

# Corentium Plus

by Airthings



## DOWNLOADS



## DESCRIPTION

### BATTERY LIFE

Approximately 1.5 years of continuous monitoring  
3 replaceable AAA batteries

### DISPLAY

1-day, 7-day, and long-term average radon level

### FUNCTIONS

Reset button  
Mode button - when pressed, displays total days measured  
Free web-based reporting  
Custom Reporting and Analysis (CRA) software

### VERSIONS

Available in picocurie and becquerel

### ACCURACY

Unaffected by other radiation

#### After 7 days

At least 68% of measurements are within 12% of the actual radon level, measured at 50 - 350 Bq/m<sup>3</sup>

#### After 1 month

At least 68% of measurements are within 9% of the actual radon level, measured at 90 - 220 Bq/m<sup>3</sup>

## PACKAGE CONTENTS

Radon detector  
3 AAA batteries  
Instruction manual

Product codes  
EAN: 7090031102319  
SKU: 395

Package unit weight  
246 grams

## SPECIFICATIONS

Dimensions in mm: 120 x 69 x 25.5  
Weight: 130 grams  
Measurement range: 0 - 9999 Bq/m<sup>3</sup>

Radon sampling: Passive diffusion chamber  
Detection method: Alpha spectrometry  
Operation environment: 4°C to +40°C  
Sensors: Temperature, humidity, and barometric pressure

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The Corentium Plus is a sophisticated, convenient and powerful monitor designed to provide accurate and detailed data for a thorough analysis of radon concentration. It continuously records radon concentrations in 1-hour cycles, allowing users to download all measurement data to a PC for detailed analysis.

The Corentium Plus is additionally equipped with sensors for air pressure, temperature and humidity, the measurement data of which are also continuously recorded and can be downloaded and transferred to other applications.

Built with multiple state-of-the-art sensors, the Corentium Plus will record everything needed to fully understand fluctuations in radon concentration.

The Corentium Report and Analyze (CRA) software, which comes with the Corentium Plus, allows the user to download all the data from the monitor and each sensor to a PC. The software functionalities are seemingly endless, including the key features of generating custom graphics, custom professional reports and converting all the data into a csv-file (Excel document).

Corentium Plus samples indoor air through a passive diffusion chamber, and then uses alpha spectrometry to precisely calculate the radon level. Detection is done using silicon photo-diodes to both count and measure the energy of alpha particles resulting from the decay chain of radon gas. The battery lifetime under normal operation is approximately 18 months.

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## TESTS

### **National Institute of Radiological Sciences (NIRS), Japan - July 2011**

The CANARY monitors had a deviation of 3% of the NIRS reference value.

### **Federal Office for Radiation Protection (Bfs), Germany - September 2012**

21 monitors were tested against reference monitors, and all were statistically measured to be within the laboratories own measurement uncertainty – which is 7%.

