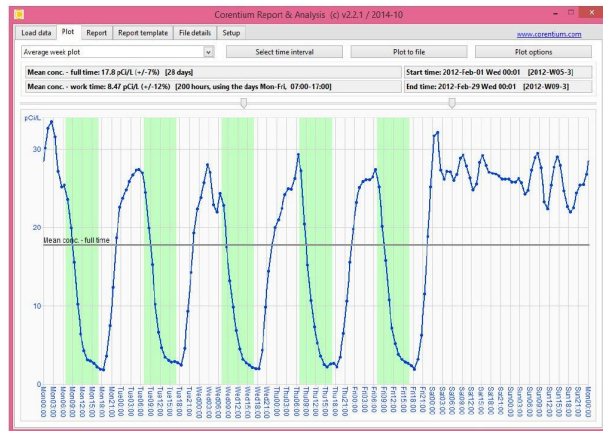


# CANARY PRO II

## Radon Monitoring System



The CANARY PRO II 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 CANARY PRO II 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 CANARY PRO II will record everything needed to fully understand fluctuations in radon concentration.

The Corentium Report and Analyze (CRA) software, which comes with the CANARY PRO II, 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).

CANARY PRO II 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 instrument is calibrated to reference instruments in accredited laboratories. 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**

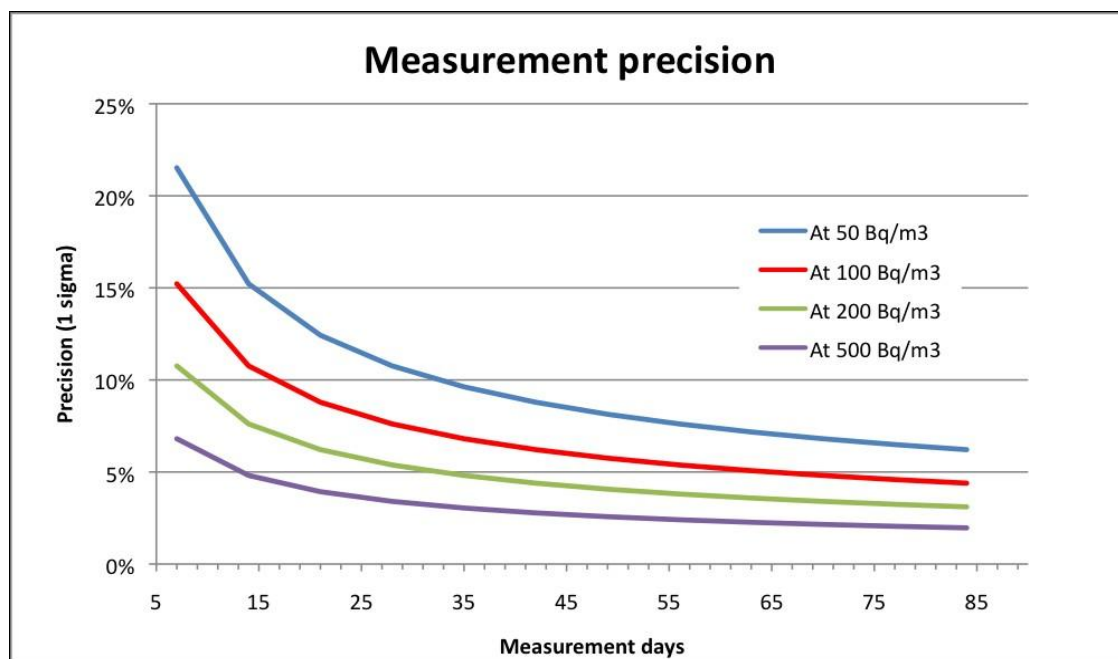
6 monitors were exposed for 1100 h\*kBq/m<sup>3</sup> and showed an average of 3.6% below the BfS reference value.

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

20 monitors were tested over 3 months at 170 Bq/m<sup>3</sup>. The average for the 20 tested devices was 167 Bq/m<sup>3</sup>.

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

### PRECISION



# CANARY PRO II Radon Monitoring System

## CANARY PRO II - SOFTWARE "CRA"



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 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 Bq/ m<sup>3</sup>  
 $<8\%$  at  $>350$  Bq/ m<sup>3</sup>

After 1 month:  $<9\%$  at 90 - 220 Bq/ m<sup>3</sup>  
 $<6\%$  at  $>220$  Bq/ m<sup>3</sup>

### Measurement range:

Detection range: 0 – 50.000 Bq/ m<sup>3</sup>

Upper display limit: 9.999 Bq/ m<sup>3</sup>

### Operation environment:

Temperature: 4°C to +40°C

Relative Humidity:  $<95\%$

### Additional sensors:

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