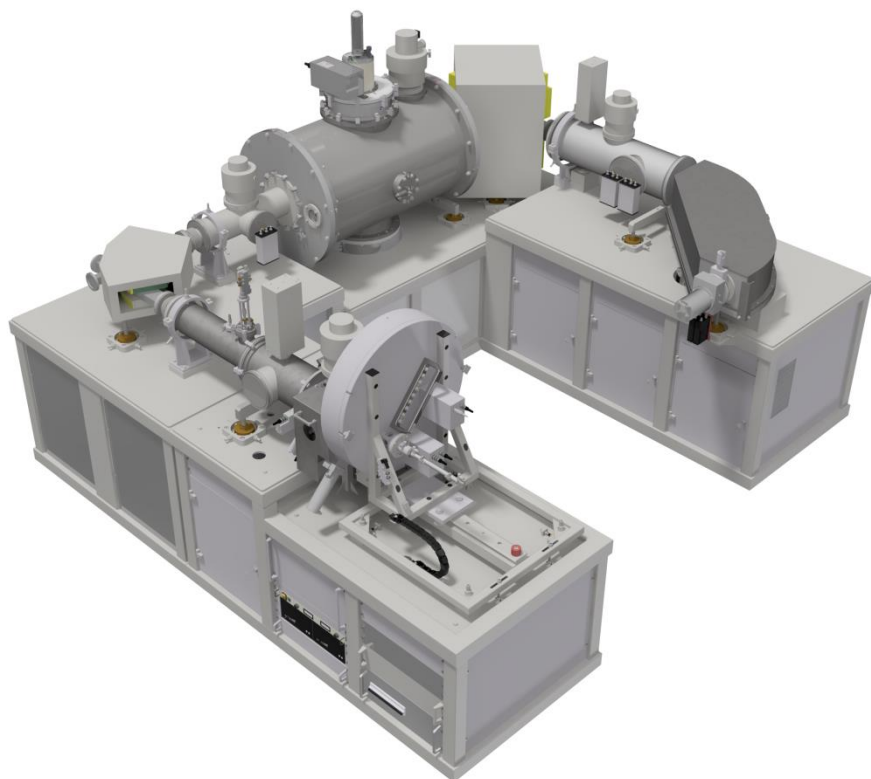


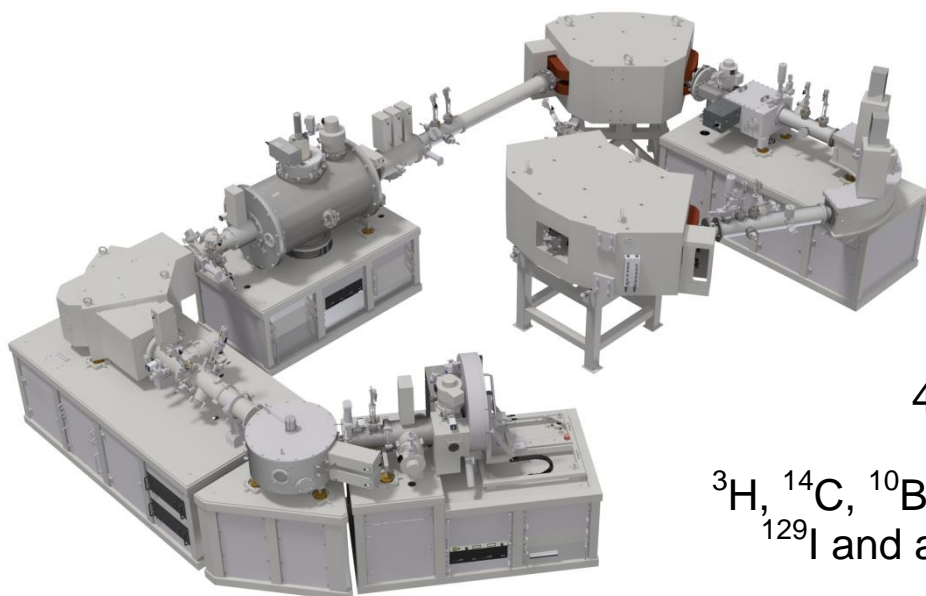
Sub-MV AMS systems

Models 4102Bo-AMS and 4103Bo-AMS



4102Bo-AMS

^{14}C dedicated



4103Bo-AMS

^3H , ^{14}C , ^{10}Be , ^{26}Al , ^{41}Ca ,
 ^{129}I and actinide AMS

HIGH VOLTAGE ENGINEERING

Particle Accelerators Systems for the scientific, educational and industrial research communities



HIGH VOLTAGE ENGINEERING EUROPA B.V.

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Features

- Element capability: ^3H , ^{10}Be , ^{14}C , ^{26}Al , ^{41}Ca , ^{129}I and actinides (^{238}U -AMS) and ^{14}C (^{238}U -AMS).
- Source embodiment at ground potential avoids necessity of a large high-voltage insulating cage and ensures safe and easy operation.
- One source for both solid and CO_2 gas samples admitted from ground potential.
- Interface for CO_2 samples and graphitization system available.
- Vacuum pump directly on source body in close vicinity to the ionizer ensures optimal pumping speed and low memory effect in the case of CO_2 samples.
- Targets stored in a carousel and transported to the source interior upon use to avoid sample cross-contamination.
- Interchangeable with 50 or 200 sample carousel.
- Permanent magnets for reduced power consumption on ^{238}U -AMS.
- Vacuum insulated accelerator: no use of SF_6 .
- Accelerator with internal power supply avoids vulnerable HV cable interfacing.
- Sophisticated X-ray suppression system for ^{238}U -AMS.
- Fast high voltage bouncer power supply for a cycling frequency as high as 100 Hz.
