Prop and Scenery Lighting, LLC
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Application Note
Silicone Bi-Pin Lamp Ember Orange Fire Effects Light –
12 volt DC with Cable Socket
P/N: EEL1-SBL2-EO

The SBL2-EO (Silicone Bi-Pin Lamp, Ember Orange) fire effects simulation light is a polychromatic LED light source. The LED bulb uses a combination of 12 yellow and 12 red LEDs. The LEDs produce a dual spectrum light at 1,000 Kelvin CCT (Correlated Color Temperature) for a vivid ember orange glowing fire appearance. Ember orange 1,000 Kelvin is at the lower end of the flame spectrum and is very similar to the light of glowing coals or wood embers.

Being a polychromatic orange light source, the visual appearance of the light is less sterile looking than that of a single wavelength monochromatic orange LED. The light emitted from fire combustion has a broad spectrum, therefore, using polychromatic light to replicate real flames with LEDs achieves the desired visual likeness. Additionally, as a dual spectrum flame light source composed of yellow and red LEDs, the light can be further filtered. Filtering can be accomplished with standard theatrical filter gels to shift the color either to the yellow side or red side of the spectrum for the desired effect needed for a lighting project.

The SBL2-EO Silicone Bi-Pin Lamp Ember Orange is a G4 style bi-pin lamp for 12 volt DC use. The power is a nominal 1 watt with a light output of 19 lumens from a total of 24 LEDs. The LED flame bulb is supplied with a mating cable socket (P/N: EEL1) that uses a DC barrel connector. The DC barrel connector is the 2.1mm x 5.5mm size for power input. The LED bulb uses simple resistor current limiting which allows for intensity control with either PWM pulse width modulation dimming or variable voltage in the 10-12 volt DC nominal range. The ember orange bulb uses refractive light mixing from its optically clear molded silicone body to blend the yellow and red LEDs for a vivid orange appearance.

The ember orange LED bulb is best used for cast light versus direct viewing of the bulb. A white diffuse reflector can be used for added color mixing. A white reflector also is used to direct a soft fill light for faux fire simulation. In certain applications, such as for a coal basket prop with the appearance of glowing embers or coals, a light spreading medium can be used. A medium such as rubber glass is a useful material for glowing fire props. Rubber glass is a special effects, clear, silicone material for props that in small pieces readily spreads and diffuses the light for a glowing appearance. For prop building a typical one pound of rubber glass per ember orange light embedded in the material is a good starting point. The Ember Orange LED flame bulb is compatible with the J2 LED lighting FEC1 flicker effects control or “flicker generator” for various specialty lighting dynamic flame flicker effects. Multiple flicker controls and ember orange LED bulbs can be combined for a very dynamic scenic display.

Applications

- Themed Entertainment Projects
- Special effects faux flame props
- Theatrical scenery lighting
- Product display props
- Faux fireplace building
- Coal basket props
- Pumpkin Jack O Lantern Props