

DEEP ARVOR

Ifremer



**Compact autonomous ARGO profiling float
for use at 4000 meters depth, 150 cycles
Salinity - Temperature - Pressure - DO
Ice Sensing Algorithm**

Profiling floats



The **DEEP ARVOR** provides salinity, temperature and pressure profiles up to 4000 meters depth, using proven ARGO sensors. Data are transmitted by IRIDIUM satellite system and the float is GPS positioned.

With self-ballast and light design, DEEP-ARVOR is self ballasted and its light weight allow easy deployment.

Ice sensing algorithm with untransmitted profiles storage and delayed transmission capability

Design has been performed by Ifremer well qualified Arvor subassemblies and new hull technologies nke instrumentation achieves the industrial, production and commercialization.

Main characteristics:

- Designed for the core Argo mission
- Light and easy to deploy (less than 26kg)
- “Sea-Bird” proven CTD metrology
- Aanderaa dissolved oxygen optode
- 150 « CTD » cycles @ 4000 meters
- Alternative depths enable more profiles
- Easy connectivity using RF bluetooth

Pictures thanks to Ifremer's courtesy

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INSTRUMENTATION

www.nke-instrumentation.com





DEEP ARVOR

Data collection and positioning by IRIDIUM and GPS

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TECHNICAL SPECIFICATIONS TYPE DEEP ARVOR float

4000 SBE 41 CP with pump Seabird Electronics

- Salinity
 - Range 0 to 42 PSU
 - Initial accuracy ± 0.005 PSU
 - Observed drift < 0.01 PSU / 5 years
- Temperature
 - Range -5° 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 4100 dBars
 - Initial accuracy ± 2.4 dBar
 - Drift < 5 dBar / 5 years
 - Offset reset before dive at each surfacing

4330 Aanderaa optode for DO

- Range $0 \mu\text{M/l}$ to $500 \mu\text{M/l}$
- Accuracy $8 \mu\text{M/l} \pm 5\%$

FLOAT DIMENSIONS

- Overall Length 216 cm with antenna
- Hull Length 120 cm
- Hull Diameter 14 cm
- Damping collar 25 x 25 cm
- Weight 26 kg

FLOAT CONSTRUCTION

Carbon epoxy housing

BUOYANCY CONTROL

Principle Oil ballast with pump & valve
Positioning accuracy $\pm 50\text{m}$

OPERATION FEATURES

- Operation depth until 4000 dBars
- Sampling and transmission up to 2000 points
- Computed number of profiles
 - More than 150 cycles to 4000 bars/CTD
 - More than 225 1/5 4000/2000 CTD / DO
- Number of profiles programmable
- Operating temperature -2°C to $+35^{\circ}\text{C}$

POWER SUPPLY

Lithium cells

USER INTERFACE

- A - Bluetooth User Interface
 - Mission programming, float checking, etc.
 - Terminal: Personal Computer
- B - Remote control by IRIDIUM



TELEMETRY IRIDIUM system

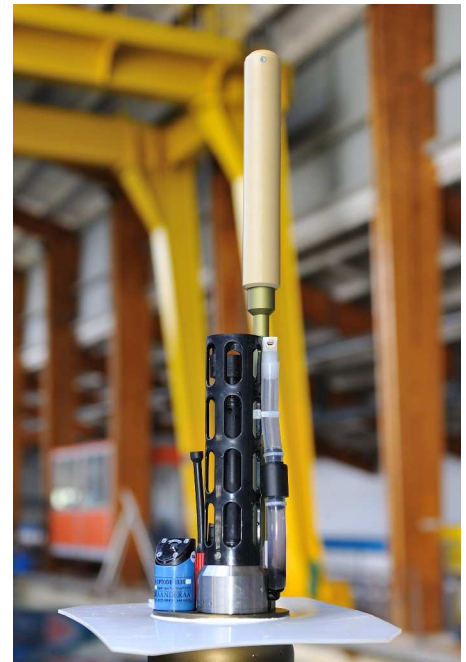
Iridium SBD
GPS

Resolution of transmitted measurements:

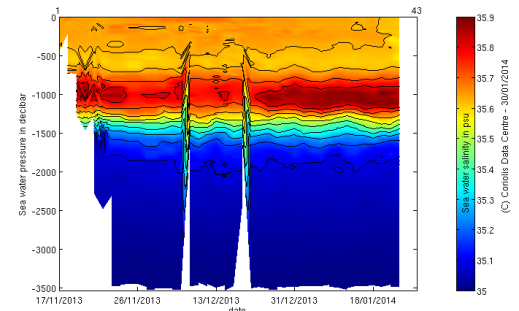
- Salinity 0.001 PSU
- Temperature 0.001 $^{\circ}$ C
- Pressure 0.1 dbar
- DO 0.002 $^{\circ}$

STORAGE CONDITIONS

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



Float Id : 6901597
Cycle number



Pictures thanks to ifremer's courtesy

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