

# Lighting

## The low-energy bulb revolution

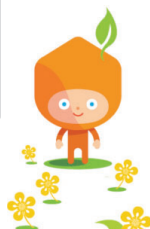
Energy-saving light bulbs use up to 90% less electricity than the old bulbs but produce the same amount of light. And they last over 10 times longer.

Since 2011, all light bulbs in the UK have been required to meet new energy efficiency standards. Because of the phasing out of inefficient old-style bulbs and replacing them with energy efficient alternatives, a typical UK home now uses nearly a third less electricity to light their home than it did in the late 1990s.

Since 2016 only light bulbs with an energy rating of B or better have been available for purchase. A typical old-style (incandescent) bulb would have an energy rating of E.

Energy saving bulbs come in a range of shapes, sizes and brightness. There are energy saving bulbs for every type of fitting and even dimmable low-energy bulbs have been developed. What's more, you can now choose to have a variety of colours of light to suit your taste.

**The newest low-energy light bulbs have a warmer light that is very similar to old-style bulbs**



How do they compare?			
	Halogens	CFLs	LEDs
Rough cost per bulb	n/a	£6	£6
Typical energy saved*	20-30%	75%	85%
Average lifetime (hours)	2,000	10,000	20,000
Time to reach full brightness	Instant	30-120 seconds	Instant
Typical running cost per year	£9.86	£3.08	£1.85

\* compared to equivalent incandescent bulb



Photos: bulbs, Energy Saving Trust, light fixture, Paul Groom

There have been three generations of low-energy light bulbs: halogen bulbs, compact fluorescent light bulbs (CFLs) and light emitting diodes (LEDs). Each produce more light for every unit of electricity than their predecessor and each generation lasts for longer too.

### Halogen bulbs

These provided a very similar light as incandescent bulbs. Halogens are more efficient than old-style incandescent bulbs, however rooms lit by halogens usually have lots of fittings (for example kitchens) which increases the overall cost of lighting. Halogens are now considered a high-energy using bulb and their sale has been phased out since 2016.



### CFLs

Compact fluorescent light bulbs are now very widespread and often what people think of as a low energy bulb. They often look like tubes shaped into a helix or a series of loops, though it is now possible to get CFLs in a range of traditional bulb shapes. Early examples were criticised for poor light quality and for the length of time it took to get up to full brightness. Nowadays CFLs are much improved but have increasingly become a second best option to LEDs.

See all our energy advice leaflets at [www.cse.org.uk/advice-leaflets](http://www.cse.org.uk/advice-leaflets)

## LEDs

Light emitting diodes, usually referred to as LEDs, are the most efficient bulbs available. They've been around for years as little lights on TVs and as bicycle lights. They achieve full brightness instantly, can be dimmed and come in a wide range of colours, including hues close to traditional incandescent bulbs. LEDs are more expensive to buy but their extremely low energy consumption means that they are likely to save between £45 and £75 over an average lifespan (10 years). In some fittings, they use a tenth of the electricity of the equivalent halogen bulbs. LEDs are now available in almost all fittings and styles.



## Watts and lumens

Light bulbs have traditionally been rated in watts. The wattage tells you how much electricity a light bulb will use and enables you to work out how much it will cost to run. Watts are not an accurate measurement of the amount of light given off – this is actually measured in lumens. These days, when you buy a light bulb you will see a figure for lumens as well as the wattage rating on the packaging. The table shows the wattage you'd need to produce the same brightness with different types of bulbs. You can use it as a guide to converting your old bulbs to more energy efficient equivalents.



Light bulb packaging now clearly states the bulb's strength in lumens as well as watts

## Lumens v Watts

Lumens	Old-style bulb	Halogen bulb	CFL	LED
1300	100W	75W	25W	13W
700	60W	45W	15W	8W
400	40W	30W	10W	5W
200	25W	19W	6W	4W

## Turn them off!

Finally, if you're worried about your electricity bill, one of the best things you can do is keep an eye on your household's use of lighting. Are lights switched off when they're not needed or are they being left on in unoccupied rooms? What about passageways and landings? Do you really need those lights on all the time? It is particularly important to use low-energy bulbs in places where you really do need to have the light on for long periods.



Photo: LED light bulb, Mcapdell; low energy lights, Energy Saving Trust; light bulb packaging, Tim Weissenberg



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Charity: 298740  
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The Centre for Sustainable Energy is a national charity that helps people change the way they think and act on energy.

Our Home Energy Team offers free advice on domestic energy use to people in Bristol, Somerset, Wiltshire, South Gloucestershire and Dorset.



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