UV Sterilizers

Drs. Foster & Smith Educational Staff

How a UV sterilizer Works

A properly-sized UV sterilizer sterilizer can rid your aquarium of free-floating algae, harmful bacteria, or certain parasites depending on the wattage and the flow rate through the unit. As a result, UV sterilizers minimize disease and keep your aquarium cleaner, clearer, and healthier.

Choosing a UV - Factors to Consider

Before selecting a UV sterilizer, determine your primary objective – whether to help control free-floating algae or to control parasites. By doing so, you will be able to select the proper unit to achieve your intended goal.

UV sterilizers work on the principle that special fluorescent UV lamps, at a peak wavelength of approximately 254 nanometers, can effectively irradiate microorganisms in aquarium water when exposed to this light. UV light in this wavelength alters the genetic material in the organism's nucleus, shortening its normal life cycle. However, the application and the efficiency of a unit are determined by flow rate as well as the wattage and age of the bulb.

Flow Rate

Adjusting the flow rate through your UV sterilizer, that is, shortening or lengthening the time organisms are exposed to the UV lamp (dwell time), alters its use. For example, controlling bacteria and free-floating algae can be accomplished with a relatively lower wattage unit at a higher flow rate. However, parasites are larger and more resistant to irradiation and require a longer dwell time to be affected by the UV light. A slower flow rate prolongs dwell time to expose parasites to an effective dose of UV light. Adjusting the output on your water pump controls the flow rate through your sterilizer. Use a ball valve or a tee to split the line to achieve the proper flow rate required to accomplish your objectives.

Wattage/Bulb Age

to treat parasites or to treat free-floating algae or bacteria in a greater volume of water. However, lamp effectiveness declines with time, so your UV sterilizer will not produce the same results after months of use compared to when it was new. Therefore, you may have to increase the dwell time (by lowering flow rate) to produce desired results. Replace the UV bulbs yearly, or per manufacturer's recommendation, in order to maintain UV efficiency. Also, clean the quartz sleeve of the lamp regularly to remove organic buildup. A clean bulb allows better penetration of UV light and maximizes the efficiency of the unit.

Though manufacturer's recommendations will vary, the chart on this page gives you a general idea of the wattage you'll need - and the proper flow rates to adjust your pump to - when using a sterilizer for controlling bacteria/algae and for controlling parasites.

	Maximum Flow Rate to Control:		
UV Bulb	**Bacteria and Algae**	**Parasites**	**Max Gallons**
8W	120 gph	N/A	Less than 75 gal
15W	230 gph	75 gph	75 gal
18W	300 gph	100 gph	100 gal
25W	475 gph	150 gph	150 gal
30W	525 gph	175 gph	175 gal
40W	940 gph	300 gph	300 gal
65W	1700 gph	570 gph	570 gal
80W	1885 goh	625 gph	625 gal
120W	3200 gph	900 gph	900 gal
130W	3400 gph	1140 gph	1140 gal