RAD AQUA

Continuous Radon in Water Accessory for RAD7

The RAD AQUA is an accessory for the DURRIDGE RAD7 radon detector that is used to bring the radon concentration in a closed air loop into equilibrium with the radon concentration in a flow-through water supply. The RAD AQUA consists of a spray chamber, called an “exchanger”, that brings the air and water into equilibrium. The radon in the air is monitored continuously by the RAD7.

The partition coefficient (the ratio of radon concentration in the water to that in the air at equilibrium) is determined by the temperature at the air/water interface. This temperature is measured with a temperature probe inserted into the exchanger. At typical room temperature the coefficient is about 0.25. That means the concentration of radon in the air is four times higher than in the water. As a result, the system’s sensitivity to radon in water is four times higher than the sensitivity to radon in air.

It takes time for the water to deliver radon to the air loop and for the RAD7 to respond to the changed radon concentration. With optimum configuration the response time of the system may be reduced to less than half an hour.

Product highlights

- **Radon and Thoron Measurement**: Continuous monitoring in water.
- **Simple to Use**: Just connect it to the tap and hook it up to the RAD7.
- **Fast**: 95% response in 30 minutes.
- **Sensitive**: Can monitor radon even in concentrations below 1 pCi/L.
- **Accurate**: Measurements are precise within +/- 5%.
- **Clean and Safe**: Involves no hazardous materials or chemicals.
- **Complete**: Includes temperature logger and necessary software.
- **Great Value**: Practically no running costs.

How it works

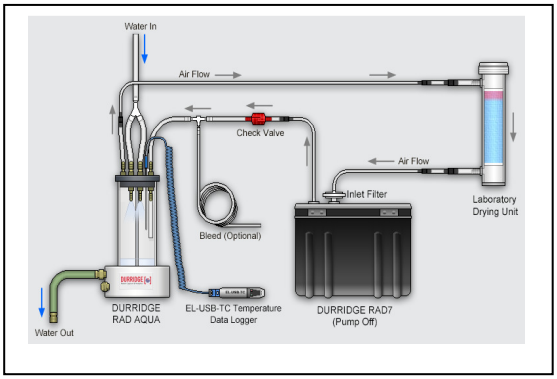
Water passes continuously through the RAD AQUA exchanger. Air flows in a closed loop through the exchanger and through the RAD7. Radon in the air comes into equilibrium with radon in the water. From the radon concentration in the air and the temperature of the air/water interface, the radon concentration in the water is determined. This is the fastest, most sensitive method of measuring radon in water, and it can monitor both radon and thoron levels continuously.

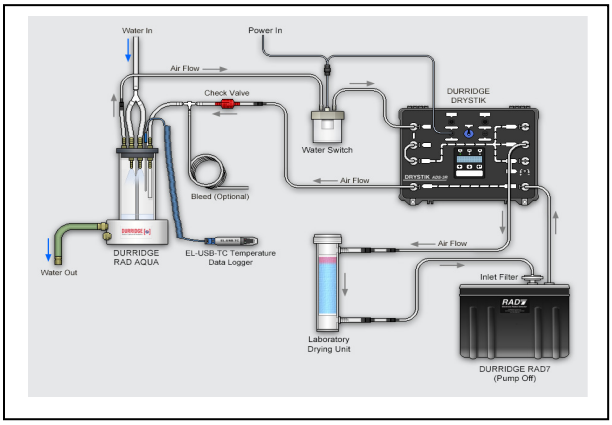
The RAD AQUA is capable of delivering 0.19 gpm, 1.14 gpm and 4 gpm, respectively, at 20 psi water pressure.

RAD AQUA Physical Specifications

RAD AQUA Shipping Dimensions	16″ x 8″ x 8″ (41 cm x 20 cm x 20 cm)
RAD AQUA Shipping Weight	7 pounds (3.2 kg)


DURRIDGE


Water In
Air Flow
Check Valve
Air Flow
Inlet Filter
Laboratory
Drying Unit
Bleed (Optional)
DURRIDGE
RAD AQUA
EL-USB-TC Temperature
Data Logger
DURRIDGE RAD7
(Pump Off)
Water Out


Water In
Power In
Air Flow
Check Valve
DURRIDGE
DRYSTIK
Water Switch
Air Flow
Bleed (Optional)
Air Flow
DURRIDGE
RAD AQUA
EL-USB-TC Temperature
Data Logger
Water Out
Inlet Filter
Laboratory
Drying Unit
DURRIDGE RAD7
(Pump Off)