Quick guide to buying lightbulbs

Shopping for lightbulbs can be a nightmare. So many numbers and price points to choose from.
So here is a basic guide to what the main specifications mean and some simple tips for successful shopping.

What the words and numbers mean

Cool or warm (CCT - 'Correlated Colour Temperature')

This is measured in 'kelvin' - the colour emitted by an ideal, opaque body at a specific temperature. The higher the number, the 'cooler' the light looks.

Some manufacturers simplify their packaging to say 'antique' (1800K to 2200K), 'warm' (2700K - 3000K), 'bright white' or 'cool' (4000K - 5000K) and 'ice white' or 'daylight' (6500K).

As a general rule,
- For a domestic feel, choose 2700K (warm white)
  Lounges/dining/ communal areas: 3000K - 4000K
- Clinical/medical treatment areas, food preparation: 5000K

Brightness - Lumens and lux

Lumens is a measure of the amount of light coming out of the light source. Lux is a measure of how much light reaches the surface, or your eye. So even a light with low lumen output can look bright when it's close to you. Cooler colour temperatures tend to look brighter than warmer ones because of the way your eye and brain process light.

As a general rule…

- Night lights: 1-10 lumens
- Bedside/table lamps for ambient/mood: 100–250 lumens
- Side lamps for more general use: 300 - 500 lumens
- General ceiling lamps: 800–1,500 lumens
- Task lighting (reading/crafts): 1,000+ lumens

Colour Rendering Index (CRI)

CRI is a basic measure of the range of wavelengths generated by a light source, which defines how rich and natural colours will appear. It's measured on a scale of 0 to 100, with 100 representing standard daylight.

Some manufacturers use terms like 'eye comfort', 'daylight spectrum' and 'sunlike spectrum'.

Choose products with CRI of at least 90 for spaces where communication and colour perception matter most such as dining and social spaces, consulting and treatment rooms. A lower CRI (85 or more) is acceptable for 'back of house' areas, stairwells, storage etc.

Glare

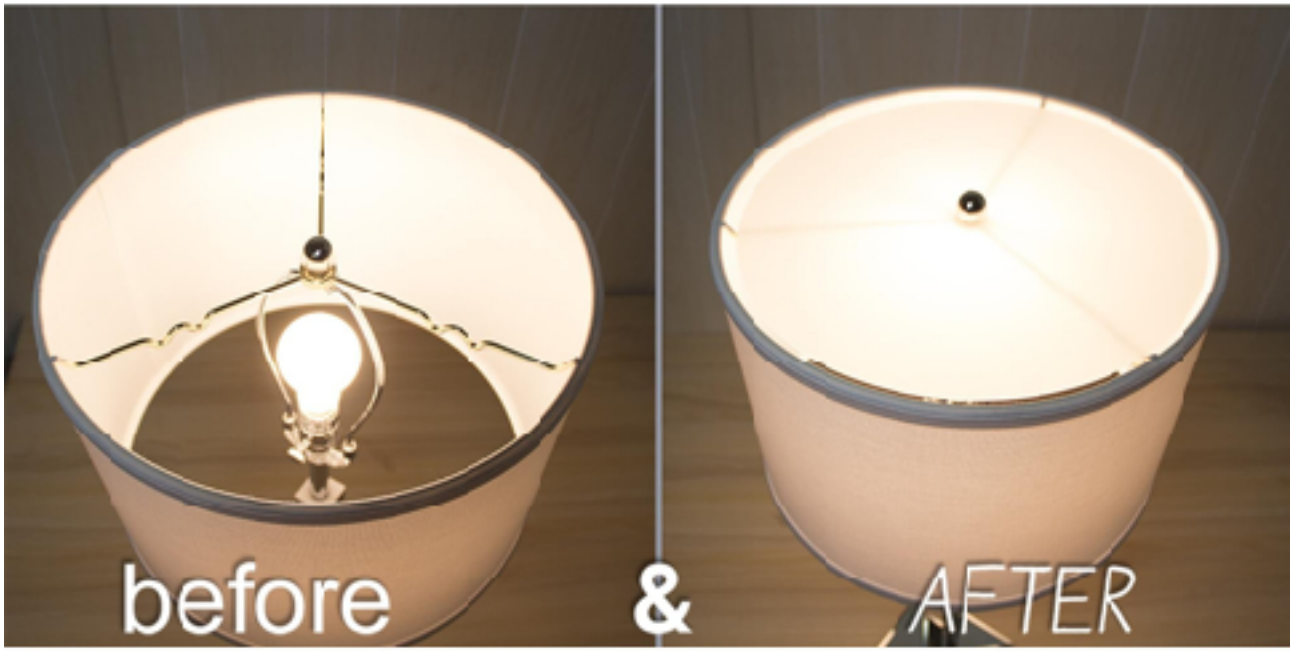
Bare lightbulbs and downlights can be 'blinding' and uncomfortable, especially for people sitting or lying down, or in spaces with lots of reflective surfaces like tiles, mirrors, glass walls and screens.

