

## MEAP V

➡ **INSTANTANEOUS MEASUREMENT OF THE POTENTIAL ALPHA ENERGY OF RADON 222 SHORT-LIVED DECAY PRODUCTS.**

### Applications :

- Work environment monitoring
- Environment monitoring
- Monitoring in buildings
- Expertise



- In situ sampling on filtering media with instant analysis.
- Sampling is achieved by means of a rotary pump generating a pulse-free flow rate.
- The sampling flow rate is continuously regulated with an electronic mass flowmeter.
- Detection is performed by a silicon junction.
- Compliant with the requirements of International standard ISO 11665-3.
- MEAP V performs a global alpha count of the short-lived radon decay products in the form of radioactive aerosols collected on the filter.
- MEAP V proposes a choice of two measurement methods both based on the principles of decay timing.
- Parameter settings and data reading : locally or with the *MeapView2* software provided.

### ALGADE INSTRUMENTATION

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## Principle:

The volume potential alpha energy (VPAE) is determined from the count of the alpha decay of the radionuclides collected on a high efficiency filter.

Once sampling stops, the concentrations of the various emitters are calculated from the laws of radioactive decay, by regular counting at intervals of time set by the algorithm used.

MEAPV is equipped with an alpha spectrometer for better measurement traceability.

The energy range is 0 to 10 MeV over 128 channels, with a 0.1 MeV resolution.

MEAPV uses the algorithms of either Rolle or Thomas.

*Other methods are programmable on request.*

	ROLLE	THOMAS
Value measured	VPAE ( $\mu\text{J.m}^{-3}$ )	- VPAE ( $\mu\text{J.m}^{-3}$ ) - Activity concentration of Po218, Po214 and Bi214 in Bq.m <sup>-3</sup>
Cycle	12 mn	35 mn
Sampling	2 mn	5 mn
Counting periods	1	3
Detection limit ( $\mu\text{J.m}^{-3}$ )	0.09 ( $\mu\text{J.m}^{-3}$ )	<0.02 $\mu\text{J.m}^{-3}$ < 8 Bq.m <sup>-3</sup> at equilibrium.
Max values	0 to 9999 $\mu\text{J.m}^{-3}$	• 0 to 9999 $\mu\text{J.m}^{-3}$ • 0 to 999999 Bq.m <sup>-3</sup> .



## References to order :

1- Device	
MEAP V	P-520-126
2- Accessories	
Meap View2 Software	P-520-127
Disposable filters (x 100)	P-520-101
Filter holder	P-520-110



## Specifications :

### Filtering media:

Low absorption, low pressure drop and humidity resistant cellulose polymer filter, placed in a cardboard holder.  
Net sampling diameter 18 mm,  
The filter is placed into a mobile filter holder, allowing offset sampling.

### Sampling:

Carbon graphite rotary vane pump, 12 VDC brushless motor.  
Flow rate 7 l.min<sup>-1</sup>  
The flow rate is calculated by measurements of pressure and motor rotational speed and subsequent compensation of absolute pressure and temperature.  
Polling every 2 seconds.

### Detector :

450 mm<sup>2</sup> silicon junction  
Not affected by daylight  
Protected by a 2  $\mu\text{m}$  aluminized Mylar sheet  
A specific integrated circuit converts the electrical charges given by the detector into voltage pulses  
Background noise for detector and amplifier : < 0.5 pulses. min<sup>-1</sup>

### Monitoring :

16 bits Microcontroller board  
Clock Frequency 8 MHz  
Display by OLED screen 64 x 128 mm (h\*w)  
2 push buttons keyboard

### Environment :

0°C to +45°C / 10-90 % relative humidity  
IP code : IP54  
Sound level : < 67 dBA  
Conforms with standards CEM EN 55022 and CEI 61000-4

### Housing :

AlMgSi painted alloy  
L\*w\*h : 340\*190\*91 mm.  
Weight: 3.2 kg  
Protection cover

### Power supply :

Lithium Phosphate Battery 19.8V, 2.3 Ah  
Capacity : 1.2 Ah  
Autonomy : 16 hours or 40 cycles  
External battery charger  
Charging time : 2 hours

### Parameter setting and data download:

Via infrared reader linked to the PC through a USB port.

### MeapView2 software:

For setting operating parameters, downloading data and associated spectra.

### MEAP V is supplied with:

- Filter holder
- 100 disposable filters
- Battery charger
- Infrared reader
- MeapView2 software
- Inspection certificate
- Carrying case
- Manual