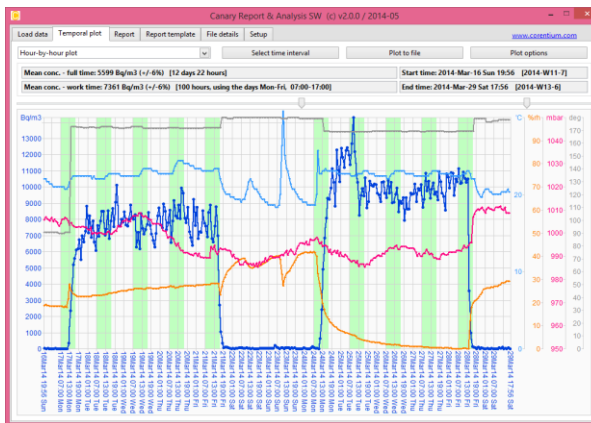


CANARY pro Radon Monitor System



Measuring radon
has never been easier!

Designed and manufactured in Norway
Corentium AS, Oslo, Norway

Distribuito da: **ORIONE DI BISTULFI srl - Via Moscova 27 - 20121 MILANO**

02.6596553-info@orionesrl.it-www.orionesrl.it

CANARY pro

Digital system for continuous monitoring of radon gas in indoor air. Download data to PC for analysis and documentation - with the Corentium Report and Analyze (CRA) software. Battery power gives the flexibility of placing the monitor in any location of the building, in order to get a better overview of the radon level in a home, workplace, school or kindergarten.

CANARY pro samples the indoor air through a passive diffusion chamber, and uses alpha spectrometry to precisely calculate the radon level. Detection is done using silicon photo-diodes, both to count and to measure the energy of alpha particles resulting from the decay chain of radon gas. The monitors are calibrated during production, and are not sensitive to changes in temperature, humidity, aerosols and electromagnetic field -, if operated within the recommended operation environment. Battery lifetime under normal operation is more than 18 months.

SOFTWARE

- Windows Vista - Windows 8
- Fast and reliable data upload with Micro USB cable
- Selecting day or hour to study temporal variations
- Merging results from more monitors 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

SPECIFICATION

Dimensions: 120mm × 69mm × 25.5mm

Weight: 130 grams (incl. batteries)

Battery powered: 3 × AAA Alkaline batteries (LR03), battery lifetime >18 months

Power consumption: 275µW

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: ± 5% ± 5Bq/m³

Precision:

- After 1 week: <12% at 50 - 350 Bq/m³
<8% at >350 Bq/m³
- After 1 month: <9% at 90 - 220 Bq/m³
<6% at >220 Bq/m³

Measurement range:

- Detection range: 0 – 50.000 Bq/m³
- Upper display limit: 9.999 Bq/m³

Operation environment:

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

Additional sensors:

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

TESTS

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

Intercomparison test where most of the other participants – being only alpha track detectors – typically had a result within $\pm 20\%$ of the reference value. This implies that measuring for 2 months at 100Bq/m^3 with an alpha track detector from a random supplier, the measurements will show values from 60Bq/m^3 up to 140Bq/m^3 with 95% probability. The CANARY monitors had a deviation of 3% of the NIRS reference value. For a 2 month measurement period at 100Bq/m^3 one can expect that a random CANARY monitor shows between 90Bq/m^3 and 110Bq/m^3 .

