

## Welcome to Radfire

Radfire products are manufactured then distributed through Fluid Products. Fluid Products was established in the 1980's and is still owned and operated by the same family.

Our company is recognised for our knowledge, product range and stock holdings, reliability, competitiveness and technical support.

## Pioneers to keep you on top!

Our team's network of representation, constantly in touch with local conditions, ensures our continuous release of new products are viable and our solutions are appropriate for the most challenging applications.

## A name you can rely on and trust – some things never change!

Testing to stringent standards is our number one priority so that the market receives what they have come to expect from the trusted name in liquid filtration and treatment.

### Applications Warning

Minimum water characteristics must be met before installation of Radfire<sup>®</sup> to ensure proper operation and continuous protection:

#### Operating Parameters

Iron	less than 0.3 mg/L
Hydrogen Sulphide	less than 0.005 mg/L
Suspended solids	less than 10 mg/L
Manganese	less than 0.05 mg/L
Hardness	less than 110 mg/L
Max filtration	10 micron or less
Ambient air temperature	0°C - 50°C
UVT	min 85%
Installation	Vertical or horizontal*

\* Systems with sensors must be installed vertically.



## Advantages of Ultraviolet Systems



### Environmentally Friendly and Chemical Free

- No risks of overdosing.
- No chemical by-products & residues.
- Does not lead to the formation of corrosive substances.



### Reliable Disinfection

- All micro-organisms are susceptible to Radfire UV disinfection.
- Long Service Life.
- Easy maintenance.
- Best available disinfection without use of high temperatures.



### Economical

- Hundreds of litres are purified, for each cent of operating cost.
- Long Service Life.
- Easy maintenance.



### Fast, Safe, Clean Water

- No change to the colour, odour or taste of water.
- Water is ready for use as soon as it leaves the purifier.
- Does not alter substances in water.



### Why is Radfire a better way to go?

Radfire® ultraviolet (UV) water disinfection systems are designed specifically to kill harmful microorganisms in untreated water supplies (eg. rain tanks, bore water and other alternative water supplies).

UV systems are commonly installed by homeowners who have received a positive *E. coli*, *Cryptosporidium*, or *Giardia* water test result, as well as those with reason to suspect that they are at a higher risk for such contamination, and those seeking to have peace-of-mind that their water is being properly disinfected prior to use.

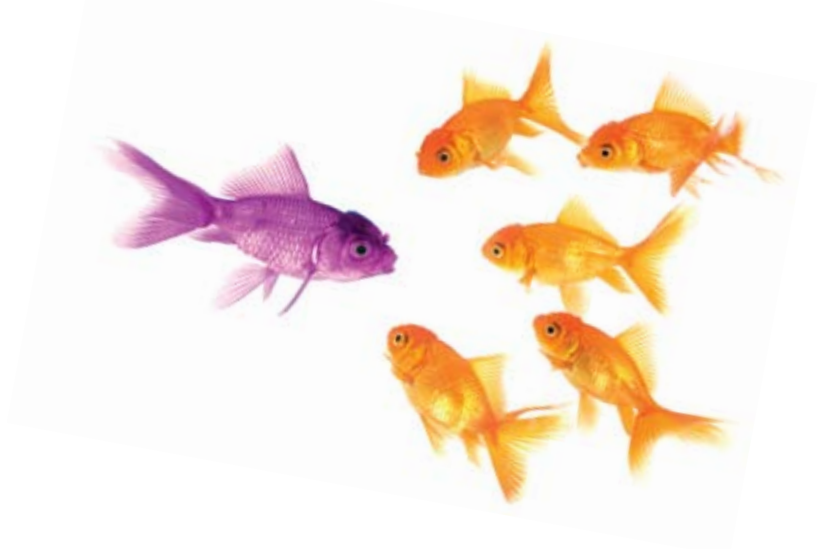
### Eco-friendly, economical and safe

Whole house UV water disinfection systems are rapidly increasing in popularity due to their low maintenance requirements, ease of operation, economical purchase price and operating cost. Due to the fact that unlike other treatments designed for microbiological contaminants, UV does not introduce any harmful chemicals to your water.

