Shedding some light on the purchase of a lightbulb

By Adam Collett

We all know the joke about how many people it takes to change a light bulb but how much does it cost to keep it lit? The answer may surprise you and change the way you illuminate your house and manage your energy costs.

There are three main types of light bulb that I am going to review. I have taken the purchase costs and projected operating hours from one website (www.lightbulbs-direct.com). Prices for these items may vary at different shops and suppliers.

1) Incandescent bulbs or “Edison bulbs”. These are filaments that glow in an inert atmosphere held in a glass envelope (or bulb – hence the term). They are only about 5% efficient and dissipate most of their energy as heat. This is not generally a good idea in a fitting that is meant to provide a maximum amount of light. Bulb life is approximately 1000 operating hours.

(Cost = £1.38 each, 60 watts power consumption).

2) Fluorescent compact fittings (More commonly known as “Energy Saving Bulbs). These are a miniature version of a fitting that we generally associate with a strip light. They are much more efficient than an incandescent bulb and have a projected operation life of 10000 hours.

(Cost = £ 7-98 each, 12 watts power consumption)

3) LED (Light Emitting Diode) bulbs – newest type on the market. These are fittings that incorporate many LED’s into an array that is similar in shape and size to a conventional incandescent fitting. These too are very energy efficient and have a projected lifespan of 100000 operating hours before failure.

(Cost = £22.79 each, 7 watts power consumption)

For comparison purposes, calculations will be based upon a projected operating time of five hours a day using a flat kWh cost of £0.14. All bulbs are rated at approximately the equivalent of 60 watts illumination.

Bulb Type	Y 1 (Energy Cost)	Y 2 (Energy Cost)	Y 3 (Energy Cost)	Y 4 (Energy Cost)	Y 5 (Energy Cost)	Bulb Costs	5 Year Costs	10 Yea Costs
Incandescent (60 watts)	£15.33	£15.33	£15.33	£15.33	£15.33	£12.42	£89.07	£178.1
Fluorescent (12 Watts)	£3.07	£3.07	£3.07	£3.07	£3.07	£7.98	£23.33	£46.6
LED (7 Watts)	£1.79	£1.79	£1.79	£1.79	£1.79	£22.79	£31.74	£40.6

Incandescent bulbs would have to be changed 9 times over 5 years or 18 times over ten years, the fluorescent bulb once in 5 years and twice over a 10 year period and the LED unit would not require replacement. The justification for an LED bulb will have to be a long term investment. These do however have a projected life of some 11 years.