FD216

环境氡测量仪
Environmental Radon Monitor

应用领域

环境空气、土壤、水等氡浓度及土壤、建材等氡析出率的测量，可用于地质找矿、辐射防护、核事故监测、辐射剂量评价、地震预报及教学等。

符合的标准/规程

- T/CECS 569-2019《建筑室内空气中氡检测方法标准》
- GB 50325-2020《民用建筑工程室内环境污染控制标准》
- GB/T 16147-1995《空气中氡浓度的闪烁瓶测量方法》
- EJ/T 605-2018《铀矿勘查氡及其子体测量规范》

PA 型式批准证书号：2016C154-11

Application Fields

Measure radon concentration in ambient air, soil and water and radon exhalation rate in soil and building materials. It can be applied in geological prospecting, radiation protection, nuclear accident monitoring, radiation dose assessment, earthquake prediction and teaching, etc.

The instrument meets the measuring requirements of T/CECS 569-2019 *Standard for measurement method of indoor air radon*, GB 50325-2020 *Standard for indoor environmental pollution control of civil building engineering*, GB/T 16147-1995 *Scintillation flask method for measuring radon concentration in the air*, and EJ/T 605-2018 *Specification for radon and its progeny measurement in uranium exploration*.

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仪器特点

- 泵吸闪烁瓶法测氡，灵敏度高
- 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
- 气路状态实时监测与报警，并记录异常信息
- 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，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. 灵敏度：≥ 0.68 cpm/[Bq·m^{-3}]
2. 本底计数率：≤ 0.3 cpm
3. 测量范围
   - 环境空气氡：(3 ~ 999999) Bq/m^3
   - 土　壤　氡：(300 ~ 999999) Bq/m^3
   - 氡 析 出 率：(0.001 ~ 33.000) Bq/[m^2·s]
   - 水　中　氡：(0.003 ~ 999.999) Bq/L
4. 测量重复性误差：≤ 5% (氡室浓度2000 Bq/m^3，环境湿度65%，温度25°C)
5. 稳定性：相对误差 ≤ 10% (8h)
6. 电源：锂离子充电电池/交流电，电池供电可连续工作72h以上
7. 工作环境
   - 温　　度：(-10 ~ +50)°C
   - 相对湿度：≤ 90% (+40°C)
8. 数据存储：42000组
9. 操作模式：单点检测或连续监测
10. 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
11. 取气方式：主动泵吸式
12. 测量时间
    - 环境空气氡：30 min
    - 土　壤　氡：11 min
    - 氡 析 出 率：30 min
    - 水　中　氡：31 min
13. 打印数据：日期、时间、点号、检测结果或统计结果
14. 外形尺寸和重量
    - 主机：(330×210×170) mm　4.3 kg

仪器认证

中国计量科学研究院检定并出具检定证书

PA 型式批准证书号：2016C154-11

Instrument Characteristics

- Scintillation flask method for measuring radon concentration with high sensitivity.
- Intelligent switching of gas path in soil radon mode.
- Constant flow sampling, accurate gas sampling rate.
- Real-time monitoring and alarm of gas sampling status, and recording abnormal information.
- Technical grade large capacity flash memory, more than 100,000 times safe erasing and writing.
- Data transmission: standard USB interface, mobile app, Bluetooth printing.
- Small size, light weight, suitable to carry.
- Low power consumption, AC/DC double use.
- Support firmware upgrade, easy to maintain.

Specifications

1. Sensitivity: ≥ 0.68 cpm/[Bq·m^{-3}]
2. Background Counting Rate: ≤ 0.3 cpm
3. Measuring Range
   - Radon in air: (3 – 999999) Bq/m^3
   - Radon in soil: (300 – 999999) Bq/m^3
   - Radon exhalation rate: (0.001 – 33.000) Bq/[m^2·s]
   - Radon in water: (0.003 – 999.999) Bq/L
4. Measurement Repeatability Error: ≤ 5% (radon concentration is 2000 Bq/m^3, environment humidity is 65%, temperature is 25°C)
5. Stability: RE ≤ 10% (8h)
6. Power Supply: Lithium-ION / AC, DC power can support the instrument to work continuously for more than 72h.
7. Operating Environment
   - Temperature: (-10 – +50)°C
   - Relative Humidity: ≤ 90% (+40°C)
8. Data Storage: 42000 sets of data
9. Operating Mode: single and continuous mearuring
10. Monitor: technical grade four-gray LCD monitor
11. Way to Take Gas: active pump-priming
12. Response Time
    - Radon in air: 30 min
    - Radon in soil: 11 min
    - Radon exhalation rate: 30 min
    - Radon in water 31 min
13. The Host Print Data Format: date, time, number, radon concentration and statistical results.
14. Dimensions and Weight:
    - Host: (330×210×170) mm　4.3 kg

Instrument Certification

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

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