Compact Fluorescent Lighting FAQs

Drs. Foster & Smith Educational Staff

Are compact fluorescent systems more difficult to operate and maintain than standard fluorescent light systems?

Compact fluorescent light systems are no more difficult to operate and maintain than standard fluorescent light systems. These self-contained lighting systems are easy to operate and since they are a type of fluorescent light system, it has all the benefits of fluorescent lighting. For example, low operating cost, lower heat emission and a wide selection of bulbs with color temperatures ideal for both freshwater and marine applications.

[Back to Top]

What are the benefits of compact fluorescent systems over standard fluorescent systems?

The most significant advantage over standard fluorescent light systems is their high light output. Instead of standard single tube bulbs, compact fluorescent systems incorporate dual or quad tube bulbs for greater light output from a single bulb. A single compact fluorescent light fixture easily does the job of two standard fluorescent fixtures. This space-saving feature makes compact fluorescent systems a great choice when upgrading from standard fluorescent systems.

[Back to Top]

[Back to Top]

What are the benefits of compact fluorescent light systems over other high light output systems?

Compact fluorescent fixtures are versatile and can be used in a variety of applications due to the large selection of bulbs. The space-saving design maximizes light output in areas with limited space. They are also less expensive to purchase, operate, and maintain compared to other high light output fixtures. Due to the shape of the bulbs, compact fluorescent light fixtures distribute light evenly across the length of the aquarium to reduce light loss. Compact fluorescent light fixtures are great for fish-only, freshwater-planted aquariums and reef aquariums less than 24 inches deep.

[Back to Top]

Will I be able to use compact fluorescent bulbs in a standard fluorescent light fixture?

No. 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 specifically designed for the respective bulb type. However, there are hybrid "screw-in" mini compact fluorescent bulbs designed to fit incandescent light fixtures.

[Back to Top]

What's the difference between a straight line and square pin compact fluorescent bulb?

Compact fluorescent bulbs are generally available in two distinct contact pin configurations. The four contact pins are in either a straight line or a square configuration. While there is no significant difference between the two bulb types, these bulbs are not interchangeable even if they are the same wattage. A straight pin compact fluorescent light fixture is unable to accept square pin bulbs and vice versa. Bulbs in the straight pin configuration are also referred to as "German-style" or "2G11" compact fluorescent bulbs and the square pin configurations are also known as "Japanese/Panasonic-style" or "10Q" compact fluorescent bulbs.

[Back to Top]

What does the color temperature of a bulb (Kelvin rating) mean?

The color temperature (Kelvin rating) gives us insight to the appearance of the light emitted by the bulb. Bulbs with lower K-ratings tend to produce light that appear "warm" such as reds, oranges, and yellows while bulbs with high K-ratings produce light that appear "cool." Sunlight at noon has a K-rating of 5500ºK and contains a blend of all the colors of the color spectrum. For this reason, 5500ºK bulbs are also referred to as full-spectrum bulbs and can be used as a reference point when selecting a bulb based on its K-rating.

[Back to Top]

What are 50/50 bulbs?

Manufacturers take advantage of the characteristic dual tube design of compact fluorescent bulbs and combine two different bulb types in a single high output bulb. These combination bulbs are extremely practical, saving both space and money and also minimizing heat output since a single bulb does the work of two bulbs. Popular among reef enthusiasts are the 50/50 bulbs, which are usually a combination bulb that is half 10000°K and half actinic bulb. Other combinations include bulbs with two different color temperatures (Kelvin rating) and actinic bulbs with two different wavelengths.

[Back to Top]

What are actinic bulbs and what are they used for?

Actinic bulbs emit light that produces photochemical reactions. Light emissions from these bulbs are predominantly from the blue end of the color spectrum and simulate light conditions necessary for proper coral growth. These bulbs are ideal for reef aquariums and are best when used with a timer to recreate dawn and dusk lighting conditions.

[Back to Top]

How often should compact fluorescent bulbs be replaced?

The intensity of a bulb diminishes over time and even though the bulb will still light, it may not be emitting the necessary spectrum or intensity to support proper growth. In many instances, the diminished light output can encourage nuisance algae growth so it is important to replace compact fluorescent bulbs every 14 to 24 months. For reef aquariums, it may be necessary to replace the bulbs more often depending on the species being kept.

[Back to Top]

Rather than upgrading my current compact fluorescent fixture, will I be able to use a higher wattage bulb to increase the light output?

No. Compact fluorescent light fixtures are not capable of lighting a bulb that exceeds its ballast wattage capacity. Therefore, be sure not to go over the ballast wattage limit of your fixture.

[Back to Top]