

# ARVOR C

## Coastal profiling float

**ARVOR-C** is a subsurface profiling float designed to operate in coastal environment and perform oceanographic measurements as a pseudo-eulerian station.

Its design has been optimized to reduce its drift thanks to a seabed standby and anti-drift claws, an optimized profiling speed (~25 cm/s), and a short data transmission duration.

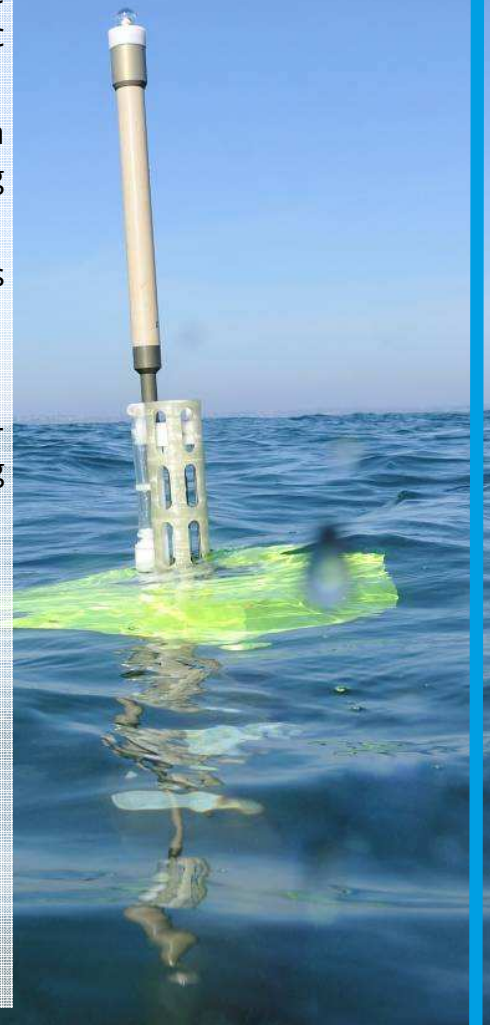
It can perform more than 300 profiles, and transmits its data in real time via the Iridium satellite system.

The ARVOR-C is fitted with "ARGO" used CTD.

The design of the ARVOR-C has used elements and know-how used in the ARVOR and PROVOR offshore profiling floats range.

### Main characteristics:

- Virtual mooring
- Sampling over the entire water column
- Up to 300 cycles (lithium cells)
- Operation depth : 300 meters
- Up to one set of measure per meter
- Light and easy to deployd (22kg)
- "Sea-Bird" proven CTD metrology
- Two ways Iridium transmission & remote control
- Self ballasted



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# ARVOR C

Developed in industrial partnership with Ifremer



Profiling floats

## TECHNICAL SPECIFICATIONS TYPE ARVOR-C (Coastal)

### SBE 41 CP manufactured by Seabird electronics

- Salinity
  - Range 0 to 40 PSU
  - Initial accuracy  $\pm 0.003$  PSU
  - Observed drift  $< 0.01$  PSU / 5 years
- Temperature
  - Range  $-5^{\circ}$  C to  $35^{\circ}$  C
  - Initial accuracy  $\pm 0.002^{\circ}$  C
  - Observed drift  $< 0.002^{\circ}$  C / 5 years
- Pressure
  - Range 0 dbars to 2100 dBars
  - Initial accuracy  $\pm 2.4$  dBar
  - Drift  $< 5$  dBar / 5 years

### TELEMETRY

IRIDIUM transmission

### DATA TRANSMITTED

One (T, S) averaged per meter

### TRANSMITTED RESOLUTION

- Salinity 0.001 PSU
- Temperature  $0.001^{\circ}$  C
- Pressure offset 1 cbar (reseted when surfacing)

### POSITIONING

GPS receiver 12 channels

### FLOAT DIMENSIONS

Overall Length 195 cm with antenna  
Hull Length 140 cm  
Hull Diameter 11 cm  
Damping and floating collar 29 x 29 cm  
Weight 22 kg

### FLOAT CONSTRUCTION

Hull Anodized aluminum casing  
High pressure synthetic foam for floatation

### OPERATION FEATURES

Operation depth: 300 dBars  
Number of profiles: up to 300 cycles  
Operating temperature:  $-2^{\circ}$  C to  $35^{\circ}$  C  
Operating life 4-5 years at sea  
Power supply: Lithium battery

### STORAGE CONDITIONS

Temperature  $-20^{\circ}$  C to  $+70^{\circ}$  C ( $-4^{\circ}$  F to  $+158^{\circ}$  F)  
Maximum storage time before use: 1 year  
Real time clock saved by separate battery

### BUOYANCY MANAGEMENT

Principle: Oil ballast with pump & valve

### USER INTERFACE

A - Bluetooth User Interface

Mission programming, float checking, etc.  
Terminal Personal Computer

B - Activation by magnetic switch

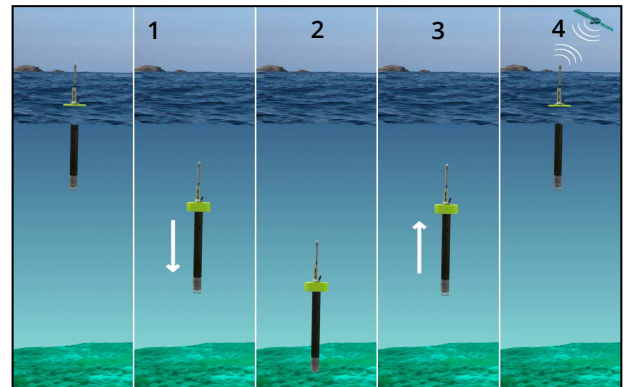
Remove magnet launches the float

C - Remote control

Modification of mission parameters via Iridium downlink



## TYPICAL CYCLE



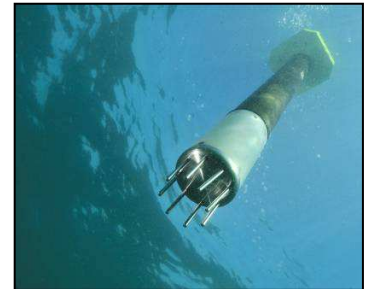
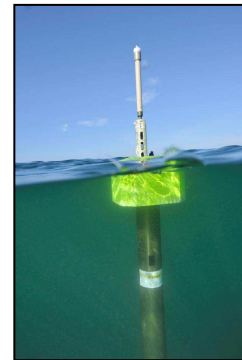
1/ Descent

2/ Seabed standby until pre-programmed pop up time

3/ Pop up and measurements

4/ At surface :

- GPS fix acquisition
- Reading for new set of parameters (remote control)
- Data transmission (Iridium)



*Pictures and drawing thanks to Ifremer and Olivier Dugournay courtesy*

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