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

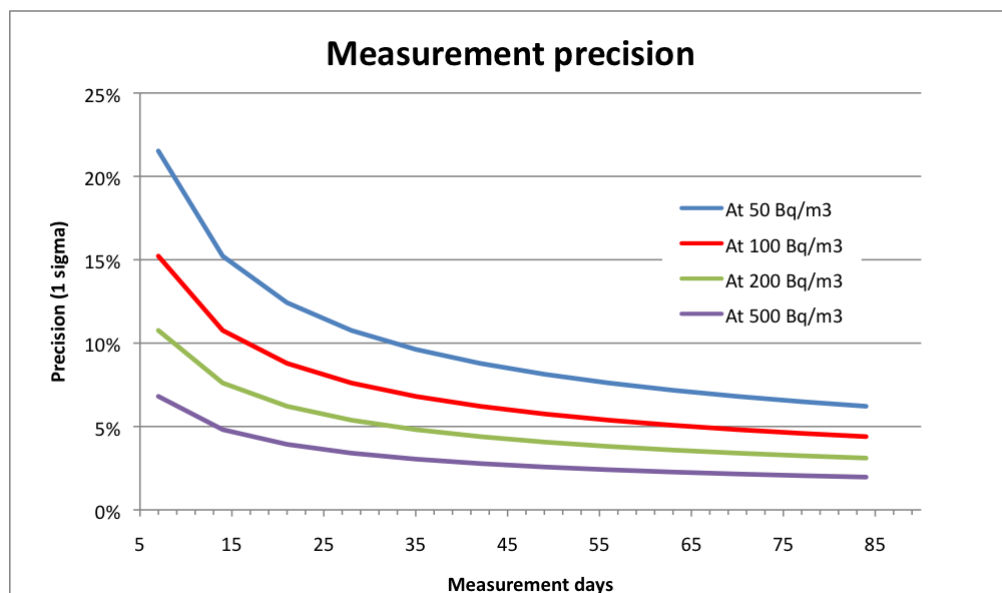
6 monitors were exposed for $1100\text{h}\cdot\text{kBq/m}^3$ and showed an average of 3.6% below the BfS reference value.

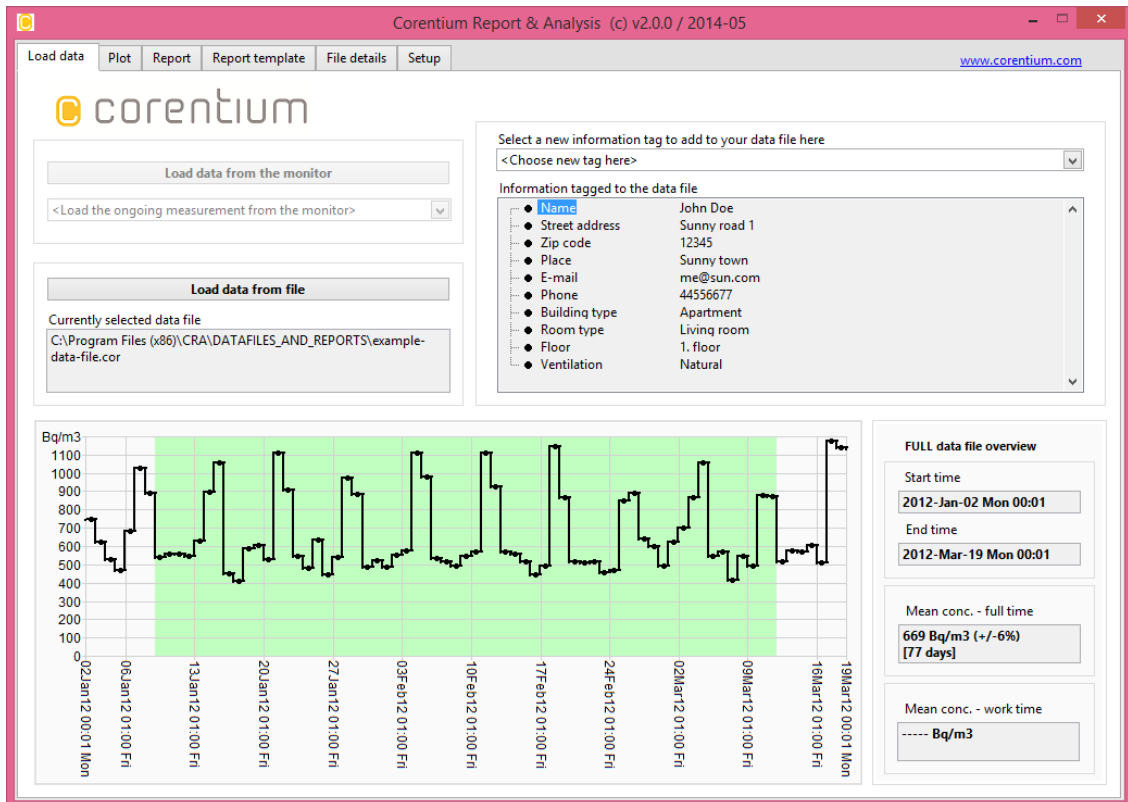
Institut de Radioprotection et de Sûreté Nucléaire (IRSN), France – fall 2013

