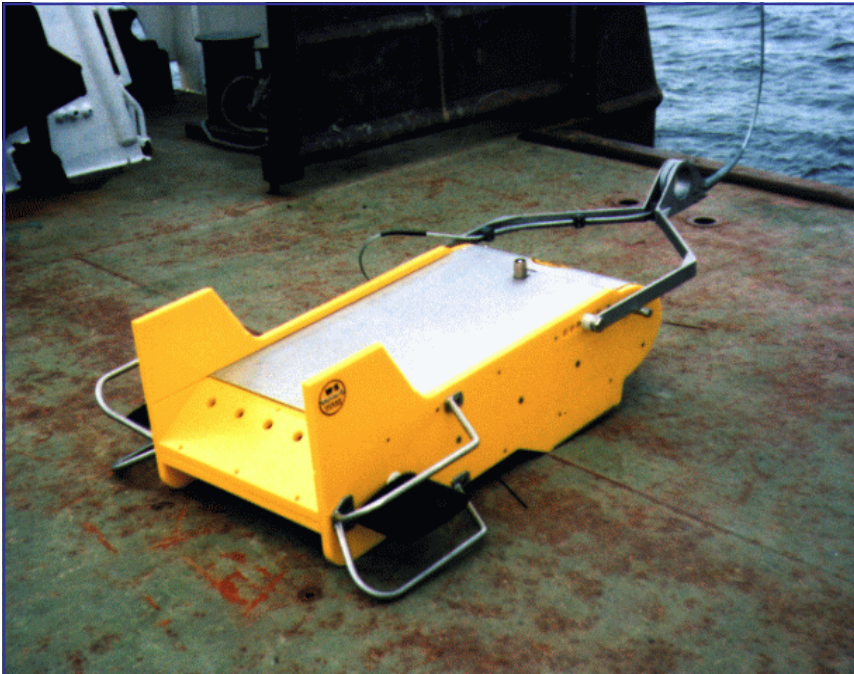




EnviroTech Instruments

U-Tow

Undulating Towed-Vehicle



Rugged, Versatile, Large Payload Undulator

U-Tow is an undulating, or fixed-depth, towed vehicle with a large adaptable payload for oceanographic sensors, analyzers and samplers. The system can be supplied as a basic vehicle for equipping with user supplied instrumentation or as a complete integrated system, tailored to suit a particular application. **U-Tow** has been carefully designed as a rugged and reliable high capability vehicle, offering predictable flight characteristics and an extremely user friendly, easy to operate Windows front-end.

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Benefits

- High reliability = low risk operation
- Superior hydrodynamic / control system design
- Backed by extensive science-led development program
- Rugged, durable and easy to maintain
- Low cost of ownership

Applications

- Rapid large-scale spatial surveys
- Phytoplankton and zooplankton sampling
- Autonomous use in ferry / cargo ship mode
- Large Marine Ecosystem programs
- Standard tool for research vessel use

Description



U-Tow's large payload capacity stainless steel and polyethylene vehicle body is the result of careful hydrodynamic design, modelling and simulation. The vehicle features an easily removed top cover and nose fairing. Ballasted side cheeks in the nose section and a heavy duty lower chute provide important hydrodynamic stability and vehicle protection. Input and output ducts allow uninhibited flow to the onboard sensors. U-Tow is an ideal utility vehicle and our systems engineers can install a custom suite of instrumentation. The adaptable, large capacity payload area allows for the integration of a system that includes numerous sensors, samplers and analysers. We can assemble your system using your favored off-the-shelf devices or existing trusted sensors. U-Tow's sophisticated data acquisition system can accommodate up to 32 analogue sensors and 8 serial devices. The supply of tow-cable, slip rings and even a winch can all be included. U-Tow can be supplied with Ocean Windows software providing communication, system set-up & control, GPS data merging, real-time displays, data processing and archiving functions. Installation, training and at-sea commissioning are all part of the service. We appreciate that a fully configured towed-vehicle system is a significant investment. To ensure complete satisfaction our project team will work with you from initial concept through to training and hand-over. The U-Tow design was originally commissioned by the Sir Alister Hardy Foundation for Ocean Sciences (SAHFOS) in the mid 1990's as an enhancement of the Continuous Plankton Recorder (CPR). Funding for the development of U-Tow has come from the UK DETR.

Specification

Sensors	From: Salinity (conductivity), temperature, depth (pressure), fluorescence, turbidity, transmission, dissolved oxygen, light (PAR), nutrients, plankton sampler, zooplankton sampler, optical plankton counter, etc.
Data acquisition	User programmable up to 50 Hz
Undulation controller	Depth (pressure), pitch, roll, elevator angle, supply voltage, bottom distance (optional)
Sampling controls basic	Data rate (to 50 Hz), water sample interval, zooplankton sample interval, fluorometer / turbidity gain, trigger water / zooplankton sampler.
Flight controls	Controls: Undulation period, depth, dive & climb rate, tracking constants, attack, abort depth, parking depth (level flight)
Cable	Armoured / 4.2 tonnes BS / 8.2 mm dia. / Length to suit depth required
Dimensions (body)	45.3" (1150 mm) l x 19.3" (490 mm) w x 9.0" (230 mm) h
Weight	Air: 198 lbs (90 kg) / Water: 165 lbs (75 kg) typical
Depth capability	Depends on tow speed / cable / payload / fairings / winch operation Depth to 150 m with unfaired cable and fixed winch
Towing speed	1 - 20 knots
Communications	RS485 full duplex / 115.2 kbaud
Power supply	AC (90-250 Vac / 50-60 Hz) or 48 Vdc
Materials	Stainless steel frame & fixings, polypropylene side walls, GRP elevators