Commercial light fittings specify a Unifed Glare Rating, which indicates the level of glare likely to be experienced for a typical user under standard installation conditions.

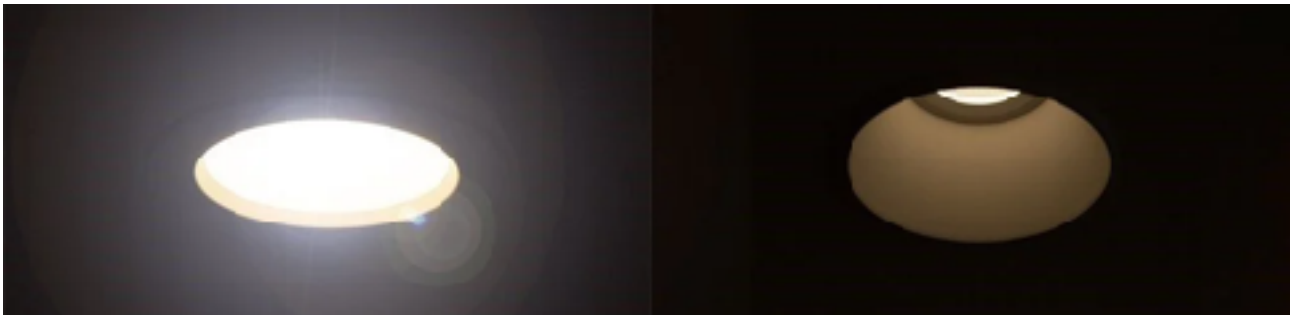
But that isn't a requirement for lightbulbs or downlights.

As a general rule, think about where the light will be installed and choose a frosted or diffused finish for situations where the lightbulb will be visible to the naked eye.

Adding a diffuser to an existing lampshade is a quick and easy option.



For downlights and spotlights, if you can upgrade the fitting, choose a model that is recessed (usually marked ‘anti-glare’).



Alternatively, choose a downlight that allows you to rotate or focus the beam towards a wall or feature, add a shade or a diffuser…

Flicker

Flicker - a fast 'on-off' modulation of the light source can cause eye strain and stress, headaches and even epilepsy for some people.

Some level of flicker is inevitable because LED technology uses direct current. That means the lighting system needs to translate or transform the alternating current coming from the mains grid. This is either achieved through an external driver (usually a separate box) or integrated within the fitting itself.

There are industry standards for acceptable levels of flicker.

But some installations generate flicker because they are poorly engineered or installed, because they are at the end of their useful life or because they are not compatible with the switch or dimmer.

So always for products from reputable manufacturers with product certifications from recognised testing laboratories and specify licker-free or low-flicker. Reputable manufacturers or suppliers will also be able to give you details of brands/models of switch that are compatible with their products.

Chip on Board

Some products come in two parts - a lampholder or fitting and a light source, like a traditional pendant or desk lamp. But a growing number of LEDs are sold as a single, integrated package - the chip is built-in - or 'on board'. There are advantages to both routes - the COB solutions may offer better control of flicker and longer lifetimes compared to the traditional model. They are quicker to install for an electrician, so customers are often encouraged to go that route.

But there are concerns about the environmental impact of many of these products that are not designed to be repaired - when one component fails, the whole thing ends up in the bin. And the traditional model allows you to change colour temperature or brightness to respond to changing use of the space and user preferences.

Finally ...

- Always buy from a website (or ideally a local supplier) that offers a technical helpline with a real person to talk to and a returns policy. That way, you can be sure they are sourcing and testing products safely and will stand by their warranty and are contributing to industry-wide recycling and reuse programmes.
- Never buy products that don't offer a detailed specification or from suppliers who can't give you the answers you deserve about technical performance and lifetime.
- Don't be afraid to buy a selection of products and try them out 'in situ', asking colleagues and others who use the space what they like- and what they don't.
- Send back the ones that don't work and buy a 'set' of those that like, ideally from the same manufacturer. Bulbs can vary a lot between batches, and your eyes will become sensitive to the variation.
- Take some 'before' and 'after' photos to celebrate the improvement.
- And have fun!