

PORTABLE INTEGRATED DUAL INSTRUMENT RADON MONITOR AIR PARTICULATES AND VAPOR AIR FROM WATER & SOIL

Model – RnCAM-4-AWS

FEATURES:

DUAL DISPLAY: (1) AMBIENT AIR (1) AIR VAPOR

RADON FOR AIR & VAPOR: WATER AND SOIL (RnCAM):

- DETECTS RADON-220 & RADON-222
- PORTABLE OR INSTALLED
- INTERNAL AIR PUMP
- DETECTS BETWEEN 5 MINUTES & 30 MINUTES –
 - USER SETTABLE
- RANGE: 0.1-2000 pCi/l (PicoCurries per Liter)
- USER SETTABLE UNITS - PicoCi/L or Bq/m³ etc.
- **OPTIONAL** - TOTAL DAILY DOSE
- PROGRAMMABLE DIGITAL READOUT
- RECHARGEABLE BATTERY OR AC OPERATION
- INTERNAL DATA STORAGE
- DATA OUTPUT VIA RS-232 OPTIONAL LAN OR USB PORT
- **OPTIONAL** EXTERNAL ALARM: AUDIO / VISUAL
- USE WITH PORTABLE PC AS 1 YEAR DATA BUFFER
- USER SETTABLE TRIP POINT
- GAMMA REJECTION
- AVAILABLE WITH BACNET COMPATIBLE COMMUNICATIONS

**RADON PROGENY IN
AMBIENT AIR PARTICULATES (AIR-TBM):**

- DETECTS RADON-220 & RADON-222
 - REAL TIME
 - ELECTRONICS – TBM-3SR-D
 - BATTERY POWER
 - GM PANCAKE DETECTOR WITH FILTER HOLDER
 - **OPTIONAL:** RECHARGEABLE BATTERIES WITH CHARGER
 - **OPTIONAL;** BACKLIGHT
 - AC PUMP AP-5020E
 - AC OPERATION
 - EASY CHANGE FILTER*
 - FLOW METER
 - **OPTIONAL:** BATTERY POWERED PUMP
- NO FLOW METER



RnCAM:
**RADON DETECTOR FOR AMBIENT AIR
WITHOUT PARTICULATES & AIR VAPOR
FROM WATER AND SOIL**



AIR-TBM:
**RADON PROGENY
DETECTOR
FOR AMBIENT AIR
PARTICULATES**

APPLICATION:

- Mining
- Waste Sites
- Radon

The RnCAM-4-AWS is very useful as a dual monitor system for real-time Radon Progeny particulates in ambient air and for Radon in air without particulates and to detect Radon in vapor air from water and soil.

This system is helpful for individuals involved in Radon mitigation since the real-time indication gives an immediate result of any mitigation efforts.

[See RADON IN AIR COMPARISON CHART](#)



Real - Time
Air & Water
Specialists



TECHNICAL ASSOCIATES

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Model – RnCAM-4-AWS

DESCRIPTION:

The RnCAM-4-AWS is a portable integrated dual instrument system with an air particulate monitor and a radon detector for air vapor from water and soil. It is designed for a quick and accurate real-time display. Data output via proprietary software to user's laptop provides ease of use and evaluation. Internal data log accurately establishes the daily variation in Radon concentrations.

The RnCAM-4-AWS operates as a stand-alone dual detector system for Radon in air, water, soil providing real-time measurement over a wide range of concentrations. This is an integrated dual detector system using two instruments.

- The RnCAM detects Radon in ambient air without particulates and Radon in vapor from water and soil.
- The AIR-TBM detects Radon in ambient air particulates.

All data is stored.

- VERIFIES NEED FOR RADON MITIGATION DEVICES
- SENSITIVE FOR OCCUPATIONAL EXPOSURE
- FLASHING LED FOR EACH RADON PULSE-**OPTIONAL** AUDIO SIGNAL
- BUILT-IN COMPUTER INTERFACE
- **MEASURES BELOW EPA RECOMMENDED MITIGATION LIMIT OF 4 PC/L IN A FEW MINUTES.**

- The RnCAM-4-AWS is completely self-contained and portable.
- Ambient air is drawn in through the filter paper by the system's continuous air pump in the RnCAM.
- The ambient air monitor (AIR-TBM) uses standard 57-70 diameter mm filters in T/A's quick change, no leak filter holder, to trap any airborne Radon progeny particulate radioactivity. The filter is under constant surveillance via a pancake GM tube.
- The AIR-TBM air sample filter holder is connected to the TBM-3SR-D electronics through a unique "groove and track" bracket on bottom of TBM-3SR-D. This provides attachment of the air sampler filter holder for read-out with the TBM-3SR-D
- Ambient Air without particulates and vapor from water and soil is exhausted via the RnCAM's internal pump.

