

Oceanscience Underway CTD



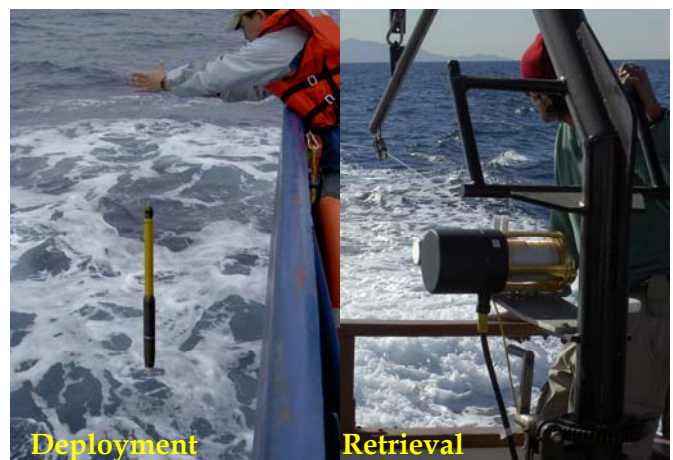
The **Oceanscience Underway CTD** allows research quality CTD measurements from almost any moving vessel. The system is extremely portable, cost-effective, and environmentally safe.

The UCTD consists of a custom low-drag, high-accuracy, retrievable Sea-Bird CTD probe, high-speed winch with levelwind, line retractor unit, and davit. The probe yields high-quality CTD measurements to over 400 meters depth. It can be operated at ship speeds up to 20 knots.

The UCTD is ideal for both research applications and hydrographic sound speed surveys. The system weighs less than 25 kg and requires minimal deck space. Deployments are easy to perform and do not interfere with other ship activities. Data download uses state-of-the-art wireless technology for quick turnaround. The UCTD system combines the convenience of expendables without the recurring cost and negative environmental impact.

UCTD system benefits:

- Continuous profiling without altering ship speed
- Probe fully decoupled from ship
- Direct depth measurement via pressure sensor
- Optional post-deployment sensor calibration
- Cost effective
- Ultra-compact and portable
- No pollution with waste materials
- Rugged design for operation in rough weather
- Wireless data download via Bluetooth



Contact us for more information

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The **UCTD** system consists of the following components:

Probe

The probe head consists of a high-accuracy Sea-Bird CTD sensor with embedded data acquisition system and Bluetooth wireless communication interface. The sensor is contained within a low-drag pressure case. A custom tail spool is attached securely via a simple twist-and-lock mechanism.

Winch

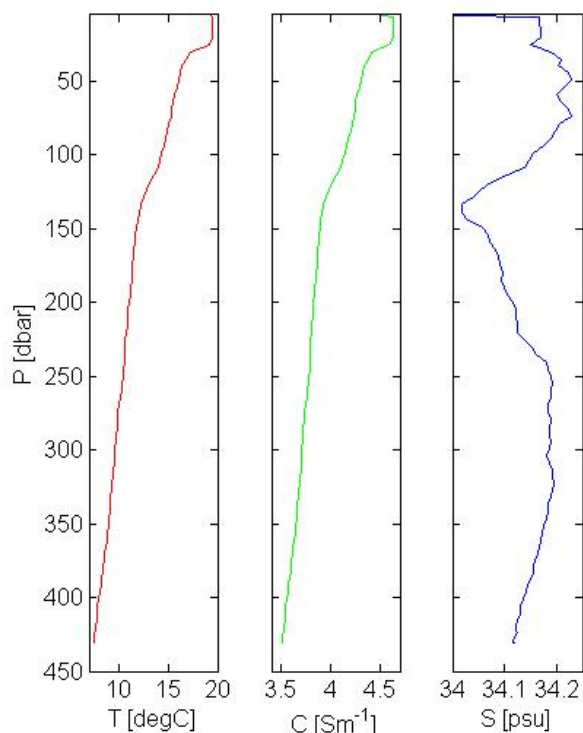
The winch features a large-capacity reel with a custom high-torque DC drive unit and motorized levelwind. Adjustable drag and motor control allow for fast and safe probe retrieval. The **10-400 UCTD** reel holds 1400 meters of Spectra line for profiles to over 400 meters depth at 10 knots. With the **20-150 UCTD** system, accurate measurements to 150 meters can be obtained at ship speeds up to 20 knots.

Rewinder

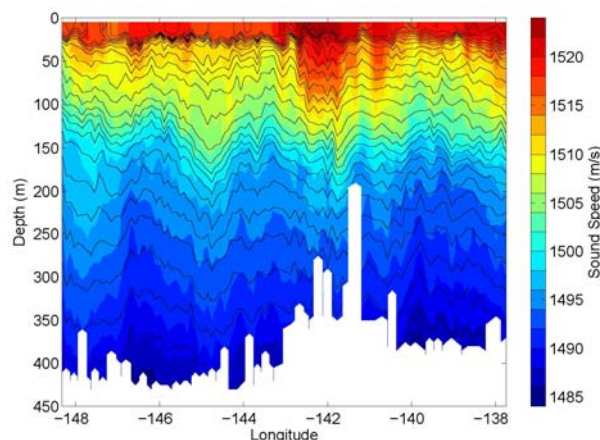
Controlled by a microprocessor, this dual motor unit precisely loads the tail spool with Spectra line. The unit may be programmed for different profile depths and is fully automated for quick recurring measurements.

Davit

The UCTD davit is a compact winch mount with probe holder. Rail or deck mounted design options are available to suit virtually any ship. The most common davit option is a post mount with 2' x 2' hole pattern base compatible with common deck patterns on most research vessels. Custom boom lengths are available.



Sample profile from Rudnick and Klinke [2006]*



1000 km transect from Rudnick and Klinke [2006]*

CTD Sensor Specifications

	Conductivity [S/m]	Temperature [°C]	Depth [dbar]	Salinity [psu]
Resolution	0.0005	0.002	0.5	0.005
Raw Data Accuracy	0.03	0.01 to 0.02	4	0.3
Processed Data Accuracy	0.002 to 0.005	0.004	1	0.02 to 0.05
Range	0 to 9	-5 to 43	0 to 2000	0 to 42

* Rudnick, D. L., and Klinke, J., "The Underway Conductivity-Temperature-Depth Instrument," *Journal of Atmospheric and Oceanic Technology*, 2006. (accepted for publication)



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