



# L.E.D. Fact Sheet

**L.E.D.** – Stands for Light Emitting Diode

**Fact:** The first practical visible-spectrum LED was developed in 1962 by Nick Holonyak Jr., while working at G.E. Holonyak is considered to be the “father” of L.E.D. development.

**L.E.D.** fixtures operate on a wider scale of voltage input (10v – 15v). Range varies between manufacturers. The voltage input range is critical to the life expectancy of an L.E.D. unit, including the actual driver.

## FXL Brand Comparison Output Chart

<u># of diodes behind lens</u>	<u>Wattage Equivalent</u> (Halogen)	<u>Actual Usage in Watts</u>
1LED (1 diode)	10-15w halogen	2.4 actual watts
3LED (3 diode)	20-25w halogen	4.5 actual watts
6LED (6 diode)	35-40w halogen	15.2 actual watts
9LED (9 diode)	50-60w halogen	13.5 actual watts

**L.E.D. Color Shifting** – Predominant color fade or shift to another spectrum over time and usage, due to constant light emission and temperature. This is typically seen when L.E.D.s are coated with Phosphor substance to enhance color rendering output. Use of non-coated L.E.D. or true color lenses may lessen this effect.

**Key Note:** Solid state devices such as LED drivers are subject to very limited wear and tear if operated at low currents and at low temperatures. Heat must be dissipated from the L.E.D. driver source for longevity.

**Serviceability in the field** – As new L.E.D. units are released into the market it will be critical that they be designed for serviceability. Being able to upgrade units and replace components is essential. Disposable units are not ecologically feasible.

**Efficiency:** L.E.D.s emit more light per watt than incandescent bulbs. This is a measure of lumens per watt. Their efficiency is not affected by shape and size, unlike Fluorescent light bulbs, filaments or tubes.

**Lifetime:** L.E.D.s have a relatively long useful life, with estimates up to 60,000 hours of useful life, though time to complete failure may be longer.