

# Radhome HRB Radon Monitor and network

○ CONTINUOUS MEASUREMENT OF RADON\* VOLUME  
ACTIVITY IN BUILDINGS

## □ APPLICATIONS

- Monitoring of air borne radon in clean areas (laboratories, buildings ...)
- Monitoring of underground work environment
- Single point measurement or networked



Radhome HRB Monitor

+ up to 14 additional sensors



□ Two configurations are available:

- Single point measurement : **Radhome HRB monitor** with onboard radon detector, PC and touchscreen.
- Network : up to 14 **additional radon detectors** can be linked to the **Radhome HRB monitor** to build a network of radon measurement points.

□ **High sensitivity Radon Measurement** is obtained by the association of an optimised measuring chamber and an electric field.

□ **Passive Measure** : no disturbance of the measuring medium.

□ The touch screen allows display of data in real time and user dialog.

□ Onboard Monitoring software.

□ Radon measurement complies with French standards **NF ISO 11665-5**.

Specifications



\* « RADON » refers to radon 222 in this document

ALGADE - 1, Ave. du Brugeaud - B.P. 46 - 87250 Bessines sur Gartempe - FRANCE  
Tél. : +33 (0)5 55 60 50 00 Fax +33 (0)5 55 60 50 59 E-mail : [algade@algade.com](mailto:algade@algade.com)  
<http://www.algade.com>

# Radhome HRB Radon Monitor and network

## SPECIFICATIONS

**Specifications common to the Radhome HRB and its additional detectors :**

**Radon measurement:**

Radon enters the detection volume through a filter blocking all solid descendants.

Radon activity is determined by measuring the  $\alpha$  activity of  $^{218}\text{Po}$  collected on a silicon based detector by an electric field.

$^{222}\text{Rn}$  volume activity is calculated with the calibration coefficient.

Measure sensitivity :  $2 \text{ Bq.m}^{-3}$  by  $\text{imp.h}^{-1}$  (typical).

Maximum concentration  $> 1 \text{ MBq.m}^{-3}$ .

Detection Limit ( DL ) and relative uncertainty as a function of the exposure.

	DL		10%	20%
1 h	$8 \text{ Bq.m}^{-3}$	$50 \text{ Bq.m}^{-3}$	$< 12 \text{ h}$	$< 4 \text{ h}$
2 h	$4 \text{ Bq.m}^{-3}$	$100 \text{ Bq.m}^{-3}$	$< 6 \text{ h}$	$< 2 \text{ h}$
6 h	$3 \text{ Bq.m}^{-3}$	$400 \text{ Bq.m}^{-3}$	$< 2 \text{ h}$	$< 1 \text{ h}$
12 h	$2 \text{ Bq.m}^{-3}$	$1000 \text{ Bq.m}^{-3}$	$< 1 \text{ h}$	$< 1 \text{ h}$
24 h	$1 \text{ Bq.m}^{-3}$	<i>Relative uncertainty calculated for a coverage factor = 2</i>		

*The radon chamber used for calibration is linked to the french LNBH, national metrology laboratory in the field of radiation.*

**Temperature and Humidity Sensors:**

0.1°C absolute precision

10 to 95 % humidity range,  $\pm 3$  % precision

The precisions on both sensors allow adjustment in the radon result.

**Voltage Control**

**Operating conditions :**

+5°C to +40°C / 10-90 % relative humidity.

Protection Index IP41.

**Radhome HRB Monitor:**

Measure cycle: 1 to 240 min by 1 min increments.

**Management :**

Onboard PC operating under Windows 7

15'' touch screen

Data storage on a USB key

Powering and management of up to 14 additional detectors.

**Powering :** Mains – 110 / 230 V

**Housing :**

CEM housing, painted steel

H\*L\*D : 400\*400\*200 mm. Weight: 15 kg.

**Additional detectors:**

- metrological specifications identical to the radon monitor
- Powering via the radon monitor
- Data download via an RS485 connexion
- Maximum distance of 100 m between detectors and Radhome HRB.

**Housing:**

CEM housing, painted steel

H\*L\*D : 230\*190\*180 mm. Weight: 4 kg.

**HRB Radhome comes with:**

- Monitoring software
- USB storage key
- Calibration certificate indicating the calibration coefficient of the radon detector
- Documentation

## Monitoring software :

**Management:**

- Setting of the cycle of measure, and of the period of time visualised onscreen, initialisation
- Storage of all recorded data on USB key in text format, can be used under MS EXCEL.

**Visualisation of measures as a function of time :**

- For each detector, selection of a data type, display in a window (for example: radon and temperature vs time),
- Display of the current measure in large format,
- Display of current operating informations,
- Zoom on the time scale and y-axis for each curve.

## Ordering :

Radhome HRB Monitor

P-563-107

Cable

P-545-112 (length TBD)

Additional Detectors

P-563-104

Detector – Monitor link