

Choosing An Ultraviolet (UV) Water System For Your Home

Ultraviolet (UV) water disinfection equipment has become commonplace in many rural homes across the USA, Canada, and the rest of the world.

Through water testing many homeowners discover that their water is contaminated most commonly with Coliform bacteria but occasionally with more dangerous e.coli. It's at this point that most people choose to go with an ultraviolet (UV) water system to solve their problem. The trouble is, there are many manufacturers and models to choose from – so which one should you choose?

Having a water source contaminated with bacteria can be a scary problem for a homeowner to tackle. The first step that most people take is to consult anybody and everybody who has anything to do with home water systems. This often means a conversation with the plumber. While there are some plumbers who are well versed in the world of water treatment, most only sell and install the stuff when their existing customers demand it. Asking the plumber for advice on which UV system you should use to protect you and your family is akin to asking him which models his local wholesaler keeps in stock. To be clear, most plumbers when asked about a UV system will go back to their wholesaler and find out what models the wholesaler has on the shelf. This can be a real mixed bag. Some wholesalers will have high-quality products and some will carry the cheapest brand they can find.

Often, the next step that a consumer takes is to speak with the local water treatment shop. Typically, these stores will carry higher quality products with many more bells and whistles available. Often the prices are very high, and it can be difficult to figure out which features are worth the money.

It's up to you, the consumer, to arm yourself with the information you need to make an informed decision. The rest of this article will help to educate you on the ins and outs of UV disinfection to help you make a smart choice.

LAMP WATTAGE

Manufacturers of electronics do a great job of presenting consumers with so many technical details about their products that it obscures some of the most important details. Lamp wattage is certainly one of these often-overlooked specs. The performance of a UV system, and the level of protection that it affords, has first and foremost to do with the power of the UV lamp being used. An ultraviolet (UV) lamp is a specialized fluorescent lamp very similar to the kind you use to light your home. The higher the wattage of the UV lamp, the brighter it is. A brighter lamp delivers more UV intensity and it provides a higher level of protection. Period. Don't mistake system wattage for lamp wattage. Some inefficient UV systems will use a low power lamp but the power supply that drives the lamp may be a higher wattage. You must find out the lamp wattage. Another word of caution – different ultraviolet (UV) system manufacturers will use different lamp technologies. You may find an 8 gallon per minute system made by manufacturer X uses a 3-foot long lamp while manufacturer Y uses a 2-foot long lamp and calls their system a 12 gallon per minute system. How can the shorter lamp deliver higher performance? Simple. Better technology. Lamp size has nothing to do with performance. Again, wattage is king.

PERFORMANCE INDICATORS

If you're thinking about a home UV water system it's usually because you have bacteria in your well or you're concerned that you might in the future. For this reason, you need to know if your UV system is working or not. There are several different features offered by most UV system manufacturers to help you know if your system is functioning properly. The first and most basic is an audio/visual performance indicator. Any UV system that you're considering should have an indicator light that tells you if your system is in failure. This should be accompanied by an audio alarm that sounds if the system fails. Since many ultraviolet (UV) light water systems are installed in the basement, make sure the audio alarm is loud enough that you can hear it on your main living level. The audio/visual indicator will tell you if you've had a mechanical failure of the system. Basically, it will tell you if your lamp or power supply have failed. Some more sophisticated systems will provide you with a code indicating which component has failed. This can make troubleshooting and fixing your UV water system far more straightforward. If you are going to be performing the maintenance and upkeep of the system yourself, this is a feature that could be of great value.

The next level of performance monitoring is a system that includes an ultraviolet (UV) sensor, sometimes called a UV monitor. Think of a UV sensor as an electronic eye that stares at the UV lamp. If for any reason the "eye" does not receive enough UV light it will trigger an alarm. Reasons for a UV sensor alarm include a dirty sleeve, poor incoming water quality, or an old UV lamp. UV sensor technology is not inexpensive and if you choose a model with a sensor expect to pay several hundred dollars more than a similar capacity model without a sensor. It's important to note that a system with a sensor is typically much more finicky than a non-sensor system. That is, the unit will do much more beeping and alarming than a system without a sensor. For some people, especially those with dangerously contaminated water, this is a good thing. For people who are buying a UV system as a precautionary measure, this might be an annoyance. One last note about ultraviolet sensors – some applications in some jurisdictions require that you have one. If your water system is considered "public" in any way, shape, or form you probably need to have a UV water system with a sensor and/or an NSF certification.

NSF CERTIFIED ULTRAVIOLET WATER SYSTEMS

In the world of ultraviolet (UV) water systems there are two groups – NSF Certified and non-certified systems. The NSF is an organization that performs testing of water disinfection equipment including ultraviolet (UV) systems. A manufacturer can send their system to NSF and pay to have them test it to their standards. Systems that pass then carry the NSF-Certified mark. So, how does NSF do their testing? Simply stated, in order for a UV system to pass the NSF testing it must deliver a high level of UV disinfection performance, and must sound an audible/visible alarm if that level of performance is compromised. In order for the system to accomplish this it needs to have by default a UV sensor and a flow restrictor. NSF Certified UV systems are most typically installed in public water situations such as community centers, churches, schools, etc. Some states, however, demand that any UV system installed in any situation must be NSF certified. These states are California, Iowa, Massachusetts, and Wisconsin. In all other states it is rare to have an NSF certified system installed on a private residential water supply.

WARRANTY

The only thing to mention about the warranty on UV systems that differ from some other products is that some manufacturers offer pro-rated warranties. So, if the manufacturer states that they offer a 10-year warranty and your system breaks after 5 years, some UV system manufacturers will sell you a new power supply for half price while others will replace it for free. Avoid pro-rated warranties where possible. Keep in mind that it's much more common to have a UV lamp or power supply burn out prematurely than it is to have the chamber spring a leak.

EASE OF MAINTENANCE

There are a few manufactures of UV systems that offer products that can be serviced without tools. This is a major plus for the homeowner who is going to be maintaining the system himself. Keep in mind that you will want to remove the quartz sleeve for cleaning periodically and will have to remove the lamp once a year to change it. Some UV systems make it very easy to remove the lamp but nearly impossible to remove the quartz sleeve without breaking it. A broken sleeve is an expense and a major inconvenience – you won't be able to turn the water back on until it's been replaced.

About the Author

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