

Use and Care Guide

Water2buy Ultra Violet Disinfection System



Thank you...

And Welcome to your new world of better safer water with Water2buys Aqua Smart 6 Gallon per minute Ultra Violet Disinfection System.

Our Aqua Smart Ultra Violet Disinfection System will help ensure that microorganisms such as Protozoa, Bacteria, Moulds, Yeasts, Fungi, Viruses and Algae are inactivated in Your Drinking Water.

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How your Water2buys Ultra Violet Disinfection system works

It has been known for over a century (Schenk 1891) that the ultra violet wavelengths present in sunlight have germicidal effects. The practical utility of UV radiation for the control of organisms followed the devising of the mercury vapour lamp. This form of radiant energy induces photochemical reactions involving biomolecules in microorganisms. The resulting molecular alterations inhibit the growth of microorganisms, and in higher concentrations will kill them

The Aqua Smart method of generating UV radiation is by discharge lamps. A quartz tube contains an inert gas and a metal, usually mercury. Electrodes located at one end of the tube, may be cold or preheated. In either case an ignition voltage is required to begin the discharge.

The lamp burning voltage is less than half that of the line voltage, thus the lamp can be started easily by means of ballast and starter.

Aqua Smart lamps are based on mercury / argon mixtures and exhibit the highest efficiencies and are the best performing.

During discharge, particularly at low pressures, mercury atoms in their excited states radiate mainly at wave lengths of 184.9nm and 253.7nm resulting in the generation of UV light.

Visible light is at a wavelength >400nm.

UV radiation can, for practical reasons, be divided into four sections as follows:-

- UV-A between 400 and 315nm
- UV-B between 315 and 280nm
- UV-C between 280-200nm
- UV-Vacuum below 200nm.

AQUA SMART ULTRA VIOLET DOSAGE

UV devices are rated by their capacities to treat water at specific flow rates. Actually, the UV dosage is the real consideration. It is the product of radiation intensity and the exposure time, and is expressed as microwatts-second per square centimetre ($\mu\text{Ws}/\text{cm}^2$).

Historically it is stated that the minimum UV dose level for effective disinfection is $16,000\mu\text{Ws}/\text{cm}^2$. However, this figure was determined in the laboratory and relates to the dose required to reduce the concentration of E.coli by a factor of 100,000:1 or 99.999%, E.coli being generally accepted as the indicator organism for faecal pollution of drinking water supplies.

Current practice is sizing UV systems at $30,000\mu\text{Ws}/\text{cm}^2$ at end of lamp life.

Aqua Smart Ultra Violet lamp life is 8,500 hours or 1 Year.

FEED WATER SPECIFICATIONS

Effectiveness of Ultra Violet Disinfection is contingent on a number of factors but the primary factor is the Ultra Violet transmission value of water. Aquasmart UV feed water specification values are as follows:-

- Max Turbidity = 5NTU
- Max Iron = 0.3ppm
- Max Manganese = 0.05ppm
- PH = 6.5 – 9.5
- Max TDS = 10ppm
- Max Hardness = 6gpg

Pre-treatment and/or Manual or Automatic wiper mechanism can assist to a degree in overcoming the above.

Water2buy recommends that all UV systems include pre-filters to process the water before it reaches the UV lamp. This will help ensure that maximum UV exposure is achieved.

CAUTION

Read and Follow all Safety Rules and Operating Instructions before First Use of this Product.

NEVER LOOK DIRECTLY AT A LIGHTED UV LIGHT.

If you have questions when installing, operating or maintaining your Aqua Smart ultraviolet disinfection System call us or log on to www.water2buy.com

WARRANTY

For one year from the date of purchase, when the Aqua Smart Ultra Violet Disinfection System is installed and maintained in accordance with our instructions. Water2buy will repair, free of charge, defects in the material and workmanship, except glass protective sleeve and the ultra violet light through out Europe. This warranty applies only while this product is in use in Europe.

(Except filter Glass Sleeve and Ultra Violet Bulb)

WATER2BUY INSTALLATION POLICY

All installations shall be performed in a neat, workmanlike manner in accordance with generally accepted trade practices. Further, all installations shall comply with all local laws, codes, regulations, and ordinances.

