

# LED Bulbs

Fluorescent lighting has stepped up in recent years and it is more energy efficient than tungsten bulbs with a life span about 10 times longer. The drawback is that each fluorescent light bulb contains some amount of mercury (even the “eco-friendly” light bulbs). Recently, we have seen an increase in LED lighting options from light bulbs to lighting strips. LED technology lasts about 30 times longer than incandescent light bulbs (with a lifespan of around 10 years), and uses less energy than fluorescent bulbs. The following chart below from Wikipedia gives a good general comparison:

LIGHT BULB COMPARISON			
	Incandescent	Fluorescent	LED
Electrical Power (W)	60	14	10
Light output (lm)	860	800	800
Luminous Efficacy (lm/W)	14.3	57.14	80
Lifespan (h)	1k	8-10k	80-100k

Where light output is in lumens, and luminous efficacy is lumens/ watt (how efficiently the light bulb can emit light in the visible spectrum).

As energy efficient and long lasting as LED lighting is compared to other technologies, it is no wonder that LEDs are poised to fill the gap left by incandescent lighting technology. Currently, there are a number of different LED bulb configurations (with a couple deconstructed types pictured), but all of them use a white, reflective coating on the LED circuit boards to help disperse light more effectively. On flexible LED lighting strips, there is also a reflective white coating that aids in dispersing light.

**Taiyo** has recognized that there is a call for white solder masks for LED applications and has formulated photoimageable, thermal cure, and UV cure white solder masks. Our **PSR-4000 LEW product line** has photoimageable properties for boards with tighter registration, and the products offer various properties such as high reflectivity, various shades of white, and sulfur-free, or flexible formulations. The **thermal cure S-200 series** also offer rigid and flexible formulations with the highest reflectivity in our product line. The **UV curable type** is a 2-part (one part for build and the other is the reflective topcoat) designed for the fastest processing times. Another product on the horizon is the **spray coating formulation for LED applications**. These are just some of the offers from Taiyo for LED applications, and just another way we are striving to be *Your Ultimate Solution*.