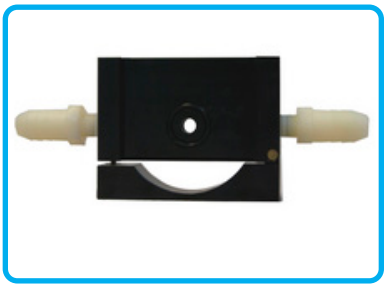
The Hydro-Wiper is an external anti-fouling system fully integrated with the SUNA V2 nitrate sensor. The Hydro-Wiper keeps the SUNA V2 sample windows clean for several months and is specifically intended for use in freshwater and coastal systems.

Anti-fouling Guard



The SUNA V2 anti-fouling guard is a semi-circular piece of perforated copper attached to a plastic armature that fits into the sample chamber. It provides passive fouling prevention through the release of copper ions that inhibit biological growth in the area. The anti-fouling guard is a reliable and affordable approach to increase deployment time and decrease operating costs. It is intended for use in blue-ocean applications with low-to-no suspended sedimentation and/or low-to-no turbidity.

Flow Cell



The SUNA V2 flow cell is designed to adapt the SUNA V2 for flow through operations on moorings with pumped flow, ship-board underway systems or for laboratory testing and calibration. The flow cell attaches to the SUNA V2 sample chamber and tightly seals against the optical chamber windows. Nylon barbed fittings are provided to connect the flow cell to available pumped flow.

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