SAFETY GUIDES

Read all steps, guides and rules carefully before installing and using your Aquasmart Ultra Violet system. Follow all steps exactly to correctly install. Reading this manual will also help you to get all the benefits from the Water2buy ultra violet disinfection system
Follow your local codes if they differ from guidelines in this manual
Do not allow this unit to freeze. Damage from freezing will void this Aquasmart ultra violet units warranty

WHERE TO INSTALL THE ULTRA VIOLET DISINFECITON SYSTEMS

Water2buy Ultraviolet Water Treatment Systems are designed for indoor use only. The UV lamp requires a start-up period of one to two minutes in order to achieve full intensity. Repeated starting of the UV lamp will shorten its life. **Therefore, it is recommended that the UV lamp remains on at all times The system must be installed in accordance with applicable city, country, and local plumbing codes.**

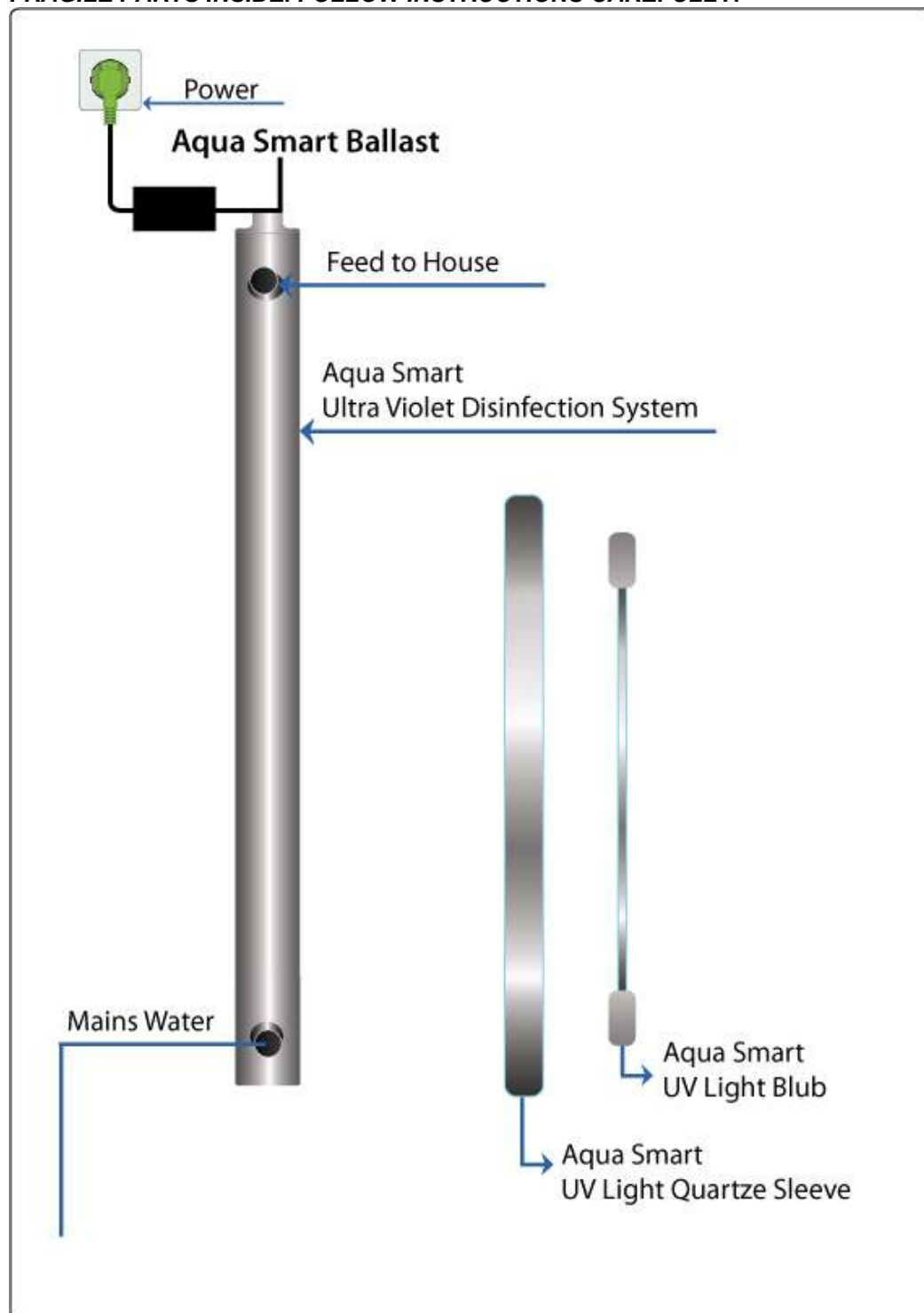
INSTALLATION

WARNING: NEVER LOOK DIRECTLY AT A LIGHTED UV LAMP.

