

HOW DOES FIBER OPTIC LIGHTING COMPARE WITH COLD CATHODE?

There are certain applications that are ideal for fiber optic lighting: wet locations such as swimming pools, spas, or applications that require minimal light levels and minimal mounting space. For applications that require high brightness, indirect or exposed lighting, cold cathode is the obvious choice.

Fiber optic lighting cable requires a remotely installed fan-cooled illuminator. Illuminators produce color by shining a halogen or metal halide lamp through a theatrical color wheel. Colors produced by fiber optic systems cannot match the rich, saturated hues that are the hallmark of cold cathode lighting. Illuminator lamp life (depending upon the lamp type) can be anywhere between 2,000 and 6,000 hours, with some inevitable shifting of color for metal halide sources. Additionally, fiber optic cables suffer from visible reductions of light the further the cable extends from the illuminator. Dimming can be an issue when illuminators are equipped with metal halide lamps.

LIGHT SOURCE COMPARISON CHART

Type	Lamp Life	Lumens per Foot (or meter)	UL Listed for Residential and Commercial Lighting	Power Source	Dimming
Cold Cathode	50,000 hours	Up to 709 lumens per foot (2340 lumens per meter)	Yes	Ballast and transformer	Standard
Neon	25,000 hours	Up to 200 lumens per foot (660 per meter)	No	Transformer only	Custom
Fluorescent	10,000-20,000 hours with 50% failure before the end of rated life	Up to 1300 lumens per foot (4290 per meter)	Yes	Ballast	Only with dimming ballasts
Fiber Optic	2,000-6,000 hours for the bulb in the illuminator	Approximately 100 lumens per foot (330 per meter)*	Yes	Fan-cooled illuminator	Yes, but limited with metal halide light sources

*Varies with length and type of cable and light source.

A note about LED (light-emitting diode) lighting: While still an emerging technology at this time, the use of LEDs for indirect lighting has produced varying results. Light output is low. The fixtures are very expensive, and dimming control can be problematic if they are intended to be used in conjunction with standard commercial dimming panels. Luminous efficiencies tend to be low (except for red LEDs) and the light produced from the LEDs is largely directional and does not produce the even distribution of a tubular fluorescent lamp. Finally, LED lighting is still a point source, not a true continuous linear lighting source like cold cathode.