

***Next Generation Solutions to meet the  
needs for Continuous Air Monitoring***

# Alpha Sentry



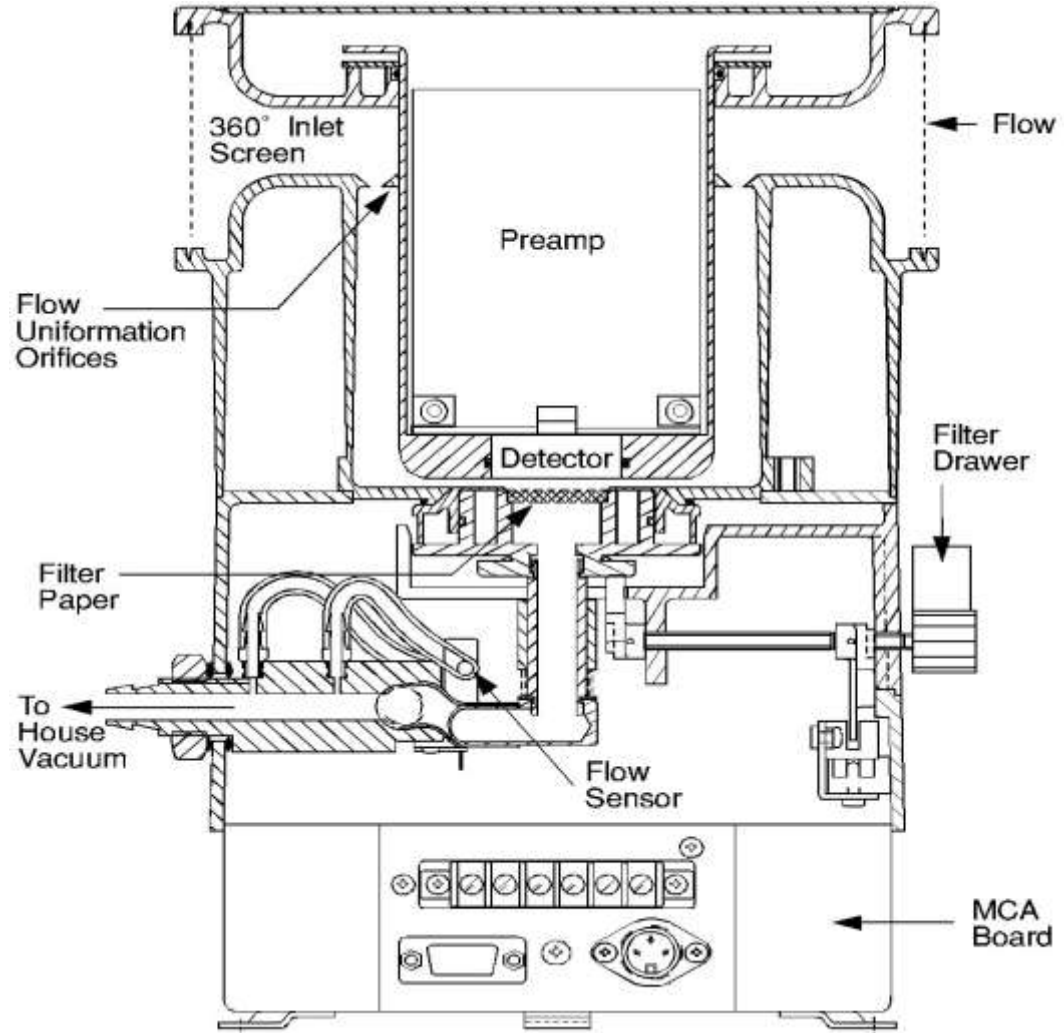
- ▶ **Alpha Airborne activity (Uranium , Plutonium) with accurate Radon background compensation**
- ▶ **Patented radon reduction screen**
- ▶ **Patented mass flow meter for accurate air flow measurement**
- ▶ **High sensitivity, reduced false alarm rate**
- ▶ **Self diagnostic**
- ▶ **networkable**
- ▶ **Full compliance with ANSI N42.17B**

# Features and Qualifications

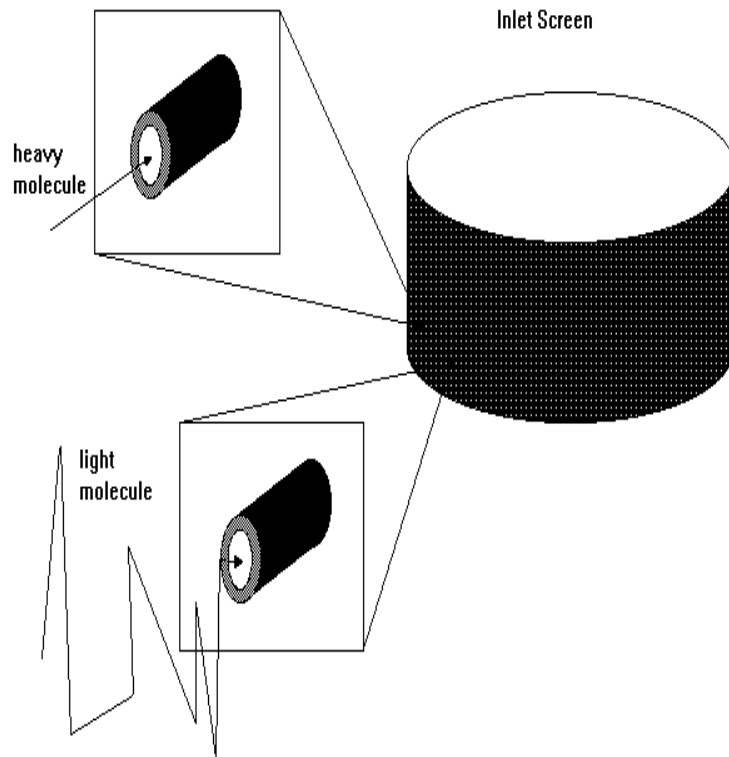
- ▶ **Fully ANSI N42.17B compliant**
- ▶ **Chronic alarm based on concentration or DAC-hr**
- ▶ **Acute release alarm interval 6 - 1530 seconds**
- ▶ **Minimum counts for acute test 0 - 64516**
- ▶ **Chronic release interval minimum at 1 minute**
- ▶ **remote viewing via PDA or laptop**