All instruments are calibrated at the factory.

- A field calibration check for the AIR-TBM may be performed with a microCurie level Beta- Gamma source.
- The RnCAM chamber may be checked for linearity of response on a Gamma calibration range.
- User friendly calibration controls are provided.



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SPECIFICATIONS: (RnCAM):

For Radon in: Ambient Air without particulates; Vapor from Water and Soil

- **Ranges:** 0.1 to 2,000 pCi/L
- **Detector:** Pulsed Ionization Chamber
- **Sensitivity in Ambient Air without particulates:** 1 – 106 Bq/m³
- **Sensitivity Radon in Soil Vapor:** 100 – 106 Bq/m³
- **Sensitivity Radon in Water Vapor:** 0.002 – 106 Bq/L
- **Count Time:** User Settable
- **Sensitivity:** User Settable
- **Display:** Large, easy to read digital LED readout.
- **Front Panel Controls:** Off-On, Pump Off-On, Back Light.
- **Air Pump:** Internal quiet pump
- **Smoke, Dust and Ion Elimination:** Filter and deionizer reduce effects to negligible level.
- **Alarm:** Alarm PreSet Button, Alarm Reset Button – User Settable.
- **Circuit:** Electrometer amplifies signal
- **Ion Chamber Volume:** 300 ml radon internal chamber.
- **Calibration:** Internal calibration with Radon gas.
- **Computer Port:** RS-232 serial port (standard) USB or LAN Optional
- **Case:** Rugged, weatherproof.
 - ❖ **OPTIONAL:** Tamper Proof Control Panel

DIMENSIONS:

- **Portable System Excluding handle:** 7" W x 11.25" L x 7.5" D (17.7 cm x 28.5cm x 19 cm)
- **Weight:** 8 lbs (3.6 kg)

ELECTRONICS

- **AC Power:** 100-240VAC / 7.5 DC Adapter
- **Battery Backup:** 3.6 V / 10 Ah Rechargeable Battery;
24 hours between charges. (Standard)

ACCESSORIES & OPTIONS:

- **RAL-3A:** Remote Alarm (audible & visual)
Model RAL-3A (includes 25 ft. of cable).
 - ❖ **OPTIONAL:** 500 ft Cable.
- **HTR-7:** Heated Ion Chamber
- **WIN-W:** Win-Wedge data logging software for users PC.



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SPECIFICATIONS (AIR-TBM):

For Radon Progeny in Air Particulates:

Measures: Airborne radioactivity including aerosol and particulates.
Sensitivity: Limit of sensitivity (99% confidence level) 1 nanoCi collected on filter paper.

TIME	SENSITIVITY
1 Hour	$3 \times 10^{-9} \mu\text{Ci/cc}$
24 Hours	$1 \times 10^{-10} \mu\text{Ci/cc}$
5 Days	$2 \times 10^{-11} \mu\text{Ci/cc}$

- $2 \times 10^{-11} \mu\text{Ci/cc}$ after 5 days with pump running or $1 \times 10^{-10} \mu\text{Ci/cc}$ after 24 hours
- $3 \times 10^{-9} \mu\text{Ci/cc}$ after pump runs for 1 hour.
- This level is below 2/10th of the NRC Title 10 limit for 40 Hr. exposure to most hazardous Beta and/or Gamma emitter.

Detector: 2" diameter. Internal Thin window 1-3/4" x 1.5-2 mg/cm² pancake T-1190 GM detector
Energy Range: 50KeV to 2 MeV
Accuracy: ±20%
Background: Typically, 25 cpm
Flow Rate: Calibrated at factory. See chart below. Positive displacement pump.
Filters: Pack of 100 filters, glass fiber filters
Optional: Can use membrane or paper.
Case: Electronics housed in instrument-case, carrying handle included.
Electronics: TBM-3SR-D Digital Readout.
Range: $1 \times 10^{-10} \mu\text{Ci/cc}$
Response Time: 2 seconds
Pump Power: AC. 115V, 50-60 Hz (230 V optional)
Optional: 6 AA batteries

Pump	Model #	Flow Rate	Weight
Battery Operated No Flow Meter	MINI-AIR-15	4ft ³ /hour (2 lpm)	1 lb
AC Operated	AP-5020E	0.5ft ³ /minute (15 lpm)	6 lb

WEIGHT & DIMENSIONS:

