

Modular Sea Ice Buoy

The main component of the modular sea ice buoy is a thermistor string measuring air, snow, ice, and water temperatures. But in addition, it allows a most flexible configuration of additional sensors above, in, and under the ice. The main component is designed to be installed on an ice floe, including batteries and all control electronics. The unit usually has a small photo camera included. An above and under ice mast holds additional sensors. Sensor configurations vary from unit to unit, but all platforms report GPS position and atmospheric data via Iridium.

Buoy description

Manufacturer:	Bruncin
Data provider	Joubeh
Weight	approx. 70 kg
Deployment type	Installation on sea ice

Technical Details

Exemplary sensors mounted on the system, while the configuration differs between units

- Barometric pressure (hPa)	BMP180 (accuracy: ± 1 hPa)
- Int. Temperature & Humidity	HIH6130
- GPS position	S1315R (accuracy: ± 2.5 m)
- Temperature ($^{\circ}\text{C}$)	240 x ADT7320 (± 0.015 $^{\circ}\text{C}$) for a 5m long chain
- Pyranometer	Apogee SP-230 or Apogee SP-110
- Fluorescence & Backscatter	WetLabs Eco Triplet
- Dissolved Oxygen	Aandera Optode
- Salinity	BKIN-50
- Camera	LinkSprite LS-Y201, Picture resolution 160x120px

Measurement & data intervals	Mostly hourly
Power supply	Alkaline or Lithium batteries



Modular sea ice buoy consisting of the main control unit (grey box) a mast structure (grey pole) and a thermistor chain mounted on a tripod (white). In addition, the photo shows a Snow Buoy and a thermistor string buoy in the background.