

SLOCUM GLIDER

AUTONOMOUS UNDERWATER VEHICLE

Slocum Autonomous Underwater Vehicle Gliders

A versatile remote sensing AUV for ocean research, monitoring and surveillance. Buoyancy driven, the long range and duration capabilities of Slocum gliders make them ideally suited for water column sampling at the regional scale. Slocum gliders can be programmed to patrol per mission requirements, surfacing to transmit data to shore while downloading new instructions at regular intervals, at a substantial cost savings compared to traditional surface ships. The small relative cost and the ability to operate multiple vehicles with minimal personnel and infrastructure will enable fleets of Gliders to study and map dynamic (temporal and spatial) ocean features around-the-clock and calendar.



INNOVATIVE UNDERSEA SYSTEMS TECHNOLOGY



**TELEDYNE
WEBB RESEARCH**
A Teledyne Technologies Company

Slocum Glider

SENSOR OPTIONS:

Previously integrated sensors

- ADCP – Acoustic Doppler Current Profiler
- Acoustic Modem
- Acoustic Bioprobe
- Acoustic Mammal Detection
- Hydrophones
- Altimeter
- Bathyphotometer (bioluminescence)
- CTD
- Optical Backscatter
- Optical Attenuation
- Optical Fluorometer
- Oxygen
- PAR
- Radiometer
- Beam Attenuation Meter
- Spectrophotometer for harmful algal blooms (e.g., Red Tide)
- Turbulence

GREATEST FLEXIBILITY TO SUPPORT CHANGING MISSION REQUIREMENTS

- Exchangeable 6L payload capacity
- Independent processor for data acquisition
- On board CTD
- Customized for a variety of acoustic, optical and chemical sensors
- Largest number of previously integrated sensors
- As part of Teledyne Marine, access to engineers and technology for advanced sensor capability and future sensor developments

General Specifications

Deployment	Versatile, maneuverable deployment with 1-2 people
Power	Alkaline batteries
Range	600 - 1500 km
Deployment Length	15-50 days
Configuration Options	(4 to 200m) or (40 to 1000m) operating depth range
Navigation	GPS Waypoints, Pressure Sensor, Altimeter
Communication	RF Modem, Iridium, ARGOS, Acoustic Modem, RUDICS
Speed	.35 m/s (0.68 knot) Average Horizontal
Mass	54 kgs
Dimensions	Vehicle Length: 1.5 meters; Hull Diameter 22 cm

Note: endurance and range dependent on measurement, energy source and communications.

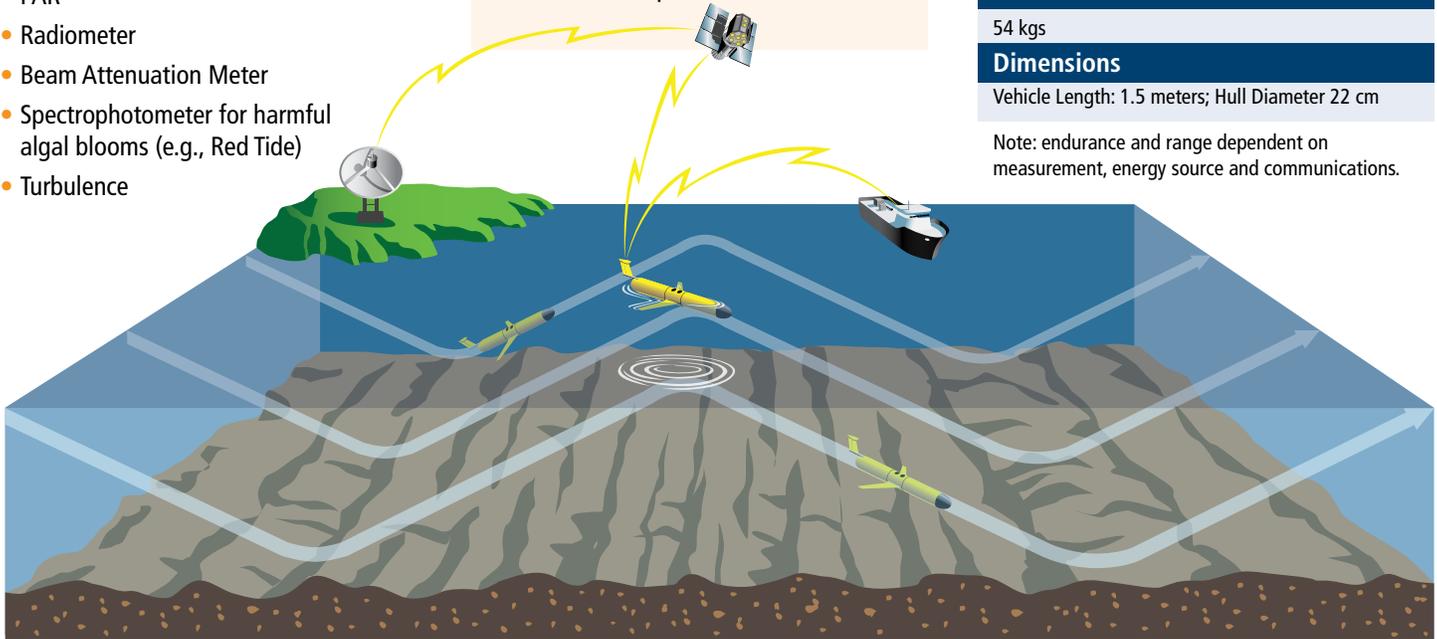


Figure 1. The Slocum glider uses hydraulic buoyancy change to alter the vehicle density in relation to the surrounding water thereby causing the vehicle to either float or sink. Given an appropriate dive or climb angle, the wings and body lift convert some of this vertical motion into a forward sawtooth horizontal motion. Altimeter or pressure inflects the glider in relation to the bottom or a specified depth as it undulates throughout the water column collecting sensor data. Per pre-programmed mission, the glider periodically surfaces, inflating an air bladder to raise the tail fin antennae out of the water. The glider then calls via Iridium Satellite Phone (anywhere in world) or Free Wave RF Modem (line of sight) in to Dockserver (auto attendant computer) to relay navigational fix, data and receive further instructions for command and control. Gliders can be flown in a coordinated fleet to meet a spacial and temporal objective, along transects, or as virtual moorings.



82 Technology Park Drive, East Falmouth, MA 02536-4441 USA
Tel +1 508-548-2077 • Fax +1 508-540-1686 • E-mail: info@webbresearch.com

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Additional Features

- Waypoint transect capability
- Virtual mooring
- Gateway glider acoustic link
- Storm sampling
- Coordinated fleet
- Slocum Glider system includes all tools (hardware and software) required from deployment to mission planning to command and control to data retrieval.

