

## Shedding Light on Luminescence: Clarifying Definitions

Are you confused about some of the techno-jargon related to black light effects? Hopefully, this page will help break it down in a way that's easy to understand.

**Black Light:** Black light is similar to visible light, except it's just beyond what the human eye can see. The wavelengths are shorter, and exists just beyond visible violet light, hence the name "ultraviolet." (See tutorial Science of UV.)

**Fluorescence:** A phenomenon whereby a substance absorbs light at a particular wavelength, then releases a longer wavelength light. This can happen anywhere in the light spectrum, but in the world of black light effects, this happens when a material absorbs long-wave ultraviolet light (a.k.a. black light), then releases visible light in return.

**Lamp:** The "technical" term lighting designers use to refer to a light *bulb*. A *lamp* is housed in a *fixture*.

**Luminescence:** A general term for any kind of light produced by chemical or biochemical changes, electrical energy, subatomic motions, reactions in crystals, or stimulation of an atomic system. Examples of luminescence include fluorescence, phosphorescence, and bioluminescence (think fire flies, or those strange, glowing deep-sea creatures you see on nature shows).

**Phosphor:** A substance that exhibits the phenomenon of phosphorescence. Our Wildfire **Glow Green** Luminescent Paint has phosphors that cause it to glow in the dark.

**Phosphorescence:** Related to fluorescence, but "slower." Phosphorescent materials (phosphors) exhibit a sustained glowing after exposure to light or energized particles such as electrons. The mechanics are the same as in fluorescence, but it happens over time. Therefore, they continue to glow after exposure to light. Phosphorescent materials glow in the dark.

**Photoluminescence:** A specific kind of luminescence caused by excited electrons in an atom. Fluorescence and phosphorescence are examples of photoluminescence.

**Ultraviolet Light:** A broad term for a range of light just beyond visible violet light. Wavelengths are shorter and of higher energy than visible light. There are three main categories of ultraviolet light: short-wave, medium-wave, and long-wave (a.k.a. black light). (See tutorial Science of UV.)