Dimensions TBM-3SR-D: 3" W x 5" H x 6"D (7.6 cm x 12.7 cm x 15 cm)
Weight TBM-3SR-D: Electronics – 1.5 lbs (.68 kg)
Dimensions AC Pump: 5" W x 7" H x 10"L (12.7 cm x 17.7 cm x 25.4 cm) (Fold Down Handle)
Weight AC Pump: 6 lbs (2.7 kg)

OPTIONS: Inlet hose for monitoring of closed spaces. Rechargeable Batteries & Charger for TBM-3SR-D



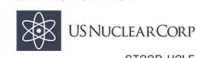
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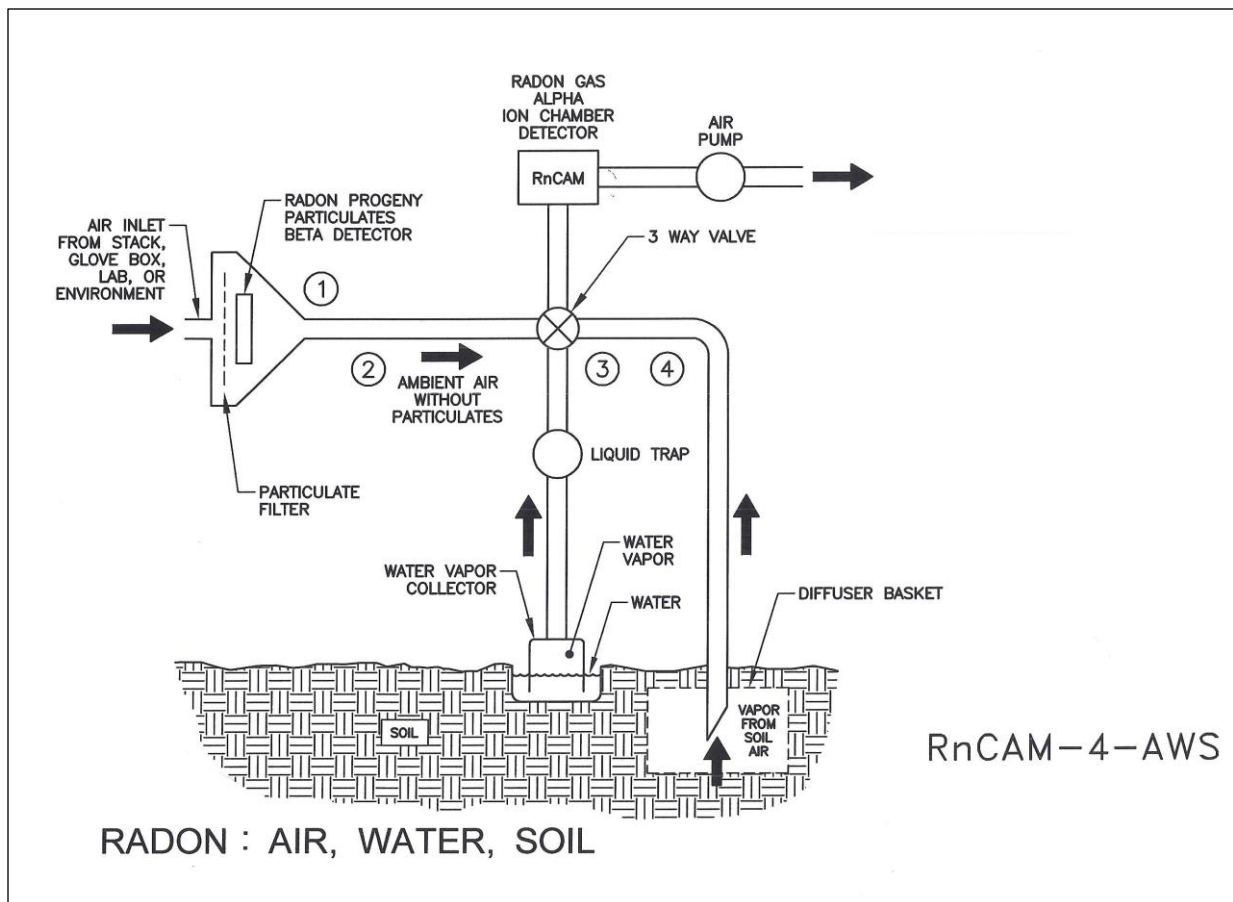
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RnCAM-4-AWS Flow Chart

RnCAM-4-AWS Radon Detection System

AIR-TBM

- 1) Ambient Air Radon Progeny

RnCAM

- 2) Ambient Air without Particulates
- 3) Vapor from Water
- 4) Vapor from Air



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