ULTRAVIOLET RAYS CAN BE HARMFUL TO EYES. ALWAYS SHUT OFF WATER TO SYSTEM AND DISCONNECT POWER WHEN SERVICING.

ASSEMBLY IS REQUIRED BEFORE INSTALLATION.

FRAGILE PARTS INSIDE. FOLLOW INSTRUCTIONS CAREFULLY!



CONTENTS

WATER2BUY 6 GALLON AQUA SMART UV SYSTEM

AQUA SMART UV 6A Ultraviolet System
Control Module Box
Ultraviolet Lamp (in packing tube)
Quartz Sleeve (in packing tube)
Installation Manual and Owners Guide

INSTALL MOUNTING BRACKETS

CAUTION: Do not use any damaged component.

If damage is found, contact Water2buy before proceeding.

1. Unpack boxes and verify that all required components have been included as listed above.
2. Inspect each component for damage.
3. Determine location for installation of the UV system:
 - a. The Water2buy Aquasmarts Ultra Violet System can be installed vertically or horizontally
 - b. Mounting point should allow sufficient room above and below UV system to service and remove the UV lamp without removing the UV system.
4. Select a location and install the mounting brackets.

INSTALLED EXSISTING SYSTEMS PLUMBING

CAUTION: Water pressure must not exceed 75 psig (517 kPa) or a pressure regulator must be used.

CAUTION: Do not install pump on outlet side of system as damage to the quartz sleeve may occur. If pump is required, install it on inlet side of system and verify output pressure does not exceed 75 psig (517 kPa).

CAUTION: Warranty is void if the unit is used with pressure exceeding 75 psig (517 kPa).

Higher pressures may damage equipment and may not allow for proper exposure time with the Aqua Smart UV lamp or both.

CAUTION: Do not over tighten fittings connected to inlet/outlet ports of the Aqua smart UV system.

5. Connect inlet of Aqua Smart UV system to source water supply using proper fittings and thread sealing tape.
6. Connect outlet of Aqua Smart UV system to water distribution lines using proper fittings and thread sealing tape.

INSTALL QUARTZ SLEEVE AND DISINFECT SYSTEM.

CAUTION: QUARTZ SLEEVE IS VERY FRAGILE!

For safety, wear a protective glove when handling quartz sleeve. Do not touch quartz sleeve or UV lamp with bare hands. Fingerprints will reduce the effectiveness of the light.

7. Remove Quartz Sleeve from packing tube. While holding middle of quartz sleeve with one hand, slide protective bag with other hand to expose open end. Insert quartz sleeve straight into UV System chamber.
8. Install o-ring over quartz sleeve
9. Tighten lock nut to hold quartz sleeve in place.

NOTE: Wipe all fingerprints and excessive lubricant from quartz sleeve with isopropyl alcohol.

CAUTION: TIGHTEN END NUT BY HAND ONLY. Do not use tools as they will over-tighten and may damage quartz sleeve. Take care not to cut or pinch .O. Ring

NOTE: Hold UV lamp by ceramic ends only. Do not touch the glass. Clean with isopropyl alcohol if necessary.

10. Remove UV Lamp from packing and inspect it for damage. If damage is found, contact Water2buy.

11. Insert UV lamp into quartz sleeve, slide on black rubber cover and connect UV lamp into four-pin socket located at the bottom of UV Control Lead.

NOTE: The UV lamp should remain on at all times during use because; repeated starting of UV lamp shortens lamp life, and UV lamp requires a warm up period of 1-2 minutes.

12. Turn on water supply and check for any leaks.

13. Plug in Aqua Smart Ultra Violet unit.

NOTE: When the Aqua Smart ultraviolet water treatment system is unused for several hours, water within system could become warm. This is a normal condition. To cool the water, dispense water from system.