# CAM Sampling Head



# Radon Progeny Removal



- ▶ **Freshly formed radon daughters, small diameter, single molecule, strong Brownian motion, unattached**
- ▶ **Aged radon daughters, larger diameter, molecule clusters, attached to water vapor or dust molecules, little or no Brownian motion**
- ▶ **Inert dust, water, plutonium or uranium particles in metal, oxide or some other chemical form**

# ***Partial Alpha Sentry Customer List***

- ▶ ***Los Alamos National Laboratory***
- ▶ ***Stanford Linear Accelerator Center***
- ▶ ***WIPP***
- ▶ ***Westinghouse Savannah River Laboratory***
- ▶ ***Bechtel-Hanford***
- ▶ ***Fluor Daniel- Hanford***
- ▶ ***Portsmouth Enrichment Plant***
- ▶ ***Argonne National Laboratory***
- ▶ ***Ames Laboratory, Iowa State University***
- ▶ ***IAEA Seibersdorf Research Center, Austria***
- ▶ ***Belgonucleaire, Belgium***

- ▶ ***Support for up to 8 CAM heads***
- ▶ ***Local access and configuration via RS232***
- ▶ ***single algorithm***
- ▶ ***No special software required at the PC***
- ▶ ***Automatic re-connect to CAMs that may have dropped off-line***
- ▶ ***Warning for calibration due***
- ▶ ***Different alarm settings for each head of an ASM1000***



- ▶ ***Currently supports 1 CAM head – next generation will support 8***
- ▶ ***Remote access and configuration via browser***
- ▶ ***wired or wireless Ethernet connection***
- ▶ ***multiple algorithms***
- ▶ ***optional RadNet-based interface allows email and pager generation***



# *The Canberra / Los Alamos Alpha Sentry ECAM*



LANL-designed cyclone separator ensures correct particle size delivery

Sampler /detector /MCA in all-weather enclosure

Vacuum pump

Tripod legs and base

GPS and met data

wireless communications

# ECAM developments



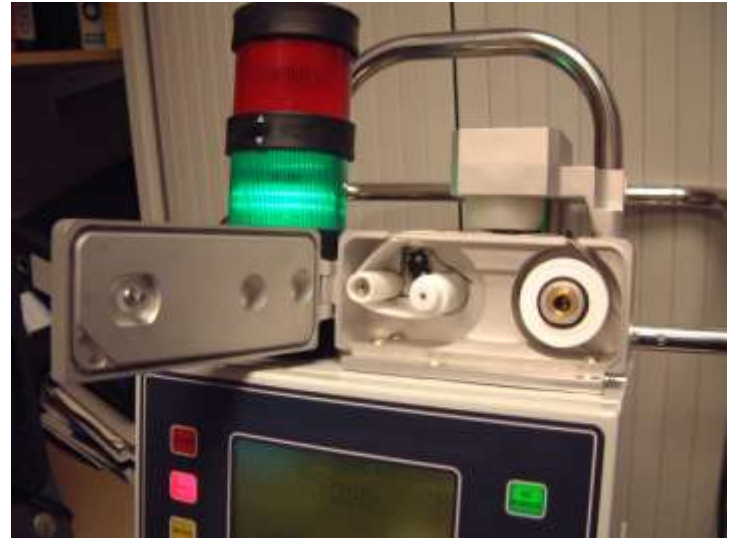
- ▶ **automatic filter changer – 25 cartridges**
- ▶ **4096 channel MCA**
- ▶ **alpha/beta**
- ▶ **alpha/beta/gamma**
- ▶ **cellular communications**
- ▶ **FIPS 140-2 compliant wireless communications**

- ▶ **Alpha and Beta particle activity with radon/thoron alpha and beta background compensation**
- ▶ **Fixed filter**
- ▶ **Single or optional PIPS detector**
- ▶ **Electronic air flow rate measurement with high and low flow alarms**
- ▶ **Continuous total airflow recording and reporting**
- ▶ **Data is RS232 and RS485 transferable to Microsoft Excel**
- ▶ **SW package for configuration by local computer or via the network**



# Recent Developments

- ▶ ***Moving Filter***
  - ◆ ***Final development phase, release date of April 2005***
  - ◆ ***Customer demo at Spokane Health Physics show***



# Recent Developments



- ▶ **Remote sample head design**
  - ◆ **Ongoing development with estimated completion in July 2005**
- ▶ **several concepts are being considered**
  - ◆ **1 RH connected to 1 iCAM**
  - ◆ **16 RH with RS485 connected to one control unit or flat panel screen in suitable industrial enclosure with various plant interfaces**
  - ◆ **RH with Ethernet communication to PC**

## ▶ TAM73D

- ◆ *Monitoring of ambient air, beta radiation*
- ◆ *Detects other emitters such as C14, A41, Kr55, Xe133*
- ◆ *Gamma and radon compensation*
- ◆ *Portable, battery operation*
- ◆ *Detector- flow-through Ion Chamber*

## ▶ TAM100D

- ◆ *High sensitivity*
- ◆ *Local or remote operation*

