For over fifty years, Hoskin Scientific has been a supplier of testing and monitoring instrumentation to the Canadian market. With offices in Vancouver, Victoria, Edmonton, Burlington, Halifax and Montreal our customers are able to receive local sales and technical support in our three major departments.
Submersible Ultraviolet Nitrate Analyzer
About Satlantic

• Located in Halifax, Nova Scotia
• Founded in 1991 by Dr. Marlon Lewis (Dalhousie Oceanography)
• In 2011 joined Sea-Bird & WET Labs in the SB-OMG
• Core product lines include:

  Radiometers    Fluorometers    Obs. Systems    Nutrient Sensors
SUNA

• Introduced in 2008
• Developed from the original MBARI ISUS technology
  • Commercialized in 2003
  • Dr. Ken Johnson and Luke Coletti
• Large customer base in:
  • Oceanographic applications (e.g. CTD profiling, moorings)
  • Water Quality Monitoring (coastal, estuaries)
  • Freshwater pollution monitoring
  • AUV operation (Gliders, floats, etc)
Principle of Operation

Highly Stable Deuterium Lamp

UV Spectrometer Detector

190 – 370 nm
NO$_3^-$ Fitting Range $\sim 220 - 240$ nm
DIW - Nitrate Free Water

Absorption due to Nitrate

Nitrate Replete Water

Background
Performance Specifications

• Detection: 0.007 – 28 mg/L (0.5 to 2000 uM)

• Accuracy: +/- 0.028 mg/L (2 uM) or 10% of reading (whichever is greater)

• Drift less than 0.007 mg/L per hour of lamp on time
Instrument Specifications

• 100 m, 1000 m and 2000 m depth rating available

• 8 – 18 VDC power input

• 7.5 W power draw (625 mA at 12 V)

• Sample rate 0.5 Hz

• Telemetry Interfaces: SDI-12, RS-232, Analog
Biofouling Accessories

• Cooper Foul Guard
• Flow Cell and Pump
• Zebra Tech Wiper
Video Showing ZebraTech Wiper on SUNA
Software - SUNACom

• Available for PC and Mac
• Programming of SUNA
• Viewing real-time data collection
• Reprocessing of previously logged data files
  • Both individual and batch processing
  • Apply updated calibration to collected data
SUNACom – Spectra Graph
SUNACom – Time Series Graph
SUNACom - Absorbance Graph
SUNACom – Nitrate Reprocessing
Northwest Arm of Halifax Harbour 44°37' 44.7" N, 63°35' 29.4" W

Data Available online @:
http://lobo.satlantic.com
- Ongoing experiments at Dalhousie University
- Using Arizona River Dust Turbidity Standards
- Actual NO3 is an average of 10 samples
• Ongoing experiments at Dalhousie University
• Using Suwannee River Fulvic Acid Standards
• Actual NO3 is an average of 10 samples
• QSU (quinine sulphate unit) is a standardized measure of CDOM

<table>
<thead>
<tr>
<th>Actual NO3 (µM)</th>
<th>200</th>
<th>200</th>
<th>200</th>
<th>200</th>
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</thead>
<tbody>
<tr>
<td>CDOM (mg/L)</td>
<td>0</td>
<td>20</td>
<td>30</td>
<td>40</td>
<td>50</td>
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<tr>
<td>CDOM (QSU)</td>
<td>0</td>
<td>200</td>
<td>300</td>
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<td>500</td>
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<td>SUNA NO3 (µM)</td>
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<td>196.447</td>
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<td>Std Deviation</td>
<td>0.572</td>
<td>1.902</td>
<td>2.862</td>
<td>14.262</td>
<td>100.669</td>
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Questions and Comments?