TECHNICAL GUIDE

EmeryAllen proudly stands behind our two (2) year commercial and five (5) year residential warranty. As documented in our Warranty, EmeryAllen is not responsible for premature failure due to misuse. Bulbs that do not comply with the text and photos within the Technical Guide will not be covered under the warranty. EmeryAllen reserves the right to request bulbs for inspection and refuse credit or replacement due to misuse.

Functioning LEDs

EmeryAllen only uses the highest quality components in our bulbs. Epistar LEDs are the highest quality SMD LEDs on the market. They provide the highest lumens per watt, color consistency and reliability with 70% output at 50,000 hours.

Our 120V dimmable bulbs are compatible with all incandescent and LED compatible dimmers as well as a majority of ceiling fan remotes and receivers.

Our 12V bulbs are dimmable with all MLV and ELV dimmers. 12V bulbs should only be used with magnetic transformers or LED compatible no or low load electronic transformers.*

[*See no-load transformer information on reverse]

Overheating

LEDs that have been subjected to overheating will develop light brown or gray spots at the center of each chip.

While all EmeryAllen bulbs are rated for use with enclosed fixtures, the enclosure should not be smaller than:

Wattage	Shade Size (Inches)	Volume (Cubic Inches)
1.5W	1.5 x 1.5 x 1.5	3
2.5W	2.5 x 2.5 x 2.5	16
3.0W	3.0 x 3.0 x 3.0	27
4.5W	4.5 x 4.5 x 4.5	91
5.0W, 6.0W	5.0 x 5.0 x 5.0	125
8.5W, 9.5W	9.0 x 9.0 x 9.0	729

Do not exceed the lumens of the original halogen bulb recommended with the fixture. For example, under-cabinet lights usually come with a 20W halogen bulb. Use LED lumen equivalent.

Disclaimer - If you plan to use bulbs over 5.0W in an enclosure, please contact us at info@emeryallen.com for guidance.

Electrical Overstress

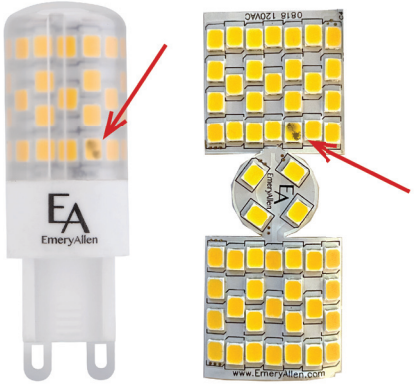
All LED bulbs are susceptible to failure due to Electrical Overstress (EOS). EOS is the exposure of voltage or current to LED bulbs beyond what they have been designed to operate.

Typical EOS occurs due to:

- Power surge
- Voltage spikes from the main power source
- Lightning strikes
- "HOT LAMPING" or plugging in a LED bulb into an energized light fixture.

The most common source of EOS is "HOT LAMPING" which can lead to brief but powerful current spike. Failure to the bulb that has been subjected to EOS isn't always immediate but is often imminent. **LED bulbs must only be inserted into a light fixture that is turned off.**

Indication of Electrical Overstress



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No-Load Transformer / 12V Bulbs

EmeryAllen AC LED drivers are no-load electronic transformers that can operate LEDs as well as low-voltage halogen and incandescent bulbs.

LEDs will not operate properly with halogen transformers due to the transformers inability to detect the low wattage of LED bulbs. In many cases a halogen transformer will cause damage to LED bulbs.

EmeryAllen's AC LED drivers are designed to be used with low wattage LED bulbs.

Note: Many digital multi-meters are not capable of reading the high frequency output of electronic transformers. High-end multi-meters (i.e. Fluke 289) or analog multi-meters are recommended.

Hi-Lo-Off Switches

Hi/Low Switches that are typically found on under-cabinet lights, microwaves, exhaust fans, ovens and portable lamps will not function properly with any LED light bulb.

Diodes that are used in these switches reduce the voltage by cutting the electrical sine wave in half. These types of switches must remain on the high setting.

Motion Sensors, Photo Controls & Timers

Motion sensors, photo controls (photocells) and timers are electronic switching devices. These electronic switching devices must be designed to be used with LED loads. The packaging on these devices will clearly state if they are compatible with LEDs.

Night Light/Timer Switches

Switches that incorporate a "night light" feature or timer feature may cause the LED bulbs to still glow once they are turned off.

Some light switches run a small amount of current through the bulbs even while in the "off" position in order to power small devices such as a timer, motion sensor or night light.