

FD217

RaA氡测量仪 RaA Radon Monitor



应用领域

通过测量土壤或水中氡浓度进行放射性找矿或水化找矿，也可应用于建筑工程土壤氡检测、地下水源定位、地震预报、辐射防护及教学等方面。

符合的标准/规程

- GB 50325-2020《民用建筑工程室内环境污染控制标准》
- EJ/T 605-2018《铀矿勘查氡及其子体测量规范》

Application Fields

Geological prospecting by measuring radon concentration in soil or water, and it can also be applied in areas such as soil radon detection in construction engineering, locating underground water sources, earthquake forecasting, radiation protection, and teaching, etc.

The instrument meets the measuring requirements of GB 50325-2020 *Standard for indoor environmental pollution control of civil building engineering*, EJ/T 605-2018 *Specifications for radon and its progeny survey in uranium exploration*.



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仪器特点

- RaA法瞬时测氡，时间短，效率高
- PIPS探测器，分辨率高，能谱实时显示
- 自动换带设计，无需人工换片，支持倒带重复采样
- 采集腔室和探测结构分离设计，无探测器污染及钍射气干扰
- 土壤氡测量智能切换工作气路，无需人工插拔管路
- 恒流采样，气体取样速率精确、平稳
- 工业级大容量存储芯片，10万次以上安全擦写
- 数据传输：标准USB接口，移动端APP，蓝牙打印
- 体积小，重量轻，集成式设计便于携带
- 功耗低，交、直流两用，连续监测不断电
- 支持固件升级，易于维护

技术指标

1. 极限探测灵敏度： $< 246 \text{ Bq/m}^3$
2. 探测器类型：离子注入型钝化硅探测器(PIPS探测器)
3. 探测效率： $\eta_{211} \geq 40\%$ (^{241}Am 源活性区直径 $\leq \Phi 20\text{mm}$)
4. 本底计数： $\leq 4\text{cph}$
5. 测量范围： $(246 \sim 999999) \text{ Bq/m}^3$
6. 测量重复性误差： $\leq 15\%$
(氡室浓度 3000 Bq/m^3 ，环境湿度 15% ，温度 25°C)
7. 测量不确定度： $\leq 20\%$
8. 工作方式：双通道主动泵吸式-自动换带检测系统
9. 操作模式：单点测量，连续测量
10. 收集带单程测量点数：265个(可重复使用)
11. 数据存储：10000组
12. 电源：锂离子充电电池/交流电，电池供电可连续工作72h以上
13. 工作环境
温度： $(-10 \sim +50)^\circ\text{C}$
相对湿度： $\leq 90\%$ ($+40^\circ\text{C}$)
14. 显示器：工业级四灰度LCD屏，低功耗，高对比度，亮度可调，更适用于野外环境使用
15. 打印数据：日期、时间、点号、检测结果或统计结果
16. 外形尺寸和重量
 $(322 \times 269 \times 322)\text{mm}$ 5.2 kg

仪器认证

中国计量科学研究院检定并出具检定证书

Instrument Characteristics

- RaA instant radon measurement method, short time and high efficiency.
- PIPS detector, with high resolution and real-time display of energy spectrum.
- Automatic tape changing design, no need for manual replacement, support rewinding and repeated sampling.
- Separation design of chamber and detection, with no detector contamination and interference from thoron gas.
- Intelligent switching of gas pipeline for soil radon measurement, no need for manual plug and unplug.
- Constant flow sampling, with accurate and stable gas sampling rate.
- Industrial-grade large-capacity storage chip, with more than 100,000 safe erasures and writes.
- Data Transfer: USB, Mobile APP, Bluetooth printing.
- Small size, light weight, easy to carry.
- Low power consumption, AC/DC double use.
- Support firmware upgrade, easy to maintain.

Specifications

1. Extreme Detection Density: $< 246 \text{ Bq/m}^3$
2. Detector Type: Ion-implanted passivated silicon detector (PIPS detector)
3. Detection Efficiency: $\eta_{211} \geq 40\%$ (Diameter of the active area ^{241}Am source $\leq \Phi 20\text{mm}$)
4. Background Counting Rate: $\leq 4\text{cph}$
5. Measuring Range: $(246 \sim 999999) \text{ Bq/m}^3$
6. Measurement Repeatability Error: $\leq 5\%$
(radon concentration is 3000 Bq/m^3 , environment humidity is 15% , temperature is 25°C)
7. Measurement Uncertainty: $\leq 20\%$
8. Working Mode: Dual-channel active pumping-automatic tape changing detection system
9. Operating Mode: single and continuous measuring
10. Collection tape one-way point counts: 265 (can be reused)
11. Data Storage: 10000 sets of data
12. Power Supply: Lithium-ION / AC, DC power can support the instrument to work continuously for more than 72h.
13. Operating Environment
Temperature: $(-10 \sim +50)^\circ\text{C}$
Relative Humidity: $\leq 90\%$ ($+40^\circ\text{C}$)
14. Monitor: technical grade four-gray LCD monitor
15. The Host Print Data Format: date, time, number, radon concentration and statistical results.
16. Dimensions and Weight:
Host: $(322 \times 269 \times 322) \text{ mm}$ 5.2 kg

Instrument Certification

Verified and certified by National Institute of Metrology P.R.China (NIM).



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