UV Sterilizer Selection Guide

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Proper fish husbandry and regular routine maintenance are the keys to a healthy aquarium environment. However, from time to time, unexpected loss, sudden algae blooms, and other events compromise the health and beauty of your prized aquarium. Perhaps a UV sterilizer is right for your aquarium.

When used in conjunction with proper fish-keeping practices, an ultraviolet sterilizer is a great way to help protect aquarium inhabitants from potentially harmful microorganisms. Ultraviolet sterilizers use a special fluorescent lamp that emits light at a wavelength of 253.7 nanometers. Aquarium water pumped through the UV chamber is exposed to this UV light and is irradiated. Free-floating microorganisms in the passing water are affected by the UV light and are no longer able to multiply. Through continual use, UV sterilizers can help manage water quality issues due to microorganisms such as bacteria, algae, and parasites.

If you decide to use a UV sterilizer, ask yourself the following questions:

What kind of organisms do I want to control? Bacteria, algae, or parasites?

Which style of UV sterilizer (in-line or hang-on unit) will best suit my existing aquarium system?

Choosing the right size unit

Proper flow rate through the UV chamber determines the effectiveness and use of a UV unit. Set at different flow rates, a UV sterilizer can be used effectively against bacteria, algae, or parasites. Different flow rates control different organisms. Therefore, a flow rate suitable for controlling bacteria or free-floating algae may not be effective against parasites. Larger organisms like parasites are more resistant to irradiation and require a slower flow rate to extend UV exposure time. To adjust UV exposure time, simply increase or reduce the rate water is flowing through the UV sterilizer.

UV Bulb (Watts)	gph to Control Bacteria and Algae	gph to Control Parasites

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4	60	N/A
8	120	N/A
15	230	75
18	300	100
25	475	150
30	525	175
40	940	300
65	1700	570
80	1885	625
120	3200	900
130	3400	1140

Though manufacturers' recommendations will vary, the above chart provides a general idea of the wattage and the corresponding flow rates required for the control of bacteria, algae, or parasites.

Different UV Sterilizer Styles

The specifics of UV sterilizers differ in a number of ways. But the most basic difference is their mounting style (either in-line or hang-on) and the manner in which water flows through them. Depending on the size and the particular aquarium setup, one mounting style may be more convenient to install than the other.

Tips from our Techs
Always locate UV sterilizers after mechanical filtration to help slow buildup on the quartz sleeve, thus requiring less maintenance in the long run.

In-line Sterilizers

Just as their name suggests, in-line models are plumbed directly into the main aquarium filtration system. The UV is placed after the mechanical filtration unit and should be the last in-line device before water returns to the aquarium. Generally a ball valve and bypass are used to adjust the flow rate through the UV sterilizer. Most in-line UV sterilizers are designed for larger aquariums and incorporate higher wattage bulbs encased in a long, cylindrical housing.

Hang-on Sterilizers

These compact sterilizers are mounted directly to the back of the aquarium. They are generally used as an independent device fed by a submerged powerhead. However, some hang-on sterilizers may also be connected to the return line from a canister filter or in-line filtration systems. Hang-on models tend to be easier to install and maintain, making them ideal for smaller aquarium setups.

In general, due to their relatively smaller size, a lower wattage bulb is used for hang-on sterilizers. However, to maintain efficient UV sterilization, these smaller units have a unique internal design. To maximize UV sterilization, a spiral or stepladder design is incorporated to extend the length of time the water is exposed to UV light.

Regardless of the difference, UV sterilizers require a water pump or circulation pump and plumbing (sold separately) to transport water from the aquarium, through the UV chamber, and back into the aquarium.

UV sterilizers have many advantages and very few drawbacks. In addition to being easy to install, requiring low maintenance, and being affordable, they can provide huge health benefits for your fish. Make sure you get one that is the correct size, operate it under the appropriate conditions, and follow the manufacturer's maintenance guidelines to ensure optimal performance.

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