

It's
what's
on
the
inside
that
counts.



THE FIRST UNDERWATER *In-Situ* MASS SPECTROMETER.

The In-Spectr® from AML is the world's first commercially available portable underwater mass spectrometer. So now, instead of waiting days to get results from an off site laboratory, the In-Spectr® can be submerged in-situ to continuously collect samples. The In-Spectr® operates using a multi-channel peristaltic pump and a quadrupole mass filtering system. The In-Spectr® especially excels when considering its ability to produce results when you want them. NOW. Because the In-Spectr® operates in real-time, it delivers results to you in minutes.

Typical Applications:

- Petroleum Sniffing
- Hydrate Exploration
- Pollution Analysis



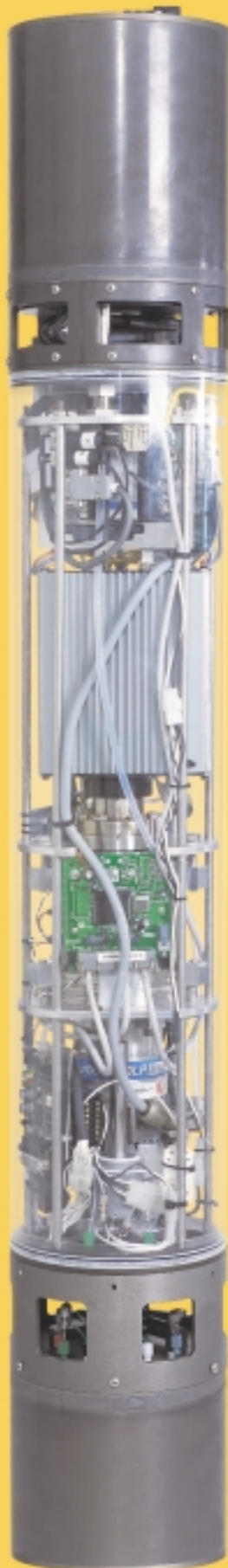
Flow Injection and Peristaltic Pump

Sample water is continuously pumped into 1 ml sample loop, which is periodically swept into a membrane introduction mass spectrometer (MIMS) system in the central vessel. The flow injection system is housed in a separate attached vessel, providing space for optional sensors and isolation from analyzer reducing risk of damage.



Turbo Pump and MIMS Probe

Samples are displaced by pumping de-ionized water from a reservoir bag into the MIMS interface probe. In this manner, changes in ion intensities for selected masses can be continually compared to background levels in the mass spectrometer.



Quadrupole MS and Electronics

The main components of the mass spectrometer are housed in this section. These components include mass analyzer, vacuum chamber, membrane introduction probe, associated electronics, turbo molecular vacuum pump and controller, CardPC™ motherboard with 72 MB DiskOnChip and a power distribution board. Components can be interfaced with an external computer to allow independent control of various components.



Diaphragm Pumps

Two diaphragm pumps serve as backing pumps to the turbo molecular pump. They are placed in a separate pressure vessel to provide vibration isolation and accomplish heat sinking more effectively. Most importantly, this approach allows pre-evacuation of the vessel prior to deployment, enabling higher performance and increased cycle time.



ELECTRICAL

- 24 volts DC external power
- 95 Watts power consumption
- Embedded Pentium™ PC controller
- LAN communications port

MASS ANALYZER

- Quadrupole based
- Membrane introduction source
- Vacuum: Varian turbo molecular with diaphragm backing pumps

MECHANICAL

- Weight: Air – 38.5kg (85 lbs.)
 Water – neutrally buoyant
- Dimensions: ø 19cm x 123cm
 (ø 7.5" x 53")
- Construction: Hard anodized aluminum
- Environmental: Operating: -5° to 50°C
 Storage: -40° to 70°C

HOME OFFICE

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Instrumentation
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