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RAD7 Specifications

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 Functionality

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| Modes of Operation | SNIFF Rapid response and rapid recovery radon measurement THORON Radon and thoron measured simultaneously and independently NORMAL High sensitivity AUTO Automatic switch from SNIFF to NORMAL after three hours run GRAB Analysis of grab samples WAT Automatic analysis of water samples with RAD H ₂ O accessory |
| Measurements | Radon in air with Sniff protocol for quick, spot reading Thoron protocol for searching for radon entry points Radon in air 1-day, 2-day or weeks protocol for long term measurement Radon in water batch samples with RAD H ₂ O and Big Bottle RAD H ₂ O Continuous radon in water with RAD AQUA and Radon-in-Water Probe Radon in soil gas with Soil Gas Probe and Active DRYSTIK Radon emission from soil and hard surfaces with surface emission chamber Bulk radon emission from bulk materials and objects |
| 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 800mL/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 |
| Audio Output | GEIGER Tone beeps for radon and thoron counts CHIME Chime only at the end of each cycle, otherwise silent OFF No sound |
| Tamper Resistance | TEST LOCK command locks keypad to secure against tampering |

Part 2 Technical Specifications

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| 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 1 liter/minute flow rate Inlet and outlet Luer connectors |

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| 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 ³) NORMAL mode, 0.5 cpm/(pCi/L), 0.013 cpm/(Bq/m ³) |
| Radon Concentration Range | 0.1 - 20,000 pCi/L (4.0 - 750,000 Bq/m ³) |
| Intrinsic Background | 0.005 pCi/L (0.2 Bq/m ³) 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 | Compatible with Microsoft Windows XP and 7, and Mac OS X Automatic RAD7 location, connection and data download Graphs radon, thoron, temperature and humidity over time Automatic humidity correction Statistical analysis tools track concentration averages and uncertainties Chart Recorder mode provides real-time RAD7 status monitoring Control RAD7 operations from computer via direct or remote connection Automatic calculation and display of radon in water for RAD AQUA Automatic combination of multiple RAD7 data |

Part 3 Physical Specifications

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|--------------------|---|
| 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 |

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