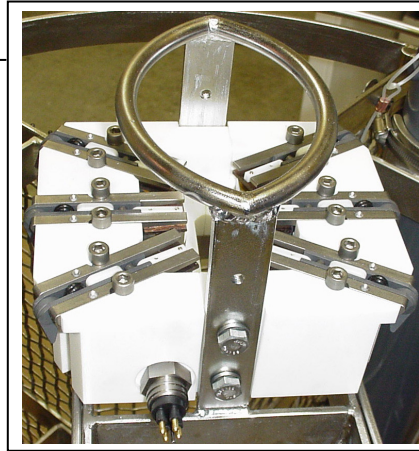
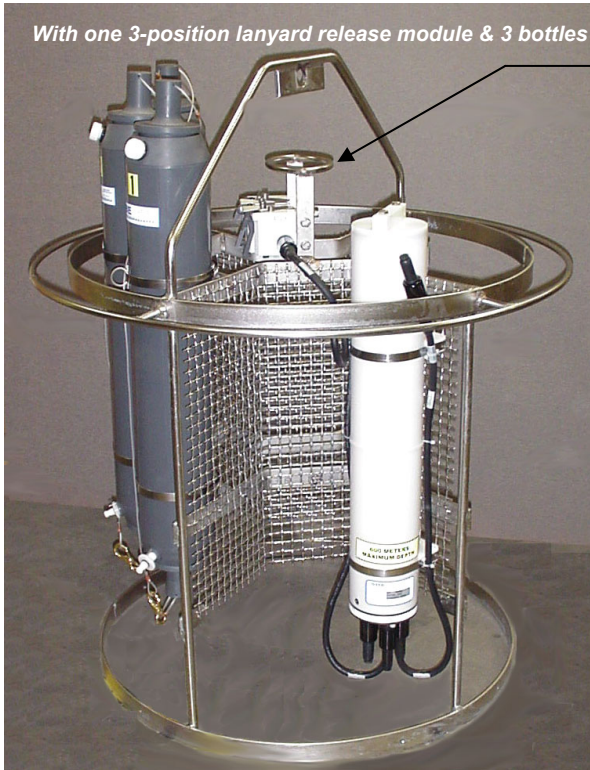


# ECO Water Sampler

## SBE 55



With one 3-position lanyard release module & 3 bottles



Configured with two 3-position lanyard release modules (for 6 bottles)

SBE 55 ECO Water Sampler features include:

- Small, robust, lightweight package
- Reliable, efficient, user-friendly design
- Open structure for better flushing and less drag
- Bottle firing in any order

The ECO is the ideal small-boat water sampler for coastal, estuarine, and large lake ecological monitoring. The ECO is light and economical and can be integrated with an SBE 19, 19*plus*, 19*plus* V2, 25, or 49\* CTD or SBE 50\* Pressure Sensor. It is available in a three- or six-bottle configuration with 4-liter ECO sample bottles, uniquely designed for the ECO. The ECO can operate autonomously on internal batteries and be programmed to close bottles at selected depths, allowing deployment using non-electrical wire or line. It also can be used with an SBE 33 Carousel Deck Unit for real-time CTD data acquisition and water sampling. Real-time operation requires an electro-mechanical cable and slip-ring equipped winch.

(\*Note: SBE 49 integration for real-time operation only; SBE 50 integration for autonomous operation only.)

The bottle closing mechanism is a magnetically actuated lanyard release latch derived from the SBE 32 Carousel Water Sampler, which has a long history of reliability and ease-of-use. Lanyards are rigged to hold bottles open when lanyards are attached to the release latches. A pressure-proof electromagnet is energized on command to trigger a lanyard release, allowing the bottle to close. The ECO can be configured with one or two 3-position lanyard release modules. Each release module is connected to the ECO's Electronics Control Module by a separate cable, allowing easy do-it-yourself expansion from a three-bottle to a six-bottle system.

The ECO includes the Electronics Control Module (ECM), one or two lanyard release modules, three or six 4-liter ECO sample bottles mounted in saddle brackets and fastened with band clamps, stainless steel guard frame with integral lifting bail, and mesh panels for mounting the ECM, CTD, and other sensors that may be integrated with the CTD (e.g., dissolved oxygen sensor, fluorometer, turbidity sensor, etc.). CTD mounting brackets and interface cable, auxiliary sensors, and (for real-time operation) SBE 33 Carousel Deck Unit must be ordered separately.

### SOFTWARE

SEASOFT®-Win32, our complete Windows 2000/XP software package, is included at no extra charge. SEASOFT's modular programs include:

- SEATERM, SeatermAF, SCPlusV2\_RS232 – terminal programs for setup and data upload.
- SEASAVE V7 – real-time data acquisition and simultaneous keyboard control of bottle firing.
- SBE Data Processing – filtering, aligning, averaging, and display of CTD and auxiliary sensor data and derived variables.



