

General Information

FLATLITE[®] is an electroluminescent lamp material that emits light when connected to an Califormeon Supply. Specially processed phosphor crystals are sandwiched between a very thin aluminum electrode and a clear top electrode. When these two panels are connected to an AC power source the resulting field causes the phosphor to glow. Unlike traditional sources of illumination, FLATLITE[®] is not a resistive light source, but rather functions more as a capacitor. To change the intensity of FLATLITE[®], the voltage and frequency of the power supply output is varied. A distinctive, thin scribe line down the center of the rear electrode is an Califormeon lighting proprietary design, allowing for extremely long (up to 700 feet) continuous strips of FLATLITE[®] lamp. There is no appreciable change in the temperature of the lamp when operating.

Physical Characteristics

FLATLITE[®] is manufactured in rolls 30" wide and 1200' long. It is fabricated in two colors: White and Green/Blue. The lamp is encapsulated in a protective laminate that creates a flexible panel that is 0.028" thick, and is nominally 1/4" wider than the lamp material itself. Standard lamp widths are 1/4", 1/2", 1", 2", 3", 6", 9", 12", 15", 18", 21", 24", and 30". Standard coil lengths of continuous material for strips 6" wide or less are 100' and 300'. Standard coil lengths for material 9" wide or greater is 50'.

Electrical Characteristics

Electroluminescent lamps must be illuminated with alternating current. Our Power Supplies have been specifically developed to power FLATLITE[®] lamps at the most efficient ratings, and MUST be used for proper operation of the product. At the nominal recommended operating parameters for high brightness applications, the lamp is driven with 280VAC at 650Hz. The current draw at this brightness is 0.0003 Amps per square inch of illuminated surface. For lower required brightness applications, the voltage and frequency may be reduced, to the point where 120VAC at 60Hz is all that is necessary to light the product for night light installations.

Light Emitting Characteristics

The output of the FLATLITE[®] lamp is measured at the surface of the lamp, in units known as foot-lamberts. The foot-lambert is a measure of luminance. A foot-lambert is equal to the reflected brilliance of one foot-candle on a ground glass surface. At full brightness, the unfiltered green-blue FLATLITE[®] lamp has an average luminance of 24 foot-lamberts, the unfiltered white FLATLITE[®] lamp has an average luminance of 20 foot-lamberts. Unlike traditional lamps; FLATLITE[®] does not emit light as a point source. The brightness of a point source lamp decreases at a rate equal to the inverse of the square of the distance from the source. That is: $1/\text{Distance}^2$, but electroluminescent lamps are a field source, and therefore, the decrease in perceived brightness over distance is considerably less. This is due to the fact that the lamp is a true lambertian emitter; in other words: a field of light. Traditional lamps unsuccessfully attempt to compensate for the point source inefficiency by utilizing diffusion lenses. For this reason, FLATLITE[®] outperforms a lamp of greater point brilliance in practical use. The nature of the lamp as a lambertian emitter also creates three other important performance features: there is no impact on night vision after looking directly at the lamp; the eye is able to discern changes in width when approaching the lamp; and the lamp is visible from a greater distance in fog or smoke than any other type of light source.

Environment Considerations

FLATLITE[®] with an all-purpose laminate is suitable for outdoor, damp or humid installations with an ambient temperature between -20°F and 140°F. Performance and life of the lamp may begin to deteriorate outside of these parameters. See Installation Guidelines for more details.

Useful Life Assessment

The useful life of a FLATLITE[®] lamp varies by application, and is contingent on brightness, duty cycle and ambient temperature. The closer to the maximum brightness FLATLITE[®] is operated at, and the higher the ambient temperature, the shorter the useful life of the lamp. Unlike other light sources, FLATLITE[®] never burns out completely; the lamp slowly loses brightness over time. It is recommended that for most common applications that the lamp be replaced every 5,000 - 10,000 hours to enjoy the full utility of the product. Critical high intensity signage applications may require replacement after 3,000 hours; however, in aisle lighting applications, the lamp is generally effective well in excess of 20,000 hours.

"It's not Neon...it's better!"

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