

eDPRW

CONTINUOUS MEASUREMENT OF RADON EXPOSURE

eDPRW

Applications:

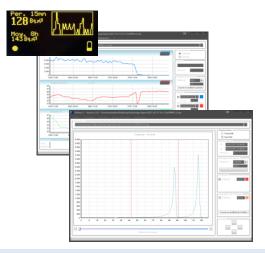
- Measurement of radon exposure for agents working underground,
- Air quality monitoring in buildings and underground environment,
- . Monitoring of radon activity concentration vs time,
- Expertise.



- High sensitivity radon measurement obtained by the association of an optimized measurement chamber and an electric field.
- > Spectral analysis allowing discrimination of Radon220 and Radon222.
- > Simultaneous measurement of radon, temperature and humidity.
- Continuous measurement with programmable cycle.
- Control via 2 press pads.
- > Screen display of spot activity concentration, mean activity concentration and trend curve.
- > Radon measurement display can be deactivated : « Blind mode » when data confidentiality is required.
- **PC** communication via infra red reader.
- > Battery powered, for up to 10 days.
- The battery is recheargeable by induction, with a purpose built charger.
- > Sensor parameters setting and data download via RnView3 software.



Compliant with international standards ISO 11665-4: 2012 and ISO 11665-5: 2012.



RnView3 Software

PC Software operating under Windows XP, Windows Vista, Windows 7

Monitoring:

- eDPRW initialisation,
- Complete data readout of the memory contents,
- display of radon activity concentration, temperature, and relative humidity vs time,
- display of mean radon activity concentration over a selected time period,
- Data transfer towards MS Excel, printout.

ALGADE INSTRUMENTATION



eDPRW

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Specifications:

RADON MEASUREMENT:

Radon penetrates the detection volume through a filter collecting all solid decay products.

Radon activity concentration is determined by measuring the α -activity of radon progenies, collected by an electric field on the surface of a silicon based detector.

To identify radionuclides, eDPRW has an inbuilt alpha spectrometer.

Energy range 0 to 10 MeV over 128 channels, resolution 0.1 MeV Measurement sensitivity: 30 Bq.m⁻³ per pulse.h⁻¹ (typical). Maximum activity concentration > 1 MBq.m⁻³

Detection limit (DI) and uncertainty vs exposure time.

	DI
1 h	145 Bq.m ⁻³
2 h	82 Bq.m ⁻³
7 h	34 Bq.m ⁻³
35 h	14 Bq.m ⁻³

	10%	20%
100 Bq.m ⁻³	< 150 h	< 35 h
400 Bq.m ⁻³	< 35h	< 8h
1000 Bq.m ⁻³		< 4h
Uncertainty factor of 2	calculated	for a coverage

The radon chamber used for calibration is linked to LNHB, the French national metrology lab for ionizing radiations.

References to order:

eDPRW	P-519-100
Battery charger	P-519-101

Infra red reader P-590-111 RnView3 software P-519-103

Environmental parameters:

Temperature Sensor: 0.1°C accuracy (absolute)

Humidity sensor: 10 to 95 %, ± 3 %, accuracy allowing adjustment of the radon activity concentration.

Additional sensors:

Shock sensor: detection of impacts on the instrument Battery voltage: 0.1 V (resolution)

Monitoring:

Microcontroller board 14 bits with RISC architecture. Display by OLED graphic screen 64x128 (h* l) Menu access via 2 push pad:

Measure storage:

64Mo Flash memory

Capacity: 14 400 data (5 months @ 15min)

Measuring cycle:

Intervals of 15 min (recommended), 20, 30, 60, 120, 180 or 240 min.

Power supply:

Li ion battery, 3.7V / 1.8 Ah,

Autonomy: 10 days screen on, 15 days screen off.

Rechargeable by induction from a purpose-built

Maximum charging time: 12 h.

Parameters setting and data download:

Infra red connection with a reader linked by USB to a PC

Housing: Plastic housing ABS + PC H*L*D: 133*74*33 mm.

Weight: 295 g

Operating Conditions:

+5°C to +40°C / 10-90 % relative humidity Protection index: IP54

eDPRW is supplied with:

- a battery charger,
- an infra red reader,
- RnView3 software
- Calibration certificate indicating the calibration factor of the radon sensor
- User guide

²¹⁶Po is used for the measurement of ²²⁰Rn.

²¹⁸Po is used for the measurement of ²²²Rn.