

LED LIGHTING FACT SHEET – Updated Oct 2017

Bulb designs

There are many LED bulb designs available these days. They use less than 20% of the energy of a conventional incandescent or halogen bulb. Recent developments mean there are now very good like-for-like replacements for most domestic lighting situations. Here's some examples:



GU10 Halogen replacement



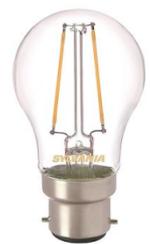
Classic bulb shape



Candle bulb



Spotlight



LED version of filament bulb

Lifespan

LEDs last much longer than other bulbs. **25,000 hours** is realistic – which is 25 years if you have them on 1000 hours a year (2.75 hours/day). In comparison, a tungsten bulb lasts **1000 hours**, a halogen bulb **2000 hours** (if you're lucky), and a compact fluorescent **4000-8000 hours**. So you can expect to replace your existing bulb many times before an LED bulb would pack in.

How much do they cost?

Prices have dropped dramatically in the past few years, and performance has improved. Good quality LED bulbs of various kinds are now available for £3-4 upwards. This is still a bit more than conventional bulbs, compact fluorescents or halogens (if you can still find them – they are being phased out), but when you factor in the lifespan and the energy savings they make a lot of sense economically.

How much will I save?

Lots! These are typical figures assuming a light is being used 1000 hours/yr (2.75 hrs/day), and electricity costs 15p/kWh (i.e. 15p/unit). They take account of the cost of the bulb and the power used. And of course LEDs will cut your carbon footprint at the same time.

Switching from/to	Up front cost of LED	Payback time	Annual savings	Savings over 25 years	CO ₂ saved over 25 years
40W traditional tungsten bulb to a 6W LED bulb	£3.50	7 months	£6.46	£162	430 kg
50W halogen GU10 bulb to a 6.5W LED equivalent	£3	6 months	£7.05	£158	439 kg

These figures don't allow for energy price rises. If you factor in a 5% annual increase the savings over 25 years would be £300+ per bulb, or £3000 per home if you replaced 10. Amazing!

Which bulbs should I change first?

The ones which you use the most – such as in your kitchen and lounge. Halogen lights are particularly inefficient, since you need so many of them. If you have 10 of them in your house – you could save £70 a year in electricity by switching to LEDs.

What about low voltage halogen lights?

If you have low voltage halogen lights using MR11 or MR16 bulbs these are just as bad energy-wise. You can get LED replacements, but you may encounter problems as your transformer is designed to work at a much higher wattage. You can normally solve this by leaving one halogen bulb in place and replacing the rest with LEDs. Or this may be a good time to ditch the transformer and install regular 230v fittings that can take normal GU10 replacement LED bulbs, which are cheaper. Note there are special rules governing bathroom fittings, so check with an electrician.

Cool versus warm light

You can choose what 'colour temperature' bulb to get. It's measured in degrees Kelvin (K). 2700K is typical for a 'warm' light (usually preferred for a lounge or dining room); 4000K is typical for 'cool' light (best for kitchens and bathrooms).

Can I use a dimmer?

Yes - you can buy LED lights which are designed to be work with dimmers. They are a bit more expensive, and you may need to change your dimmer switch as traditional dimmers are designed to work at a much higher wattage. Try it and see. An LED dimmer switch costs £15-20.

Does it make sense to switch from compact fluorescents to LED bulbs?

LEDs are a much better bet than compact fluorescents these. They:

- Come on much quicker (almost immediately)
- Are up to a third more efficient
- Are much more compact, so they look better in many fittings
- Last up to 4 times as long
- Are easier to recycle as they do not contain mercury and other toxic elements.
- Are cheaper over their lifetime (saving about 30% including purchase costs)

It may not make financial sense to replace compact fluorescent bulbs that are still working. But when you they next need replacing, switch to LEDs.

How they work

LEDs are Light Emitting Diodes that work by a process called electroluminescence, passing an electrical charge across a semiconductor to generate light. They have been around for 50 years but the technology has advanced enormously in the last decade. They have no filament, like a conventional bulb, so last much longer and do not get so hot. They run on direct current (DC) so most have built in transformers to convert from alternating current (AC).

Where to buy them

LED bulbs are available pretty much everywhere that light bulbs are sold these days – including at Tesco, B&Q and Bunces. You'll find it's cheaper to buy multi-packs. There are also dozens of websites selling LED bulbs. Some of the better known are:

www.ledhut.co.uk/ www.nigelsecostore.com www.simplyled.co.uk/

Note that Steyning 10:10 takes no responsibility for any purchasing choices you make!



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