

Kelvin Rating: What is it?

Drs. Foster & Smith Educational Staff



The Kelvin scale is used to describe the color of a light source when compared to the color a theoretical "blackbody" radiates when heated at a particular temperature. Think of a piece of steel that changes color as it is heated, then designating the temperature value to the color of the light being given off.

At 0° Kelvin (equivalent to -273° Celsius), the theoretical blackbody emits no light. As the blackbody warms, it begins emitting red light. As the blackbody increases in temperature, light wavelengths become more yellow, then green, blue, and finally violet.

For example, sunlight at noon, with a color temperature of 5500°K, is typically referred to as full spectrum because it contains a blend of all colors throughout the spectrum. Bulbs with a lower K rating (and lower color temperature) emit a warmer, reddish light, while bulbs with a higher K rating (and higher color temperature) give off a cooler, crisper blue light.

To best duplicate natural lighting conditions under which your aquarium inhabitants will thrive, pay close attention to each light bulb's Kelvin (K) rating, which measures the bulb's light spectrum or "color temperature" output. Select lighting with the K rating that will give your inhabitants the light they need to thrive and grow.

The Right K Rating for Your Aquarium

The following guidelines can help you select [lighting](#) with a K rating that best duplicates your inhabitants' natural conditions:

- **Fish Only Aquarium** - Choose a bulb with a spectrum based on your personal

preference. A lamp with a low K rating emits redder light and exhibits more vivid colors than a lamp with a higher K rating (emitting bluer light). Normal-output fluorescent bulbs are quite popular.

- **Freshwater Planted Aquarium** - [Fluorescent](#) and [compact fluorescent](#) bulbs are frequently used to provide the full spectrum range of light (5500°K to 7500°K), most plants require. As a general rule, provide between 2 and 5 watts per gallon.
- **Saltwater Reef Aquarium** - Many corals and invertebrates have naturally adapted to bluer light. Therefore, most reef lighting systems include bulbs with a high Kelvin rating. 10000°K to 20000°K are frequently used.