

Specifications for the RAD7 exceed those of all radon gas monitors made in North America, as well as those in its price range world-wide. This is a partial list of specifications that make the RAD7 so highly regarded in the field.

## Part 1: RAD7 Functional Specifications

Modes of Operation	<ul style="list-style-type: none"> <li>• SNIFF Rapid response and rapid recovery radon measurement</li> <li>• NORMAL High sensitivity radon measurement</li> <li>• AUTO Automatic switch from SNIFF to NORMAL after three hours</li> <li>• THORON Radon and thoron measured simultaneously and independently</li> <li>• GRAB Analysis of air “grabbed” from a discrete sample</li> <li>• WAT Automatic analysis of water samples with optional RAD H<sub>2</sub>O accessory</li> </ul>
Measurements	<ul style="list-style-type: none"> <li>• Radon in air measurement with Sniff protocol for quick, spot reading</li> <li>• Thoron protocol for searching for radon entry points</li> <li>• Radon in air 1-day, 2-day or weeks protocol for long term measurement</li> <li>• Radon in water samples with optional RAD H<sub>2</sub>O and Big Bottle RAD H<sub>2</sub>O kits</li> <li>• Continuous radon in water testing with optional RAD AQUA and Water Probe</li> <li>• Radon in soil gas with optional Soil Gas Probe and DRYSTIK</li> <li>• Radon emission from soil and hard surfaces with optional accessory</li> <li>• Bulk radon emission from bulk materials and objects with optional accessory</li> </ul>
Data Storage	1,000 records, each with 23 fields of data Log of printer output also stored
Sample Pumping	Built-in pump draws sample from chosen sampling point Flow rate typically 800 mL/min
Print Output	Short, Medium, or Long format data printed after each cycle Run summary printed at end of run, including averages and spectrum
PC Connectivity	RS232 serial port, full remote control implemented in CAPTURE Software Optional serial to Bluetooth adaptor for wireless PC connectivity
Audio Output	<ul style="list-style-type: none"> <li>• GEIGER Tone beeps for radon and thoron counts</li> <li>• CHIME Chime only at the end of each cycle, otherwise silent</li> <li>• OFF No sound</li> </ul>
Tamper Resistance	TEST LOCK command locks keypad to secure against tampering

## Part 2: RAD7 Technical Specifications

Principle of Operation	Electrostatic collection of alpha-emitters with spectral analysis Passivated Ion-implanted Planar Silicon detector SNIFF mode counts polonium-218 decays NORMAL mode counts both polonium 218 and polonium 214 decays
Built-In Air Pump	Nominal 1L/min flow rate Inlet and outlet Luer connectors
Connectivity	RS-232 port up to 19,200 baud rate USB adaptor is included with every RAD7

Measurement Accuracy	+/-5% absolute accuracy, 0% - 100% RH
Nominal Sensitivity	SNIFF mode, 0.25 cpm/(pCi/L), 0.0067 cpm/(Bq/m <sup>3</sup> ) NORMAL mode, 0.5 cpm/(pCi/L), 0.013 cpm/(Bq/m <sup>3</sup> )
Radon Concentration Range	0.1 - 20,000 pCi/L (4.0 - 750,000 Bq/m <sup>3</sup> )
Intrinsic Background	0.005 pCi/L (0.2 Bq/m <sup>3</sup> ) or less, for the life of the instrument
Recovery Time	Residual activity in Sniff mode drops by factor of 1,000 in 30 minutes
Operating Ranges	Temperature: 32° - 113°F (0° - 45° C) Humidity: 0% - 100%, non-condensing
Cycle Range	User controllable number of cycles, from 1 to 99 to unlimited, per run User controllable cycle time, from 2 minutes to 24 hours
CAPTURE Software	<ul style="list-style-type: none"> <li>• Compatible with Microsoft Windows 7 through 10, and macOS</li> <li>• Automatic RAD7 connection and data download</li> <li>• Graphs radon, thoron, temperature and humidity over time</li> <li>• Automatic humidity correction</li> <li>• Statistical analysis tools track concentration averages and uncertainties</li> <li>• Chart Recorder mode provides real-time RAD7 status monitoring</li> <li>• Control RAD7 operations from computer via direct or remote connection</li> <li>• Automatic calculation and display of radon in water with optional accessories</li> <li>• Automatic combination of data from multiple RAD7s</li> </ul>

### Part 3: RAD7 Physical Specifications

Dimensions	11.5" x 8.5" x 11" (29.5 cm x 21.5 cm x 27.9 cm)
Weight	9.6 pounds (4.35 kg)
LCD Display Output	2 line x 16 character, alpha-numeric display
Case Material	High density polyethylene
Infrared Printer	Omniprint OM1000 Wireless Infrared Printer included
Power Supply	11-15V DC (12V nominal) @ 1.25A, center pin positive, or included internal EnerSys sealed lead acid rechargeable battery pack (6V nominal, 30Wh, 5Ah)
Battery Longevity	24 hours in SNIFF mode; 72 hours in Monitor mode