

## Radim-3W Radon Detector



### Application:

The Radim-3W radon detector is applied for measurement of radon in water samples.

### Features:

- **High sensitivity:** 20 counts/(Bq/l) , minimal radon concentration:  $(1.5 \pm 0.3)$  Bq/l
- **Continuous battery operation:** 40 days
- **Humidity, temperature and pressure measurement**
- An optimal form of the chamber and high electric field **reduces** the **influence of humidity** and the results are corrected for humidity
- **Fast response** to a step change of radon concentration
- **Simple operation** by means of 3 buttons or by PC (remote control)
- **Large memory:** 16096 measurements can be stored in the memory
- **Sampling time:** adjustable to 10 or 30 minutes
- **Simple data reading:** results are presented as Bq/l

**Technical Specifications:**

<b>Measured quantity:</b>	The radon concentration in water [Bq/l]
<b>Principle of measurement:</b>	The closed detection chamber is filled by an external pump from the aerator where radon is released from water by bubbling. The radon activity is determined by measuring the $\alpha$ -activity of $^{218}\text{Po}$ (RaA), collected by the electric field on the surface of the semiconductor detector.
<b>Response:</b>	30 minutes measurement - 20 counts/(Bq/l) 10 minutes measurement - 7 counts/(Bq/l)
<b>Minimum concentration:</b>	Activity determined with a statistical error equal to $\pm 20\%$ : 1,5 Bq/l for 30 minutes measurement 4 Bq/l for 10 minutes measurement
<b>Maximum concentration:</b>	3 kBq/l for 30-minutes measurement 8 kBq/l for 10-minutes measurement
<b>Sampling time:</b>	10 or 30 minutes
<b>Effect of humidity:</b>	The change in the relative humidity from 50% to 90% decreases the sensitivity for $-27\%$ . The results are automatically corrected for the effect of humidity.
<b>Electronics:</b>	Low power electronics; protection of data
<b>Power supply:</b>	Mains supply for the continuous operation of the Radim-3W and integrated rechargeable NiMH-batteries (6 NiMH batteries with capacity of 4.5 Ah) for an autonomous operation of approx. 40 days.
<b>Power consumption:</b>	4mA during measurement, 57 $\mu\text{A}$ in stand-by mode
<b>Memory capacity:</b>	For the results of 16096 individual measurement intervals
<b>Thermometer:</b>	Precision: $\pm 0.5\text{ C}$
<b>Barometer:</b>	Range: 750 to 1150 hPa, resolution: 0.1hPa, precision: $\pm 3\text{ hPa}$ , temperature coefficient: $\leq 0.1\text{ hPa}/^\circ\text{C}$
<b>Hygrometer:</b>	Range: 10 to 95 %, precision: $\pm 3\%$ , the value of the absolute humidity [ $\text{g}/\text{m}^3$ ] is automatically calculated by the Radim-3W
<b>Display:</b>	LCD, 2x 16-characters,