### Who uses Radfire Systems?

- Schools
- Commercial water
- Hospitals
- Homes & apartments
- Food production & prep
- Agriculture
- Nursing homes
- Aquaculture
- Water treatment systems
- Restaurants
- Bottled water production
- Hotels & resorts
- Community water supplies
- Laboratories

### Not all UV systems are the same!

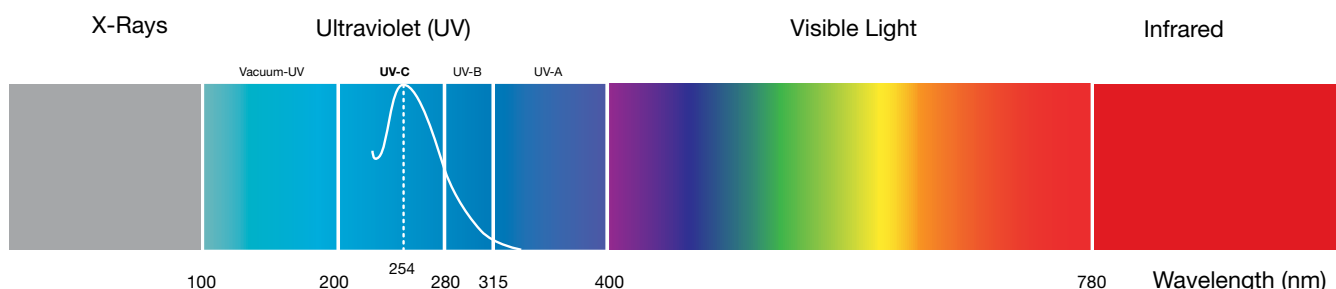


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## How does Ultraviolet light disinfect water?



The curved line above shows germicidal effectiveness at different wavelengths. Maximum disinfection of micro-organisms is achieved at 254nm in the UV-C range of the electromagnetic spectrum.

Ultraviolet (UV) frequencies occur after violet in the visible light range of the electromagnetic spectrum (see above). The water treatment industry uses a high-powered form of UV light called UV-C or "germicidal UV" to disinfect water

UV-C rays penetrate micro-organisms and destroy their ability to reproduce, effectively rendering them harmless. It's a simple but effective process, destroying a minimum of 99.99% of harmful micro-organisms, including *E. coli*, *Cryptosporidium*, and *Giardia*.

Not only is it safe and highly effective, UV does not change the taste, colour, or odour. It simply removes the risk of illness caused by microbial contamination, making water safe.

## What are some of the bacteria and viruses UV disinfection will protect me from?

UV lamps provide effective protection against microorganisms present in water supplies.

Radfire systems used as directed to disinfect clear water, provide an ultraviolet dosage in excess of 30 mJ/cm<sup>2</sup> at the end of lamp life – approx. 9000 hrs

## Why not use chlorine?

Chlorine changes the taste and odour of water. Chlorination may also produce harmful by-products that are linked to the incidence of cancer.

## Comparison of Water Disinfection

Methods	Ultraviolet	Chlorination*	Ozone
Destruction	Physical	Chemical	Chemical
Capital Cost	Low	Medium	High
Operating Cost	Low	Medium	High
Maintenance Cost	Low	Medium	High
Maintenance Frequency	Low	Medium	High
Disinfection Performance	Excellent	Very Good	Unpredictable
Contact Time	1-5 seconds	25-45 minutes	5-10 minutes
Personnel Hazards	Low	Medium	High
Toxic Chemicals	No	Yes	Yes
Water Chemistry Change	No	Yes	Yes
Residual Effect	No	Yes	Yes
Taste/Odour effect	No	Yes	Yes

\*Including dechlorination by carbon filtration

## Ultraviolet dosage levels

Organism	Dose*	Associated Disease
<i>Bacillus subtilis</i> spores	22	Diarrhoea
Bacteriophage	6.6	--
Coxsackie virus	6.3	Intestinal infection
<i>Cryptosporidium</i>		Intestinal infection
<i>Sigella</i> spores	4.2	Bacterial Dysentery
<i>Escherichia coli</i>	6.6	Food Poisoning
<i>Feca coliform</i>	6.6	Intestinal infection
<i>Giardia lamblia</i>		Intestinal infection
Hepatitis A virus	8	Hepatitis of the liver
Influenza virus	6.6	Influenza
<i>Legionella pneumophila</i>	12.3	Legionnaires' Disease
<i>Mycobacterium tuberculosis</i>	10	Tuberculosis
Poliovirus	7	Poliomyelitis
<i>Pseudomonas aeruginosa</i>	3.9	Tissue and blood infection
<i>Salmonella typhi</i>	7	Typhoid Fever
<i>Staphylococcus aureus</i>	6.6	Food poisoning, Toxic Shock Syndrome, etc
<i>Streptococcus</i> spores	3.8	Laryngitis

\*Nominal Ultraviolet dosage (mJ/cm<sup>2</sup>) necessary to inactivate more than 99.99% of specific microorganisms.