

**PRELIMINARY  
SUBJECT TO CHANGE**

**NEW**

# RAD8

Radon + Thoron Monitor

## Next-Generation Electronic Radon Monitor

The new **RAD8** reimagines scientific-grade electronic radon monitors with complete top-to-bottom upgrades in comparison to the venerable RAD7, the instrument which for years has been the industry standard for a variety of applications including oceanography, hydrogeology, geology, health physics, environmental remediation, radon testing, metrology, and more.

The following table summarizes the wealth of RAD8 upgrades:



Upgrade	Improvement over RAD7
> 70% Higher Sensitivity	Significantly better statistical certainty
Waterproof and dustproof (IP67)	No more splash worries, <b>even with the case open</b>
MIL-SPEC certified case	Even more rugged than RAD7
30% Smaller, 20% Lighter	Easier to transport
3.4x Higher Measurement Range	Suitable for concentrations up to 2,500,000 Bq/m <sup>3</sup>
1,000,000x Larger Memory	Never run out of storage
4x Higher Data Resolution	View data with very fine granularity; easily align timestamps
Additional Sensors	More environmental factors to correlate with radon measurements
IPS Color Touchscreen	Advanced menus with easy navigation and crystal clear display of critical data such as spectrum, test parameters, and graphs
32-bit 120 MHz ARM Processor	400x more powerful
Wi-Fi and USB Communications	Multiple, faster, connection options

For more details, see the specification tables on page 3.

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## RAD8 Summary of Benefits

With its cutting-edge features and optimizations for outdoor use, RAD8 revolutionizes radon/thoron monitoring in the field and the lab. An environment-proof, super portable design with long battery life and IP67 water/dust resistance **even when the case is open** means you can use RAD8 conveniently and worry-free whether you work near water, on rugged terrain, in a dusty mine, or in the gentle confines of a lab.

In keeping with the transparent data approach pioneered by RAD7, there is no mystery to how RAD8 measurements are calculated - it's the opposite of a "black box". RAD8 provides unparalleled access to spectrometry data (including raw sensor counts) so users can analyze and verify measurements in detail without doubting or questioning "what's going on inside?" RAD8 is fully compatible with Capture software to provide our customers the ultimate tool for analyzing and understanding their data.

Speaking of data, RAD8 comes with more memory than can be used in a lifetime so there is never any worry about running out of storage. Data quality is also vastly improved through technology advances that significantly improve

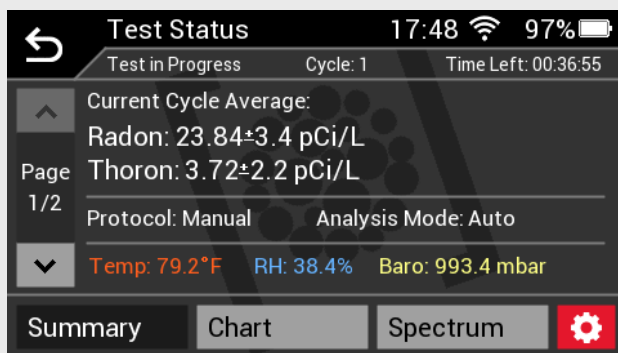
sensitivity and data resolution. Thanks to these innovations and alpha spectrometry enabled by the best available silicon detectors, data collected with RAD8 has greater statistical certainty and higher resolution, making your analysis much more accurate and insightful.

A blazing fast microprocessor and sunlight-readable color touchscreen with wide viewing angle bring RAD8's state-of-the-art user interface to life with easy navigation and critical information available at your fingertips. Advanced menu options display radon/thoron progeny spectra, test status information, and graphs of radon, thoron, temperature, humidity, and other information, providing a wealth of data in great detail, even as a test is running. See the menu options below.