Photo by Paul deRoos



**Sea-Bird Electronics, Inc.**

1808 136<sup>th</sup> Place NE, Bellevue, Washington 98005 USA

Website: <http://www.seabird.com>

E-mail: [seabird@seabird.com](mailto:seabird@seabird.com)

Telephone: (425) 643-9866

Fax: (425) 643-9954

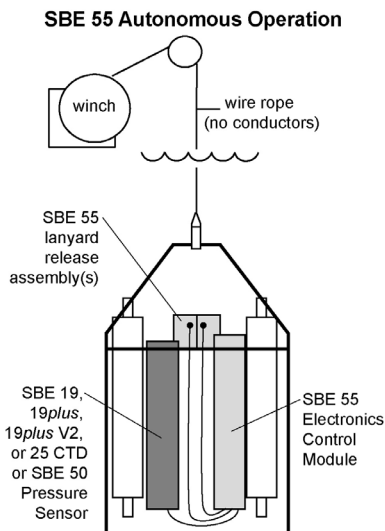
## WATER SAMPLER CONTROL

### Autonomous Operation (wire rope only, no electromechanical cable required)

The ECO's Electronics Control Module provides power to and programmable control of the water sampler:

- Used with a CTD (SBE 19, 19plus, 19plus V2, or 25) or SBE 50 Pressure Sensor, the ECO monitors the pressure data and fires bottles at user-programmed pressures or depths. It also records bottle number, firing confirmation, and 5 scans of instrument data for each bottle.
- Used without a CTD, the ECO fires bottles at user-programmed elapsed times, and records bottle number and firing confirmation for each bottle fired.

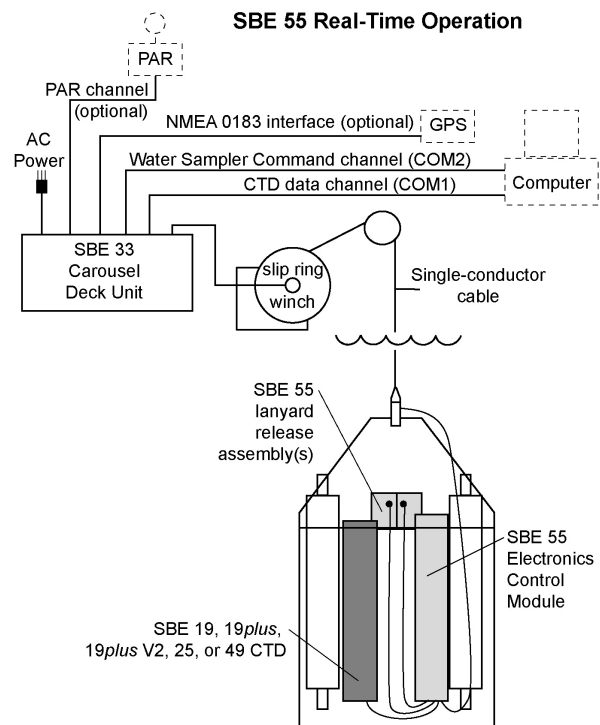
At the end of a cast, data from the CTD and the bottle summary file from the ECO are uploaded using the software provided. Nine high-quality alkaline D-size cells (LR-20) provide several months of daily operation (rechargeable Ni-MH batteries also available).



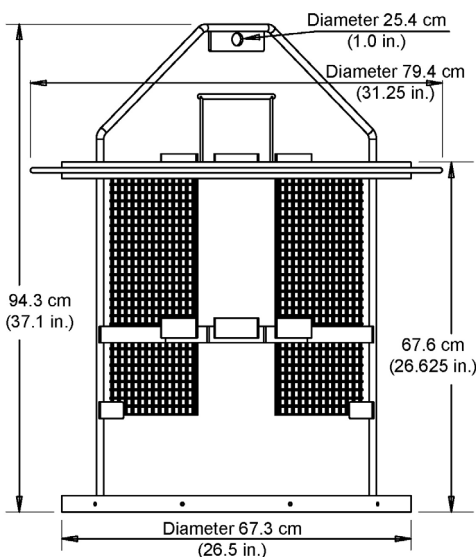
### Real-Time Operation via Electromechanical Cable

The ECO's Electronics Control Module can be connected to a winch cable for real-time use. Users can switch from autonomous to real-time operation at any time by connecting the winch cable to the ECM, and connecting the SBE 33 Carousel Deck Unit to AC power and the winch slip rings. This enables real-time CTD data acquisition and water sampler control from your computer keyboard or Deck Unit panel controls:

- Used with an SBE 19, 19plus, 19plus V2, 25, or 49 CTD, the SBE 33 provides power and real-time control to the ECO, as well as power and real-time telemetry for the CTD and auxiliary sensors.
- Used without a CTD, the SBE 33 provides power and real-time control to the ECO.



## SPECIFICATIONS



Depth Rating: 600 meters

Materials: 316 stainless steel, titanium, anodized aluminum, plastic

Weight in air: *Without CTD or bottles* - 30 kg (67 lbs)  
*With SBE 19plus\* & three empty 4-liter bottles* - 51.3 kg (113 lbs)  
*With SBE 19plus\* & six empty 4-liter bottles* - 60.5 kg (133 lbs)  
*With SBE 19plus\* & six full 4-liter bottles* - 84 kg (185 lbs)  
 \*Note: 19plus and 19plus V2 weights are identical

Winch Cable Compatibility: Single or multi-core armored cable up to 10,000 meters long with inner core resistance of 0 - 350 ohms