Brief History of Aquarium Lighting

Drs. Foster & Smith Educational Staff



In many regards, the home aquarist has benefited immeasurably from technological advances, especially in concerns to aquarium lighting. In fact, aquarium lights were once chosen based on how they benefited our viewing pleasure. But today we understand that aquarium lighting is vital to the stress and activity levels, coloration, health, and growth of our fish, plants, invertebrates, and corals.

The Function of Aquarium Light

Proper aquarium lighting allows us to view our aquarium inhabitants. But more importantly, proper lighting drives photosynthesis to ensure plants, anemones, and corals have vital food sources and influences fish physiology and behavior, including spawning and feeding.

A variety of lighting options are now available to best replicate lighting conditions found in your aquarium inhabitants' natural habitat. Aquarium light fixtures are grouped into three general categories, each with its own unique history and benefits.

Standard Fluorescent Lighting

Once the standard for aquarium lighting, standard or normal output fluorescent lights remain the most popular choice for aquarium illumination. Basically, standard fluorescent bulbs are gas-filled glass tubes, first invented in the mid-1800s. Today, these versatile bulbs are available in a range of sizes, wattages, and spectrums to allow customized lighting in any fresh or saltwater fish-only aquarium.

Even better, normal output fluorescent lights are easy to use, affordable, and much more energy efficient than incandescent lights. As such, it is easy to see why beginning to advanced aquarists turn to normal output fluorescent lights for nearly all their basic aquarium lighting needs.

Compact Fluorescent Lighting

Can I upgrade my existing standard fluorescent light fixture with compact fluorescent bulbs?

A: Standard and compact fluorescent bulbs are not interchangeable. Standard fluorescent bulbs are double-ended, with contact pins on both ends, while compact fluorescent bulbs are single-ended with contact pins only on one side. Each fluorescent bulb type requires a light fixture

---:£:--!!..

Also known as CFLs, these higher output versions of standard fluorescent light systems first gained popularity in the home lighting industry during the mid-1990s. Almost instantly, aquarists sought ways to incorporate these longer lasting, brighter shining, and smaller, more energy efficient bulbs into the home aquarium. Today, CFLs are available in a range of color temperatures to suit both freshwater and marine aquariums.

specifically designed for the respective bulb type.

Basically, compact fluorescent lights utilize a twin-tube design for higher light output and greater intensity from a single bulb, when compared to standard fluorescent lamps. This space-saving feature is especially important in freshwater or reef and saltwater aquariums that require intense lighting without the high operating costs and heat emission of more professional systems.

Metal Halide Lighting

Compact and powerful, metal halide lighting systems were

how much light do you need?

- >> The amount of light your aquarium needs depends on the lighting requirements of your aquarium inhabitants. In addition, many factors influence light intensity, including water depth and clarity and the height/location of your chosen light fixture.
- >> Generally, fixtures with higher wattage bulbs will offer higher light intensity. 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, and 4 to 8 watts per gallon for reef aquariums.

first employed in the late 1960s for industrial use. Today, these high intensity discharge (HID) lights are favored among advanced reef hobbyists. Basically, metal halide lights pass an electric current through a small glass are tube contained within a main glass bulb to produce light. Unlike other HID systems, such as sodium or mercury vapor lights, the light spectrum and color rendition produced by metal halide lights is suited for aquarium use.

Since metal halides offer high intensity light in a small footprint, metal halides are ideal for large aquariums with inhabitants that require high lighting conditions. They are especially useful in very large aquariums deeper than 24 inches where other lighting systems may not be powerful enough to provide adequate illumination.

ount of light your aguari