NOTE: System is now ready for use.

Service Requirements Recommended Service Intervals

To ensure the system operates at its optimum level certain routine maintenance must be performed. Frequency of maintenance performance will depend on source water quality and level of system usage.

CLEAN: Each time filters are replaced.

DISINFECT: At least once a year.

UV Lamp: Change Annually

Quartz Sleeve: Clean when changing filters. Replace only if damaged or cannot be cleaned by non-abrasive methods.

Filters: Normal life 4-6 months. Filter life will vary due to water conditions. A reduced flow rate or deteriorating water quality indicates that filters must be changed.

CLEANING, DISINFECTING, AND ROUTINE MAINTENANCE PROCEDURE RECOMMENDATIONS

HAVE ALL COMPONENTS ON HAND AND READY BEFORE BEGINNING PROCEDURE. A CLEAN WORK AREA AND EQUIPMENT ARE ESSENTIAL TO PROPERLY CLEAN AND/OR DISINFECT THE SYSTEM. (i.e., CLEAN HANDS, TOOLS, WORK SURFACE, AND CONTAINERS)

EQUIPMENT NEEDED

Safety Glasses
 Rubber Gloves, Sanitary
 Wash Cloth, Clean and Lint-Free
 Liquid Dish Soap
 Household Bleach . Unscented Only
 (5 ¼% Sodium Hypochlorite)
 Plastic Bucket
 .O. Ring Lubricant, Silicone Based

NOTE: Refer to individual System Assembly and Activation Procedures to identify specific components matching the descriptions shown in this procedure.

1. Disconnect system from electrical outlet.
2. Mix a mild cleaning solution of dish soap and clean potable water in the plastic bucket.
3. Close feed water supply valve and open downstream faucet to relieve system pressure.

CAUTION: Do not attempt to remove nuts until water flow stops. This reduces pressure inside the system so nuts may be safely removed.

NOTE: Use sanitary rubber gloves for this procedure to avoid contaminating cleaning solution or filters. Wear gloves whenever cleaning components or handling new filters.

4. Clean quartz sleeve carefully using vinegar to remove hardness. Do not use abrasive materials. Rinse sleeve thoroughly with clean potable water. Replace any sleeve that is damaged or will not come completely clean.

CAUTION: Use care when cleaning the Aqua Smarts UV unit. Do not get the UV control module or connectors wet.

DISINFECTION PROCEDURE

CAUTION: WEAR SAFETY GLASSES AND SANITARY RUBBER GLOVES WHILE PERFORMING THIS PROCEDURE.

CAUTION: EXCESSIVE CONCENTRATIONS OF BLEACH WILL DAMAGE PLASTIC AND RUBBER COMPONENTS.

Rinse all parts that contact bleach thoroughly with clean potable water.

CAUTION: Read the "WARNINGS" on the bleach container before using.

CAUTION: Handle sanitizing solution carefully. Avoid contact with unprotected areas.

1. Disconnect system from electrical outlet.
2. Mix sanitizing solution:

CAUTION: QUARTZ SLEEVE IS VERY FRAGILE!

Filter Replacement: Filters will normally last approximately four to six months. Filter life will vary due to water conditions. A reduced flow rate or deteriorating water quality indicates that filters must be changed. **Use only Water2buy filters and Aqua Smart UV Blubs these filters and UV blubs are specially designed to work in the Aqua Smart ultraviolet disinfection process. Use of non-Water2buy filters and UV Blubs voids the warranty.**

CAUTION: Use care when changing the filters to avoid breaking the quartz sleeve.

UV Lamp Replacement: Lamps must be changed every twelve months. While UV lamps rarely burn out, they do lose their disinfection power. **Use only Water2buy Aquamart UV lamps as they are specifically designed for the Water2buy system to deliver high quality drinking water.**

Item No	Water Flow	Light Power	Light Tube No	Dimension	Water Entry NPT	Casing Material S.S	Pressure Max
UV-6A	20LPM	39W	1	37" * 2.5"	1/2"	304S.S	125PSI

UV-6A Specification

Thank you for choosing Water2buy.com

Value, Quality, Service