### **Federal Office for Radiation Protection (Bfs), Germany - June 2013**

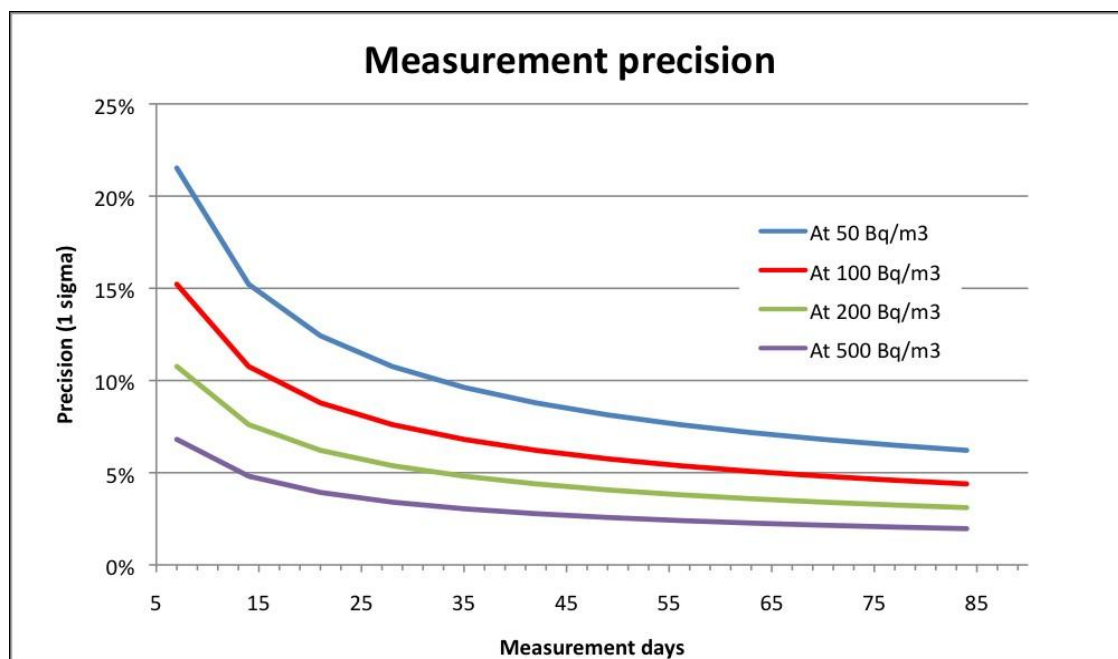
6 monitors were exposed for  $1100 \text{ h} \cdot \text{kBq/m}^3$  and showed an average of 3.6% below the BfS reference value.

### **Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France – fall 2013**

20 monitors were tested over 3 months at  $170 \text{ Bq/m}^3$ . The average for the 20 tested devices was  $167 \text{ Bq/m}^3$ .

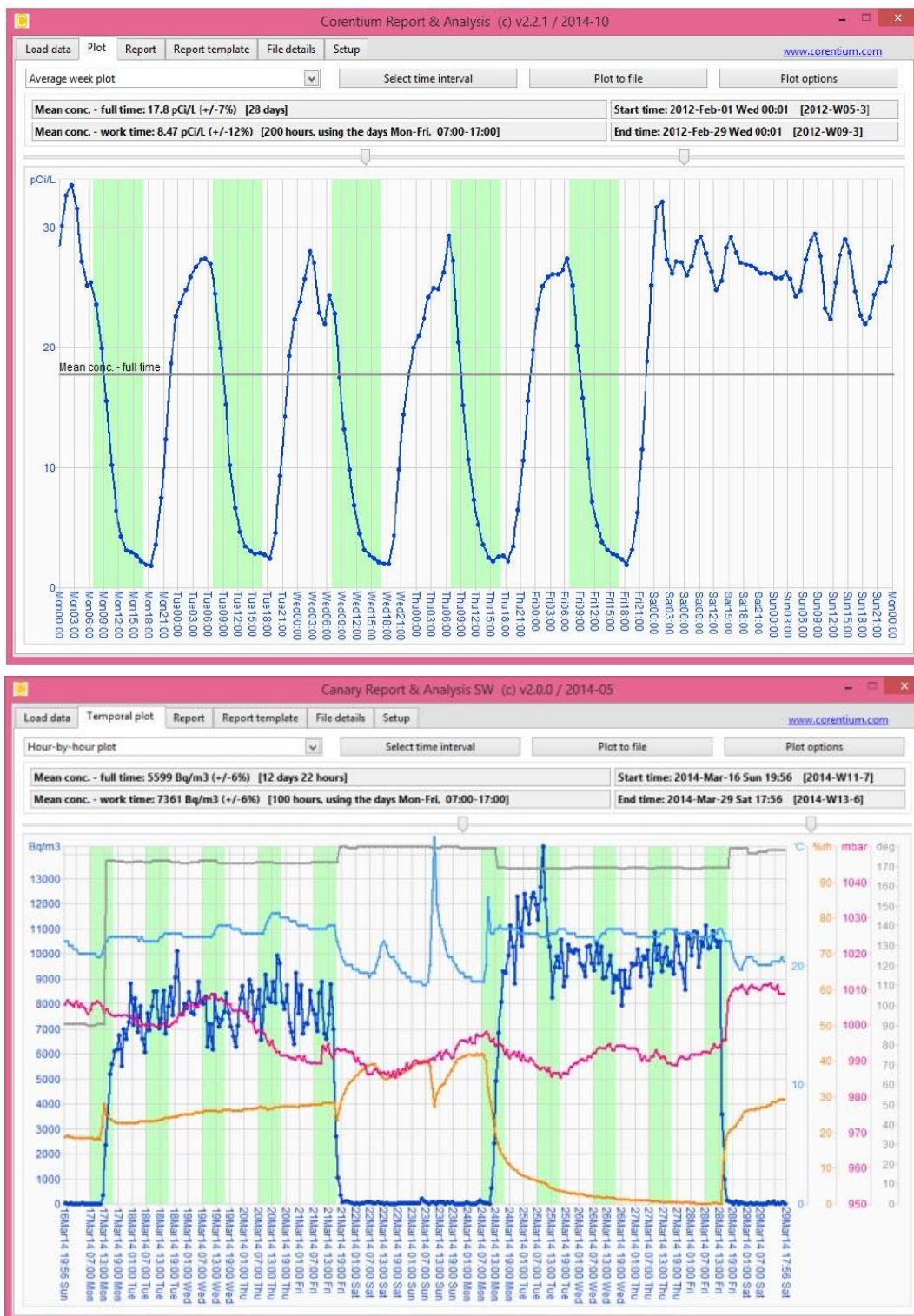
Tests in radon laboratories in the Czech Republic verify that Corentium Plus shows the same radon values irrespective of any changes in temperature, humidity, aerosols and electromagnetic fields.