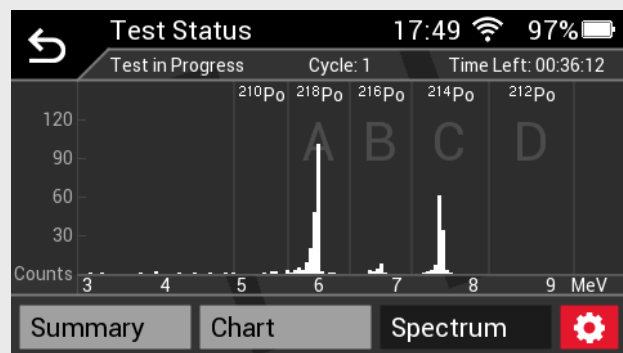
RAD8 features built-in Wi-Fi and two USB ports, plus COM and accessory ports for fast and easy connections to computers, or directly to the internet for remote control/monitoring or cloud storage of data files (as with Durridge Capture Cloud). In addition, RAD8 is compatible with all Durridge accessories including RAD AQUA, RAD H<sub>2</sub>O, Soil Gas Probes, DRYSTIK, and others.

## Advanced Menu Options

Real-time information about the current radon test in progress:



Alpha spectrometry measurements are used to determine radon and thoron concentrations:



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## RAD8 Functional Specifications

Analysis Modes	<ul style="list-style-type: none"> <li>• Rapid: Quick response and rapid recovery radon measurement</li> <li>• Precise: High sensitivity radon measurement</li> <li>• Auto: Automatic switch from Rapid to Precise after three hours</li> <li>• Radon source options include Air and Water</li> </ul>
Thoron Measurement	Built-in Sniff Protocol: Maximum flow rate for enhanced thoron sensitivity
Control Panel	Touchscreen or physical button controls Waterproof and dustproof with case open or closed (IP67)
Data Storage	16 GB storage for millions of records, each with full sensor and spectrum data
Sample Pumping	Built-in pump draws sample from chosen sampling point at ~0.6 L/min
Sensors	3 temperature sensors, RH sensor, barometer, accelerometer
Connectivity	Wi-Fi, 2 USB ports, COM port, Accessory port
Audio Output	Multiple audio output options for real-time communication of detection events
Tamper Resistance	Password-protected lock screen secures RAD8 against tampering RAD8 case securable with padlocks

## RAD8 Technical Specifications

Principle of Operation	Electrostatic collection with silicon detector and alpha spectrometry Rapid Analysis Mode counts $^{218}\text{Po}$ decays Precise Analysis Mode counts both $^{218}\text{Po}$ and $^{214}\text{Po}$ decays
Built-In Air Pump	0.6 L/min flow rate with bypass option for external pumping or flows
Measurement Accuracy	$\pm 5\%$ absolute accuracy, 0% - 100% RH
Nominal Sensitivity	Rapid Analysis Mode, 0.40 cpm/(pCi/L), 0.011 cpm/(Bq/m <sup>3</sup> ) Precise Analysis Mode, 0.82 cpm/(pCi/L), 0.022 cpm/(Bq/m <sup>3</sup> )
Radon Range	0 - 67,500 pCi/L (0 - 2,500,000 Bq/m <sup>3</sup> )
Intrinsic Background	0.0015 $\pm$ 0.0004 pCi/L (0.06 $\pm$ 0.02 Bq/m <sup>3</sup> ) for the life of the instrument
Recovery Time	Residual activity in Rapid Analysis Mode drops by factor of 1,000 in 30 minutes
Operating Ranges	Temperature: 0° - 50°C Humidity: 0% - 100%, non-condensing
Cycle Range	User controllable number of Cycles, from 1 to unlimited, per test User controllable Cycle time, from 5 minutes to 24 hours
Capture Software	<ul style="list-style-type: none"> <li>• Compatible with all major versions of Windows and macOS</li> <li>• Automatic RAD8 connection, data download, and real-time status monitoring</li> <li>• Graphs radon, thoron, temperature, humidity, and barometric data over time</li> <li>• Automatic correction for humidity and other factors</li> <li>• Statistical analysis tools track concentration averages and uncertainties</li> <li>• Control RAD8 operations from computer via direct or remote connection</li> <li>• Browse RAD8 data stored on Capture Cloud</li> </ul>

## RAD8 Physical Specifications

Dimensions	12.5" x 10.1" x 6" (31.8 x 25.7 x 15.2 cm)
Weight	7.4 pounds (3.35 kg)
LCD Display	IPS 480 x 272 full color touchscreen, sunlight readable, wide viewing angle
Case	Indestructible, MIL-SPEC certified, IP67
Power Input	11-15V DC (12V nominal) @ 2A, center pin positive
Battery	Rechargeable lithium ion battery provides 3 days continuous operation

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