



## Navis Biogeochemical (BGC) Autonomous Profiling Float

**Product #:**

**NAVISBGCI**

USD Price:  
Available

Contact Sea-Bird

### Autonomous profiling float for Argo and other programs

Autonomous profiling floats are revolutionizing the way scientists study the ocean. Before the first profiling float entered the water, our ability to measure climate, biological and chemical trends was limited in scope while large-scale studies were a costly endeavor. Today, scientists monitor the world's oceans with thousands of floats. These developments have provided an unprecedented amount of data.

Programs like GO-BGC and Biogeochemical-Argo extend the Argo array of profiling floats to include biogeochemical sensors for pH, oxygen, nitrate, chlorophyll, suspended particles, and downwelling irradiance. They are intended to address numerous challenges in ocean science and in the management of ocean and global resources. Newly developed sensors allow profiling floats to observe biogeochemical properties with sufficient accuracy for climate studies. This data will help determine the seasonal to decadal-scale variability in biological productivity, the supply of essential nutrients from deep waters to the sunlit surface layer, ocean acidification, hypoxia, and ocean uptake of CO<sub>2</sub>.

Like the original autonomous profiling floats, biogeochemical (BGC) autonomous profiling floats will drive a transformative shift in scientists' ability to observe and predict the effects of climate change on ocean metabolism, carbon uptake, and living marine resource management. Monitoring of the ocean response to climatic and anthropogenic forces is critical to understanding the impacts on the global carbon cycle and its ecosystems' responses. Increasing evidence of large-scale ocean acidification and resultant deoxygenation has emphasized the need to understand the impacts on biogeochemistry and ecosystem dynamics.

Sea-Bird Scientific's SBE 41 Argo and SBE 61 Deep Argo CTDs support more than 90% of the annual Argo program floats. The Navis BGC autonomous profiling floats come equipped with a CTD and biogeochemical sensors, including the SBS 83 or SBE 63 (optical dissolved oxygen) and MCOMS (backscattering and fluorescence) as well as optional Float pH and Deep SUNA (nitrate).

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### Specifications

Communication:	Iridium Transceiver 9523 — RUDICS, circuit switched
Depth Rating:	2000 dbars
Dimensions:	Hull diameter 14 cm, Ring diameter 24 cm, Total length 167 cm
Internal Batteries:	4 packs of 3 DD lithium sulfuryl chloride cells (cannot ship in passenger aircraft; Class 9 Dangerous Goods)
Material:	Aluminum hull, seamless natural-rubber external bladders
Memory:	CTD stores one 2000-dbar CTD profile
Park Interval:	1 - 15 days
Position:	GPS, Garmin 15xL-W, mean acquisition time 70 sec
Power Endurance:	250 2000-dbar cycles (mission dependent; excluding optional bolt-on sensors)
Self-Activation:	Starts operating automatically on deployment, when pressure reaches user-programmable setpoint

Volume:	1.7% change (minimum fractional)
Weight:	< 20 kg (excluding optional bolt-on sensors)