DURRIDGE
Radon Capture & Analytics

PRODUCT BRIEF

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RAD7 RADON DETECTOR

Electronic radon detector with real-time monitoring and spectral analysis

DESCRIPTION

DURRIDGE RAD7 is a proven state-of-the-art continuous radon monitoring instrument with accessories for detection in water, soil gas, and air. Made in the USA and used worldwide by university, government and national laboratory scientists at the leading edge of research in oceanography, geology, radiochemistry, and dark matter, the RAD7 has established itself as the highest quality standard for radon measurement on the market. Professional radon testers in government, industry, and consulting companies in industrial/occupational hygiene and health physics, also choose the RAD7 to test radon and thoron concentrations in the environment (groundwater, indoor air, building materials, schools and professional buildings, and mines).

RAD7 matches, and often exceeds, the specifications of other real-time continuous radon monitors at a fraction of their price. RAD7 incorporates a number of exclusive features that are found in no other radon detector, regardless of price, such as immunity to ^{210}Pb background build-up over the life of the device.

CAPTURE software from DURRIDGE complements the RAD7 with easy data download, clear graphing, powerful analysis, automatic report generation, and direct control of remote RAD7 devices in the field. CAPTURE is the most versatile and powerful radon analysis tool in the market, yet it is easy and intuitive to use.

MARKETS		APPLICATIONS
Geology	Faculty and researchers of hydrogeology, soil science, seismology, volcanology at university, government, and national research labs	Measure radon concentrations or radon as environmental tracer in groundwater, soil, and air
Aquatic Science	Faculty and researchers of hydrology, oceanography, limnology at university, government, and national research labs	Measure radon concentrations or radon as environmental tracer in surface water
Health Physics	Health physicists & consulting firms	Test radon in facilities that use ionizing radiation: govt. labs, academic and research institutions, regulatory agencies, nuclear power plants, hospitals, factories.
Industrial Hygiene	Testing, inspection & certification companies, industrial hygienists and consultants	Test ambient radon levels to protect workers at schools, universities, businesses, mines, fracking sites, etc.
Regulatory	Government departments - federal, state, and local such as DOE, DOL, USGS, EPA, CDC/ NIOSH, National Institute of Health, water resource authorities	Measure radon for policy setting and inspections to protect the public
Environmental Compliance	Consulting and engineering firms	Test radon concentrations in air, groundwater, and soil at building sites for vapor intrusion (VI) and non-aqueous phase liquid (NAPL) contamination
Radon Testing	Professional building inspectors and testers	Test radon concentrations in office buildings, schools, residences for real estate transactions and mitigation system effectiveness
Physics Research	Faculty and researchers of radiochemistry, particle physics, dark matter at university, government, and national research labs	Measure radon concentrations, monitor mitigation systems for removal of radon as a contaminant

RAD7 SPECIFICATIONS

Technology	Passivated Implanted Planar Silicon Detector Enables high resolution alpha spectroscopy of decay energies
Sensitivity	SNIFF mode, 0.25 cpm/(pCi/L), 0.0068 cpm/(Bq/m^3) NORMAL mode, 0.50 cpm/(pCi/L), 0.014 cpm/(Bq/m^3) Virtually background-free raw-data readings
Spectral Resolution	50 keV: high enough for independent radon and thoron measurements and near-perfect ^{210}Pb background rejection
100% immune to ^{210}Po background build-up over life of instrument	Yes
Operating Range	4 - 750,000 Bq/m^3 4 - 7,500,000 Bq/m^3 (with optional Range Extender accessory) RAD7 + Range Extender provide 3.75x AlphaGuard range, maintain accuracy over lifetime, at a significantly lower price
Response Time	15 minutes (SNIFF mode) 3 hours (NORMAL mode)
Instrument calibration error	± 5%
Intrinsic Background	0.2 Bq/m^3 for lifetime of the instrument

