



PYLON ELECTRONICS INC. Canadian owned and operated

**Special points of interest:**

- AB6 Update
- AARST Attendance
- Cell Contamination

# Newsletter

Issue # 3  
October 2011



## AB6 Update

We are pleased to announce that the first Production AB6 “rolled off the line” this October. Several of this first build are already sold. Congratulations to everyone involved.

With the amount of enquiries we’ve already had, we are impressed with the immediate world-wide interest in the new AB6.



## AARST 2011 International Radon Symposium

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AARST, The American Association of Radon Scientists and Technologists is presenting it’s 21st International Radon Symposium in Orlando, Florida, USA, October 16-20 2011.

Pylon will be there. Stop by our booth and say hello.

For more information visit

<http://www.aarst.org/>

“Some of those original AB-5s are still running fine and doing a day’s work today.”

### Did you know?

The first AB-5s came off the line in the early 1980s and we’ve been making them ever since, with a few upgrades.

Some of those original AB-5s are still running fine and doing a day’s work today.

The oldest we’ve seen lately is AB-5 212, owned and operated by the State of Maine, USA.

AB-5 212 was here for calibration in July of this year. It gave us some trouble, as the electronic components on board are failing, and will likely continue to do so. They are, after all, over 30 years old! The problem was an electrolytic capacitor in the power circuitry that was failing and causing noise. After replacing the capacitor, it calibrated just fine. You keep going AB-5 212 !!!

Another AB-5 that we must mention is AB-5 600 owned and operated by Joe Mahr, American Build-



ing Inspection and Trading **AB-5 212** Company Inc. This AB-5 is in almost original (mint) condition, and perhaps in the best condition of any older AB-5 out there. It passed the electronic assessment flawlessly with perfect numbers Aug 23 2011. Joe says “We are happy to have purchased the Pylon AB-5 and have used it on a regular basis since the day we purchased it. This unit has served us well for more than 25 years.” Congratulations Joe and AB-5 600 !!!

Do you have an OLDER AB-5 that is still out there working?

If so, we would love to know about it.

Special thanks to Kimberly Buffum, State of Maine and to Joe Mahr, American Building Inspection and Trading Company Inc. for letting us talk about their AB-5s.

**“There is more radiation in your ionizing smoke detector (Americium 241 inside), than in one of our typical check sources. Did you know?”**

## Technical Corner

### Scintillation Cell Contamination

The Lucas cells we use do require some care.

Very little maintenance is required for the cells. The cells may be cleaned with a soft cloth with a mild cleanser. Do not use isopropyl alcohol to clean the cells. The Swagelok connectors should occasionally be disassembled, cleaned, and reassembled to ensure a leak tight connector.

The other thing that can happen to the cells is contamination.

There are several ways that this can happen.

#### Short-Lived Radon Daughters:

RaA, RaB, and RaC remain within the cell even after flushing. The cell must be left for several hours (preferably overnight) so that most of these short-

lived radon daughters will decay away. This means that a cell that is used for a grab sample measurement should only be used for one measurement a day.

#### Thoron Daughters:

If thoron gas was present in the sample, ThB and ThC will plate out on the cell wall. Thoron daughter activity is regulated by a half-life of 10.6 hours and will remain attached to the cell wall despite being flushed. It may take more than 24 hours for the background count rate to decay to an acceptable level.

#### Long-Lived Radon Daughters:

Radon gas eventually decays into Pb-210 and Po-210. Very small amounts of these long-lived isotopes accumulate on the inside walls of the cell from each measurement. This results in an unavoidable and gradual buildup in the background count rate, usually

over several years. The amount of buildup is proportional to the number of measurements, the length of time that samples are in the cell, and the activity of the samples. It is possible to minimize the effects of Pb-210 buildup by flushing the cells with nitrogen, aged air, or filtered air after counting, especially if the sample has a high radon content.

Cells to be used for high and low radon levels can be segregated so that cells which have developed a high background level can be reserved for samples where high radon levels may be expected to occur (such as soil gas measurements or for studies of buildings with known high radon levels). If and when the background level gets too high to take meaningful measurements, the cell should be replaced.

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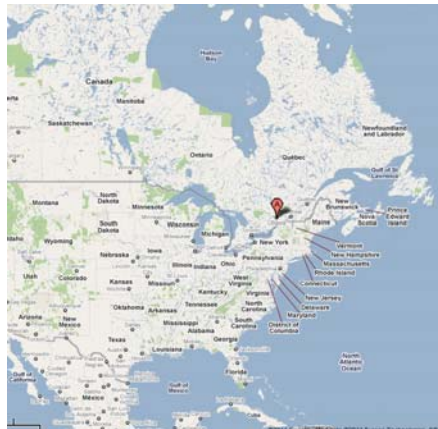
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Pylon Electronics Inc., a Canadian company, was incorporated in 1955. Our policy of significant investment in people and products ensures a distinguished reputation for quality in the products and services that we market.

Established in 1977, Pylon's Instrument Manufacturing Division is recognized as an international leader in the design and manufacturer of state-of-the-art instruments for the detection and measurement of radon, thoron, and their progeny.

Through a network of authorized distributors in over 43 countries, Pylon's Instrument Manufacturing Division continues to maintain a leadership role as a provider of innovative, high quality, accurate radon and thoron measurement solutions throughout the world.

In addition to manufacturing an extensive line of equipment for the measurement and detection of radon, thoron, and their progeny, Pylon maintains and operates two well equipped radon and thoron chambers for the performance of exposures and equipment calibrations that are traceable to NIST (National Institute of Standards and Technology) and/or NRC (National Research Council of Canada) standards.



Google Maps link <http://maps.google.ca/maps?g=45.343534,-75.704105&num=1&dl=45.344077,-75.703118&spn=0.011643,0.020707&ie=UTF8&ll=45.344077,-75.703118&spn=0.011643,0.020707&z=16>

Visit us at

[www.pylonelectronics.com](http://www.pylonelectronics.com)

*Please feel free to forward this Newsletter to all your colleagues.*

## Technical Corner Continued

### Radon Gas Absorption:

Small traces of radon gas can be absorbed by the scintillator binding material and the window. This is usually only noticeable when low level measurements follow very high measurements. The radon gas can be removed by repeatedly flushing the cell.

inside the cell and can be prevented by always using an in-line filter. Such contamination can sometimes be removed by flushing the cell with nitrogen, aged air, or filtered air.

### Airborne Alpha Particles:

It is recommended that an alpha particle filter be used to prevent airborne alpha particles from entering the cell. By using a filter, it will be ensured that the counts will only be the result of radon gas and its daughters.

### Other Long-Lived Radioisotopes:

Contamination from materials such as Ra-226, Am-241, and Th-230 can occur. This is more likely to happen with soil sampling or measurements in industrial locations than in residential measurements. This type of contamination is usually associated with visible dirt or dust



**Selection of Pylon Cells**