RADHOME P

FOR CONTINUOUS MEASUREMENT OF RADON* VOLUME ACTIVITY IN BUILDINGS.

❑ APPLICATIONS

- Air quality monitoring in buildings and public places.
- Monitoring of radon volume activity vs time
- Expertise

❑ **Passive** measurement, no disturbance of the environment.

❑ **Continuous** measurement with programmable cycle

❑ Three months of independent operating time for power supply and memory capacity

❑ Power supply from 2 x 1.5 Volt alkaline batteries.

❑ Settings and data readout with ***RnView2*** software

❑ LEDs indicating power and low batteries

❑ Compact size

❑ Compliant with international standards **ISO 11665-4** and **ISO 11665-5.**

Specifications ⇨

* In this document, RADON refers to radon 222

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RADHOME P

SPECIFICATIONS

Radon measurement:
Radon penetrates the detection volume through a filter collecting all solid descendants.
Inside the volume is a silicon detector. Radon activity will be determined by measuring the α activity of ^{218}Po impacts on this detector.
Volume activity of ^{222}Rn is calculated with the calibration factor.

Measurement sensitivity: 2 $Bq.m^{-3}$ / $pulse.h^{-1}$ (typical).
Maximum concentration > 1 $MBq.m^{-3}$

Detection limit (DL) and relative uncertainty as a function of cumulative exposure time.

	DL
1 j	48 $Bq.m^{-3}$
2 j	34 $Bq.m^{-3}$
7 j	22 $Bq.m^{-3}$
30 j	16 $Bq.m^{-3}$

	10%	20%
100 $Bq.m^{-3}$	< 240 h	< 72 h
400 $Bq.m^{-3}$	< 48h	< 12h
1000 $Bq.m^{-3}$	< 24 h	< 6h

Relative uncertainty calculated for a coverage factor = 2

The radon chamber used for calibration is linked to LNHB, the French national metrology lab for ionizing radiations.

Additional sensors:
Shock sensor: detection of impacts on the appliance
Battery voltage: 0.1 V (resolution)

Power supply : 2 xD type alkaline batteries.

Operating time : 3 months @ 20°C.

Monitoring:
Microcontroller board 14 bits with RISC architecture.
Back-up of parameters and data in the event of power failure.

Measuring cycle:
Intervals of 15 min (recommended), 20, 30, 60, 120, 180 or 240 min.

Memory capacity:
8Mb Flash memory (saves data in the event of power failure).
Storage capacity: < 12 months for a measuring cycle of 15 min.

Parameter setting and data download:
Locally, direct connection to a PC via a RS232 link (19200 Bauds, 8bits, 1 stop).
RnView2 software operating under Windows XP, VISTA, SEVEN .

Housing: AlMgSi painted alloy
H*L*w = 70*270*230 mm.
2.5 kg

Operating conditions:
5°C to +40°C
10-90% of relative humidity
Protection index: IP54

RadhomeP is delivered with :
- ***RnView2*** software
- 2 alkaline batteries
- Carrying case
- RS232 cable
- Calibration certificate indicating the calibration factor of the radon sensor
- User guide

RnView2 software:

Monitoring:
- Parameter setting, initialisation and **Radhome P** memory download, data backup.
- Exportation of the data in a MS Excel file
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Visualisation
- Curves as a function of time
- Determination of the mean radon volume activity over a preset period of time.
- Selection of the curves to be represented (ex: radon and battery voltage vs time),
- Window displaying binary information (shocks),
- Zoom on the x (time) and y axis for each curve,
- Scroll through readout, totals, curve smoothing, printing and screenshots.

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References:

Radhome P	P-561-100