

## ISUS V2

Satlantic's ISUS V2 nitrate sensor, the latest version of the original MBARI-ISUS nitrate sensor, now has faster sampling rates, lower power consumption and more flexible scheduling capabilities. The original chemical-free design has not changed and still overcomes the traditional challenges associated with nitrate analysis in coastal, estuarine and freshwater environments. ISUS V2 provides easy, accurate, and continuous nitrate concentration measurements that are essential to the study of physical, chemical, and biological processes.

The original ISUS sensor was developed by the Monterey Bay Aquarium Research Institute (MBARI) in California and is based on the absorption characteristics of inorganic compounds in the UV light spectrum. Chemicals absorb light in the UV and each has a unique absorption spectrum. By using advanced UV Absorption Technology, the ISUS instrument yields 256 channels of the nitrate absorption spectrum and computes the concentration directly.

- Real-time Nitrate, Requires no reagents
- Fast sample frequency
- Low power, compact size
- High data precision and accuracy
- Unique bio-fouling guard for long term deployments
- Analog port for easy integration with CTD
- Flexible scheduling capabilities

The ISUS has been successfully deployed in a range of environments and operational modes and has the proven stability, sensitivity, and endurance to operate for extended periods of time with low maintenance.

**Profiling system** - High-resolution nutrient profiles, which were previously unattainable at this rate, have been used in the field to gain insight into nutrient structures.

**Fixed platform/moorings** - ISUS V2 has a flexible sampling schedule, internal data storage capacity, and is easily integrated into a monitoring program.

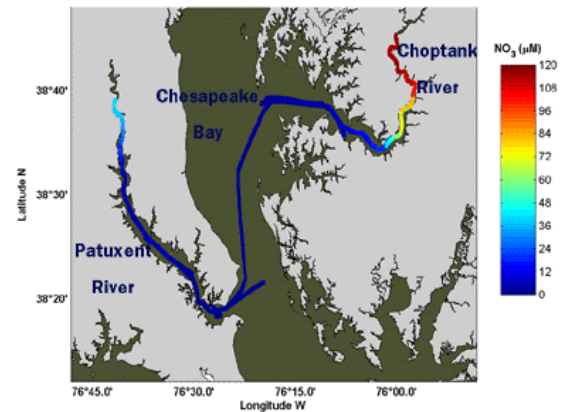
**Towed vehicles** - The ISUS V2 can be integrated in a towed vehicle where the signal is collected by the vehicle's data system or internally by the ISUS built in data logger.

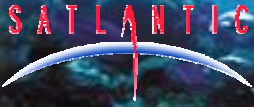
**Bench Top** - Whether you're in the lab or in the field, retrieve real time, continuous nitrate measurements easily and accurately.

**ISUS-X** - A flexible option of the ISUS sensor that allows the integration of serial and analog devices into the data stream. See the WQM-1 brochure for more details.



ISUS Nitrate sensor mounted on T-frame.





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## ISUS V2 SPECIFICATIONS

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### PERFORMANCE

Accuracy:	$\pm 2 \mu\text{M}$ (0.028 mg/l) or $\pm 10\%$ of reading, whichever is greater
Detection range:	0.5 to 2000 $\mu\text{M}$ *(0.007 to 28 mg/l-N)
Thermal Compensation:	0 to 40 °C
Salinity Compensation:	0 to 40 psu

### OPTICS

Path length:	1 cm
Wavelength range:	200 - 400 nm
Lamp type:	Deuterium
Lamp lifetime:	1000 h

### ELECTRICAL CHARACTERISTICS

Input voltage:	6 - 18 V (Non-isolated power input from batteries) 19 - 75 V (Isolated power input) 11 - 36 V (Optional isolated power input)
Power consumption:	6.5 W (0.54A @ 12V)
Data storage:	256 MB
Sample rate:	1 Hz
Telemetry options:	Analog output 0 - 4.096 VDC Isolated RS-232 - RS-485 serial output User selectable baud rates available (Default 38,400 bps)
Data Download Options	USB RS-232

### PHYSICAL CHARACTERISTICS

Depth rating:	1000 m
Length:	24 inches (608 mm)
Diameter:	4.5 inches (114 mm)
Weight:	11.0 lbs in air (5.0 kg) 1.5 lbs in water (0.7 kg)
Housing material:	Anodized Aluminum
Operating temperature:	0 to 40 °C

*Specifications may change without notice.  
July 20, 2006*