- True 2-dimensional data acquisition for ^{238}U -AMS.
- Automatic start-up & shut-down and automated tuning, system control & monitoring as well as on-line data analysis.
- Unattended measurements of all loaded samples.
- Fits in a single standard laboratory room.
- Quick and straight forward installation.

Overall system performance (preliminary)

	^{238}U-AMS	^{235}U-AMS
- Maximum terminal voltage	: 220 kV	330 kV
- Footprint	: 3.4 x 3.2 m ²	7.1 x 4.4 m ²
- X-ray level under normal operating conditions	: < 2 $\mu\text{Sv/hr}$ at 1 m from tank wall	
- Precision and background for 1 mg samples:		

Element	Isotope ratio	Background	Precision	at ratio
Hydrogen	$^3\text{H}/^1\text{H}$	1×10^{-15}	5 %	$\sim 10^{-13}$
Solid Graphite	$^{14}\text{C}/^{12}\text{C}$	2×10^{-15}	0.3%	$\sim 10^{-12}$
	$^{13}\text{C}/^{12}\text{C}$		0.2%	
CO_2 gas	$^{14}\text{C}/^{12}\text{C}$	1×10^{-14}	0.5%	$\sim 10^{-12}$
	$^{13}\text{C}/^{12}\text{C}$		0.3%	
Beryllium	$^{10}\text{Be}/^9\text{Be}$	2×10^{-15}	3 %	$\sim 10^{-12}$
Aluminium	$^{26}\text{Al}/^{27}\text{Al}$	1×10^{-14}	3 %	$\sim 10^{-11}$
Calcium	$^{41}\text{Ca}/^{40}\text{Ca}$	3×10^{-12}	3 %	$\sim 10^{-9}$
Iodine	$^{129}\text{I}/^{127}\text{I}$	2×10^{-13}	3 %	$\sim 10^{-11}$
Uranium	$^{236}\text{U}/^{238}\text{U}$	5×10^{-13}		

Sales offices in Europe and Japan

4102/4103Bo-AMS 002

HIGH VOLTAGE ENGINEERING EUROPA B.V. reserves the right to change specifications and features without prior notice unless part of a quotation or order.