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

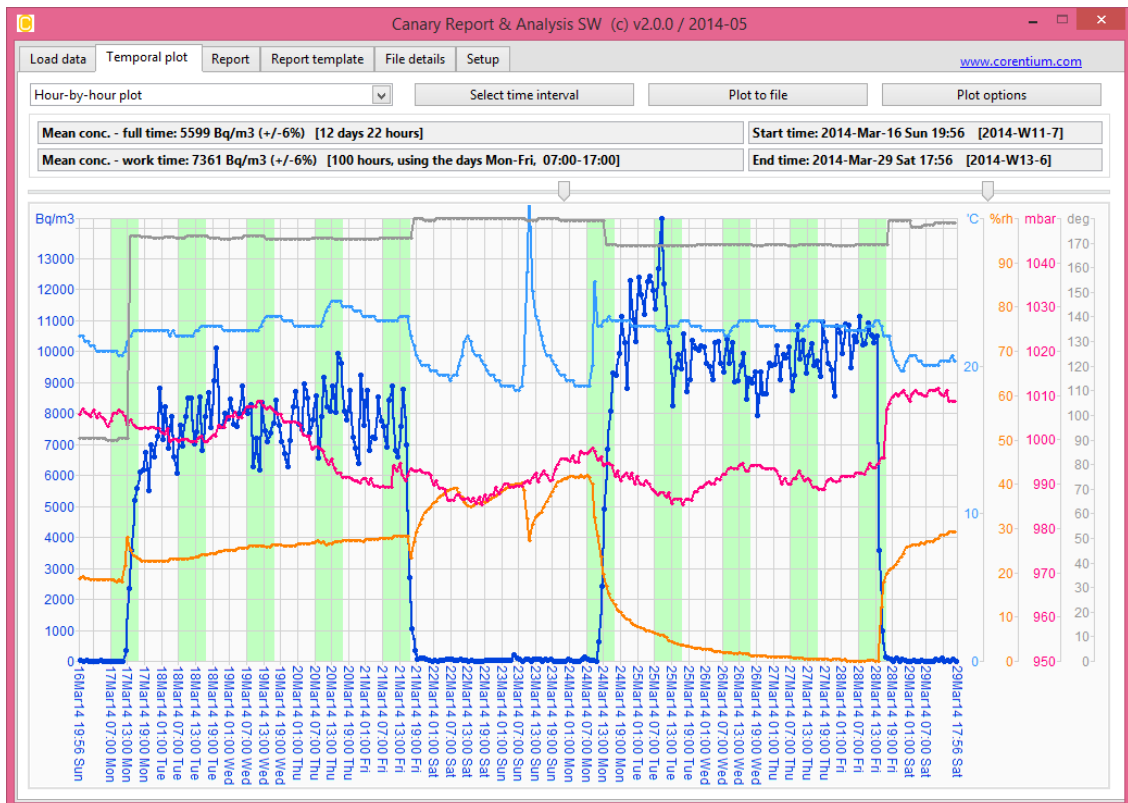
Tests in radon laboratories in the Czech Republic verify that Canary shows the same radon values irrespective of any changes in temperature, humidity, aerosols and electromagnetic fields.

PRECISION





Screenshot of main menu



Screenshot of a two weeks plot from all sensors