



Teledyne Webb Research – APEX Floats (Lagrangian Subsurface Drifters)

APEX –Autonomous Profiling Explorer

APEX is an autonomous drifting profiler used to measure subsurface currents and make profile measurements. It surfaces at programmed intervals for data telemetry and geo-location via ARGOS or IRIDIUM satellite. Standard sensors include Conductivity (Salinity), Temperature and Pressure (Depth) but other sensor options are available.

APEX has a 4-year life and can surface approximately 150 times from a maximum depth of 2000 metres. (6000m for APEX deep)

Over **6000 APEX floats** have been delivered to users in **19 nations**. Floats are supplied deployment-ready, and are routinely deployed from merchant ships (VOS) whilst moving at 20+ knots.

APEX automatically adjusts buoyancy to follow an isobaric surface while drifting, or can be programmed to follow an isopycnal surface. The optional "park and profile" feature allows drift depth to be decoupled from maximum profile depth. For example, a float might be programmed to drift at 1000 dbar, then descend to 2000 dbar before profiling upward to the surface.

The APEX salinity profiler has been certified by US Dept. of Defense for air deployment from C130 aircraft. Proven VOS and aircraft deployment packages are available options.

APEX can be easily tested and re-programmed by connecting a terminal.

As well as having a flexible choice of sensor choices, optional features also include **Ice avoidance** algorithm and **recovery handle** and **strobe light**.

Specifications:

Dimensions 16.5 cm dia. x 127 cm long (not incl. 69 cm antenna)

Mass 25 kg

Autonomy nominal 4 years; 150 ascents

Operating depth 2000 metres maximum (6000m for APEX deep)

Profile sample rate Programmable. Typically 100 TP or 50 CTP points at 5-10 m.

intervals (resolution limited by telemetry data rate, not by design)

Battery options: Alkaline or Lithium

Sensor options include CTD, Oxygen, Turbidity, Fluorometers, PAR,

Transmissometer, Rafos Acoustics or mixing / vorticity.