RAD7 FEATURES AND BENEFITS

Type of Detector	Mirion (Canberra) PIPS
Portable Wireless Printer	Included, prints test data and spectra on-site for real-time reporting
Simultaneous and Independent Radon and thoron Measurement	Yes
Software	CAPTURE software for powerful data visualization and analysis, PC and Mac compatible
Ruggedized	Yes
Battery Life	72 Hours in active Monitor mode
Weight	4.35 kg

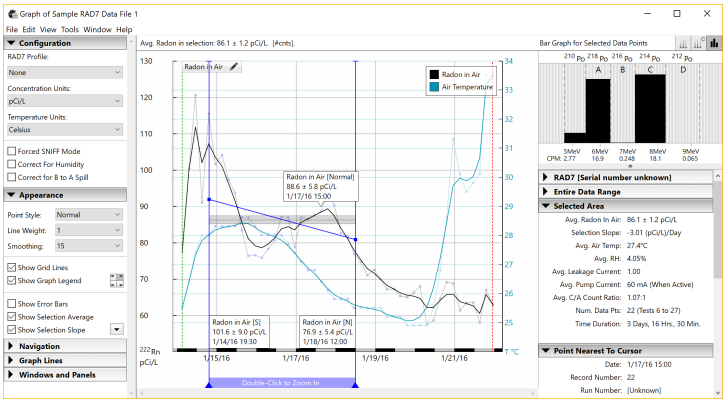
DURRIDGE EXCLUSIVE CAPTURE SOFTWARE

Exclusive to the RAD7 is DURRIDGE's CAPTURE software, which is available for Windows and macOS. CAPTURE offers the ability to download and graph radon data files from the RAD7, and issue commands to the instrument to control it from a remote location.

A chart recorder renders sophisticated real-time graphs of radon and thoron data from single or multiple RAD7s. Included with CAPTURE is a complete user's manual and sample RAD7 data files. CAPTURE contains built-in support for the English and Chinese languages.

CAPTURE's extensive graphing features include advanced data configuration, precise navigation, and comprehensive statistics panels. RAD7 data may be exported to a variety of human-readable formats. High-resolution printer output is always just a click away.

New features are added to CAPTURE on an ongoing basis. Recently the software gained support for downloading and storing the full per-cycle RAD7 spectrum, and displaying it in a dynamic histogram.



DURRIDGE RADON IN WATER ACCESSORIES

The RAD AQUA - Water at the Source

The RAD AQUA is a RAD7 accessory used for monitoring radon and thoron in a continuous water supply, such as running tap water, a flowing stream, or even sea water. The RAD AQUA contains a spray chamber which aerates the incoming water, bringing the radon concentration in the air into equilibrium with that of the water flowing through the instrument. DURRIDGE's CAPTURE software processes the RAD7 data, along with temperature data, to calculate the concentration of radon in the water.

The RAD H_2O - Small Water Samples

The RAD H_2O accessory is used to measure radon in small samples of ground water or tap water. The RAD H_2O kit comes with a collection of 40ml and 250ml vials for collecting samples, which can be conveniently analyzed on site or later in the lab. When a sampling vial is connected to the system, the RAD7's internal pump moves air through the water sample, aerating it to bring the radon in the air loop and water sample into equilibrium. The RAD7 then analyzes the radon, automatically calculating the radon-in-water concentration based on the known ratio of air-to-water and well-understood air-water partition coefficient. This analysis takes approximately 30 minutes.

The Big Bottle System - Large Water Samples

This accessory enables users to accurately measure radon in large water samples of up to 2.5L in volume, collected in standard soda bottles or glass jugs. Large samples allow for greater precision and lower limits of detection. Radon concentrations of as low as 1 pCi/L (37 Bq/m^3) can be detected with a sufficiently large sampling bottle. The upper operating limit of the Big Bottle System is 10,000 pCi/L (370,000 Bq/m^3). Ranges higher than that are detectable with the RAD H_2O accessory.

The RAD AQUA accessory