

DESIGN AND APPLICATION GUIDELINES

Installation Guidelines FLATLITE® should always be installed in a manner that protects the lamp from damage. In safety critical situations, Underwriter's Laboratories requires a minimum 1/16" flame resistant polycarbonate. For other applications we recommend utilizing a polycarbonate shield of no less than 40mil thickness. For applications in extremely harsh or wet locations, or that require the immersion of the lamp in a liquid, the lamp must be protected by a waterproof enclosure or extrusion. When installed on a metal surface, and powered from an AC source, the installation surface must be earth grounded. In some sensitive applications, installing the lamp on a thin acoustic foam may be necessary to ensure silent operation.

Color Options FLATLITE® is produced in two stock colors, green/blue and white. The white lamp has a pink hue when not illuminated, the green/blue lamp is off-white when not illuminated. Florescent red, orange, yellow, green, blue and magenta overlays are available from the factory. Any Rosco™ or Lee™ type polycarbonate color filters can be installed over the lamp, in lenses or with an adhesive, to create nearly any color desired.

Encapsulation FLATLITE® lamps are encapsulated in laminate. This process provides for electrical insulation and protection from moisture. The standard all-purpose laminate is appropriate for use in most applications, including damp or humid locations. The finished width of the lamp, including laminate is 1/4' more than the nominal size. Anytime the lamp is cut to size or terminated, the raw edge or terminal must be sealed with an Calforneon recommended product.

Power Supplies FLATLITE® is designed to be operated exclusively by Calneon proprietary power supplies and inverters. These units are sized by lamp area. The largest power supply available can light 12,500 in² of FLATLITE®. This does not limit the size of applications, just the size of the individual lamps. Additional area can be lit with additional power supplies. Multiple lamp widths and colors can be supplied by a single power supply. CalneonTechnologies has a range of standard AC power supplies in addition to Low Voltage DC Power Supplies for vehicles, aircraft and other applications:

<u>Input Voltage</u>	<u>Lamp Capacity</u>
120/240 VAC	100 - 12,500 in ² :
9 VDC	4.5- 36 in ²
12 VDC	16 - 4800 in ²
24 - 28 VDC	16 - 12,500 in ²

Lamp connection is typically via Molex™ Mini-Fit™ connectors and 18 ga. stranded copper wire. Input power connection is via universal grounded AC appliance inlet (for AC Power supplies), Coaxial inlet for (12 & 24VDC Systems) and 9V Battery Snap Connectors (for 9VDC Supplies). 28 VDC and 120/240 VAC system controllers with emergency battery back up are also available for 120 - 3,000 in² lamps.

Ambient Light Considerations To determine if FLATLITE® is appropriate for your installation, measure the foot candle level at the installation surface. Generally, the lamp will be effective when operated at full brightness (280 VAC, 650 Hz) when installed on light surfaces in areas that have an ambient light level of 30 foot-candles or less. As the reflected brilliance of the surrounding surfaces decreases, a lower operating brilliance of the lamp will be required for equivalent effectiveness. In total darkness, the lamp is generally effective for most decorative applications at 8 foot lamberts or less. The lower the operating brightness, the longer the useful life of the product.

Creating Shapes with FLATLITE® The lamp can be cut and fabricated into nearly any shape, including creating open spaces in the lamp surface. After the lamp is cut, it must be re-laminated with the proper encapsulation material, When creating shapes, the lamp area on either side of the scribe line must be balanced to achieve even light output. Symmetric shapes are the most efficient use of the lamp. Asymmetric designs of large lamps may result in uneven brilliance; smaller lamps are more forgiving, depending upon the shape. The lamp may also be folded, curved or bent on the axis perpendicular to the scribe line.

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

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