Understanding Reef Lighting

Bonus content from the November 2009 AFI magazine article "Guide to Reef Lighting."

An understanding of reef lighting can help you succeed in keeping your tank inhabitants healthy. When you are choosing lights for reef tanks, how light works, choosing the right lights, electricity and heat, and future maintenance are things that all reefkeepers need to know about.

How light works. In the reefkeeping hobby, color temperature is measured in degrees Kelvin. The lower the color temperature is on the Kelvin scale, the more red light is perceived by the human eye, while higher temperatures show us more blue light. Fortunately, intense lighting in the blue-green end of the spectrum makes the tank look good and helps keep the corals in the tank healthy.

The right light for your tank. Soft corals and large polyp stony corals do not need as much light as small polyp stony corals (SPS). For SPS corals to thrive, you will need to invest more money in lighting. As with the type of corals kept in a tank, the dimensions of the tank are important to take into consideration when deciding which lights to buy. Deeper tanks (2 or more feet deep) need very intense light that penetrates through more water. Four-foot-long tanks (or longer) are difficult to light because of the length of standard bulbs sold on the market.

Electricity and heat. Electricity and heat are other considerations for lighting the home reef tank. To save electricity and generate less heat, use the most efficient and lowest wattage system that will still provide the right lighting for the tank. A lot of light is lost in a reef tank because lamps light in 360 degrees — at least half of the light generated by the bulb is directed away from the tank. To make use of this light, get reflectors to redirect light heading away from the tank back toward it.

Maintenance. Once you've set up the lights, don't think you can forget about them. Just as any other piece of reef tank equipment, lights need regular maintenance. Light bulbs lose their intensity over time, and they also lose intensity due to accumulated salt spray. Most likely, the diminished intensity of light bulbs over time is not easy to notice. Although your eye may not be able to tell the difference from day to day, coral health will be affected. Keep track of when you install lamps, and replace half the lights whenever coral growth slows down. If the corals begin to grow again, that suggests that the lights had diminished and needed replacing. Several months later, you can replace the other half of the lights. There are also other ways of telling how much your lights have diminished, such as using a light meter designed for measuring light in reef tanks.

Lighting in a reef tank is important for the health of corals. Before investing in expensive and delicate corals, learn all about the science of light and the different kinds of lights available on the market. When you understand how light works, you can choose the right lighting system for your tank and be better prepared to care for corals.

Want to read the full story? Pick up the November 2009 issue of Aquarium Fish International, or subscribe to get 12 months of articles just like this.