## PRECISION



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## CORENTIUM REPORT AND ANALYSIS - SOFTWARE



Screenshots of measurement data plots from the 'CRA' Software

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## SPECIFICATION & TECHNICAL DATA



### SOFTWARE

- Windows Vista - Windows 8
- Fast and reliable data upload with Micro USB cable
- Selecting day or hour to study temporal variations
- Merging (combining) results from more than one monitor to increase sensitivity
- Easy one-click standard reporting - Customizing own reports
- Plots:
  - Average per day
  - Hour to hour variations
  - Accumulated day and week level
  - Indication in plot for action level
  - Temperature, relative humidity, atmospheric pressure

### LCD display

- Long-term average; last 12 months since RESET
- Short-term averages; last day and last week
- Exposure time
- Anonymous display option

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## SPECIFICATION

Dimensions:	120mm × 69mm × 25.5mm
Weight:	130 grams (incl. batteries)
Battery powered:	3 x AAA Alkaline batteries (LR03)
Battery lifetime:	>18 months
Power consumption:	< 275 $\mu$ W
Radon Sampling:	Passive diffusion chamber
Detection method:	Alpha spectrometry
Diffusion time constant:	25 min
Internal memory capacity:	10 years radon concentration at 1h resolution

**Accuracy:**  $\pm 5\% \pm 5\text{Bq/m}^3$

### Precision:

After 1 week:  $<12\%$  at 50 - 350  $\text{Bq/m}^3$   
 $<8\%$  at  $>350 \text{Bq/m}^3$

After 1 month:  $<9\%$  at 90 - 220  $\text{Bq/m}^3$   
 $<6\%$  at  $>220 \text{Bq/m}^3$

### Measurement range:

Detection range: 0 – 50.000  $\text{Bq/m}^3$   
Upper display limit: 9.999  $\text{Bq/m}^3$

### Operation environment:

Temperature: 4°C to +40°C  
Relative Humidity: <95%

### Additional sensors:

- Temperature
- Relative humidity
- Atmospheric pressure
- Tilt (tamper detect)