Ice Tethered Profiler

Application:
The Ice Tethered Profiler (ITP) is an autonomous time-series instrument that vertically profiles the water column under the ice and collects *in situ* measurements of salinity and CTD temperature data. Data is automatically transmitted near real-time via inductive modem.

Features:
Robust, field-proven drive train, electronics and inductive modem technology. Anodized aluminum housing is similar to the ARGO float. When used with a surface controller, returns daily (near real-time) high-vertical resolution measurements of ocean temperature and salinity.

Sample schedule options:
Data collection is directed by user-defined profiles and scheduled sampling. Deployment Planner option provides a PC-based application for creating reusable deployment schedules with profiles and patterns.

Deployment:
Drive motor provides smooth, steady ascent/descent at 25cm/sec. Streamlined shape delivers efficient profiling and long battery life. Depending on installed sensors and profile settings, 240Ah or 360Ah battery makes multi-year deployments possible.

Supported sensors:
CTD sensor is required. All currently integrated sensors are listed below.

<table>
<thead>
<tr>
<th>Sensor Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>SBE41CP CTD</td>
<td>Biospherical PAR</td>
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<tr>
<td>SBE 41CPI DO (integrated dissolved oxygen)</td>
<td>Wetlabs Triplet</td>
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<td>RDI DVS</td>
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*Other sensors can be integrated depending on sensor size and battery drain.
# Iced Tethered Profiler Specifications

## Dimensions:
- **Length:** 171 cm (67 in) (max diameter)
- **Width:** 26 cm (10 in) (max diameter)
  - Fits through 27.9 cm (11 in) hole in the ice

## Weight (Approx):
- In air (with sensors): 28 kg (61 lbs)
- In water: neutrally buoyant

## Controller:
- **Power supply:** 8.5 - 12.5 VDC
- **Power consumption:** 120 mA (profiling), 300 µA (sleep)
- **Data telemetry:** SBE 44 UIM or IMM at 1200 bps
- **CTD data acquisition:** ~ 2 Hz (SBE 41CP)

## Operations:
- **Maximum depth:** 1000 m
- **Battery endurance:** 240 Ah or 360 Ah lithium battery pack
- **Minimum temperature:** -35°C
- **Profiling speed:** 25 cm/sec
- **Data storage:** Compact flash backup data storage

## Materials:
- **Guide wheels:** Ertalyte
- **Drive wheel:** Urethane-coated titanium
- **Pressure housing:** Anodized aluminum

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