Simple Guide to Upgrading Aquarium Lighting

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Aquarium upgrades often involve replacing existing equipment. However, when it comes to aquarium lighting, upgrades do not always mean the purchase of a new light fixture. In many situations, lighting upgrades can be achieved by replacing your existing lamp with a different lamp. The following smart guide will help you through the upgrade process. Find out whether you will benefit most from a different lamp or a new light fixture.

Determine Your Lighting Needs

Research and determine the specific lighting requirements of the species you wish to keep. Proper lighting is not always about employing a higher wattage light fixture. Keep in mind that not all photosynthetic organisms require intense light conditions. In fact, there are many photosynthetic plants and animals that do well in low to moderate light conditions. Depending on the species you wish to keep, you can create a more suitable environment by simply using a lamp with a different color temperature (K-rating) or spectral output.

Color Temperature (K-rating) and Spectral Output

Lamps are available in a wide variety of color temperatures and spectral output. Color temperature, or K-rating, provides insight into the color/appearance of light while the spectral output describes light wavelengths emitted by the lamp, often in the form of a graph. In addition to these technical light characteristics, lamp manufacturers provide basic descriptors to simplify lamp selection. For example, lamps with a color temperature or spectral output that maximizes plant photosynthesis are often called plant lights or grow lights. Similarly, lamps suited for saltwater applications are generally referred to as marine lamps.

When More is More

While different lamps can improve functional light output of existing light fixtures, there are limitations. For example, most light fixtures are designed to fire (start up) a specific range of lamps. They are unable to properly fire a lamp that exceeds the fixture's ballast wattage

Q. When do I need to upgrade my light fixture?

A. In general, basic light fixtures need to be upgraded when keeping photosynthetic plants and animals that require higher light conditions.

how much wattage do you need?

A good basic rule to follow is to provide*:

>> 1 to 2 watts of lighting per gallon for fish-only aquariums.

>> 2 to 5 watts per gallon for freshwater planted aquariums.

>> 4 to 8 watts per gallon for reef aquariums.

To calculate the number of watts per gallon an aquarium receives from a light fixture,

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capacity. In other words, a 40-watt lamp will neither fit nor work properly with light fixtures designed for 20-watt lamps. Also, light fixtures are not capable of firing lamps from different systems. A standard fluorescent lamp is not compatible with any light system other than a standard fluorescent light fixture. When your lighting requirements exceed the wattage capacity of your existing light fixture, then it's time to look into buying a new light fixture.

Tips from Our Techs

Most light fixtures come pre-installed with manufacturer recommended lamps. Simply replace the old one with a lamp of the same style. If selecting a replacement lamp of different color-temperature, then take note of the following specifications of your existing lamp: Lamp style (determine if it is a standard fluorescent, T-5, or compact fluorescent lamp), lamp size (T-rating), lamp output (K-rating), lamp wattage, and pin configuration. With this information at hand, lamp selection is a matter of matching lamp specifications to your lighting needs.

simply divide the total wattage of the light fixture by the number of gallons of the aquarium. For example, a 55-watt fixture used over a 29-gallon aquarium will provide its inhabitants with slightly less than 2 watts of light per gallon (55 divided by 29 = 1.89).

*Keep in mind that these lighting requirements will vary depending on the species you intend to keep. It is essential to research the specific lighting requirements of each species.

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