

AB6

Active Cell Detectors

The reliable, versatile, and user-friendly solution for a wide variety of radiation monitoring applications.



The Active Cell Detectors are Lucas type cells that are used on our next generation laboratory-grade instrument, the AB6 Portable Radiation Monitor, for fast, accurate measurement of radon levels.

Every bit as reliable as our previous cells, they have been designed to match the detection specifications of the AB-5 active cell detectors to maintain detection compatibility.

Backed by over 30 years of radon and thoron detection and measurement expertise, superior engineering, and world-class customer service, the AB6 and active cells provide radon detection you can depend on.

Key Features

High Sensitivity	Can detect low radon levels
Versatile	Can be used for both Continuous and Grab sampling measurements
Simple Operation:	Easy to use & transport
Radiation Immunity	Immune to beta and gamma radiation
Stable	Insensitive to temperature and humidity changes

Applications

When combined with the AB6 radiation monitor, these active cells can be used for:

- Radon/Thoron Analysis
- Autonomous Continuous Monitoring
- Residential Monitoring
- Industrial Monitoring
- Environmental Monitoring
- Radioactive Site Monitoring
- Mining / Ore Processing
- Mineral Exploration
- Entry Point Testing (Radon Sniffing)
- Meteorological Studies
- Geological Studies
- Education Building Materials Research
- Health Protection ... And More



Lucas ZnS(Ag) scintillation cells are frequently used to measure radon gas. When radon decays into its daughter products, it gives off an alpha particle. When the alpha particle strikes the ZnS(Ag) scintillator that coats the inside of the cell, the scintillator gives off a photon of light. This photon is detected, converted to an electrical pulse, and amplified by the photomultiplier tube (PMT) in the monitor. The monitor further amplifies the pulse, discriminates out false pulses, and counts the number of pulses in periods of time. With other factors, this provides a measure of the radon that is present in the sample.

Technical Specifications

GENERAL

Radiation Detected:	Alpha
Scintillator:	ZnS(Ag)
Alpha Energy Range:	4.5 to 9 MeV
Accuracy ¹ :	± 4%
Background:	< 1 cpm
Calibration ² :	Upon Request
Maximum Flow Rate ³ :	10 l/min
Connectors:	Quick Connect Fittings
Mating Connectors:	Swagelok B-QC4-S-4HC
Primary Construction Material:	Aluminum

DETECTION SPECIFICATIONS

600A

Lowest Activity Detectable:	27.4 Bq/m ³ (0.74 pCi/l)
Sensitivity:	0.037 cpm/Bq/m ³ (1.36 cpm/pCi/l)
Active Volume:	271 ml (9.2 oz [US Liquid])

610A

LAD:	48.1 Bq/m ³ (1.30 pCi/l)
Sensitivity:	0.021 cpm/Bq/m ³ (0.76 cpm/pCi/l)
Active Volume:	154 ml (5.2 oz [US Liquid])

ENVIRONMENTAL

Operating Temperature Range:	0 to +50 °C (32 to +122 °F)
Storage Temperature Range:	-20 to +60 °C (-4 to +140 °F)
Relative Humidity Range:	0 to 90 % (Non-Condensing)

DIMENSIONS

600A

Diameter:	6.1 cm (2.4 in.)
Height:	19.7 cm (7.75 in.)
Weight:	359 g (0.8 lb.)

610A

Diameter:	6.1 cm (2.4 in.)
Height:	14.5 cm (5.7 in.)
Weight:	324 g (0.7 lb.)

¹ At a 1σ Confidence Level.

² Active cells are tested on a sampling basis. Custom calibrations are available.

³ For Continuous sampling, 0.5 l/min is recommended.

Ordering Information:

Model 600A Large Active Cell: Order part number 7100180.

Model 610A Small Active Cell: Order part number 7100190.

Values are nominal and based on new units.
Specifications subject to change without notice.
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