

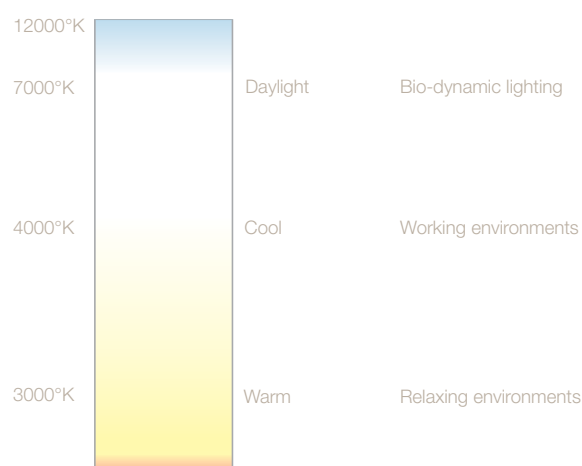
lighting quality

Selecting the best light source for an application raises a number of options to be considered. Amongst these considerations are light source colour temperature, colour rendering index and the light source life.

Colour Temperature

The characteristics of a light source is evaluated by the manufacturer in terms of its colour temperature. This is a measurement given in degrees Kelvin (°K). The colour temperature of a light source defines its 'whiteness', 'yellowness' or 'blueness' – i.e. its warmth or coldness. It does not define how natural or unnatural the colours of objects will appear when lit by the source, this is defined by the colour rendering index.

Lamp Colour (°K)



Colour Rendering Index (Ra)

To help indicate how colours appear under various light sources, a system was devised to mathematically compare how a light source shifts the appearance of a series of sample colours compared to a reference source. The CRI shows the ability of a light source to faithfully reproduce colours in comparison with a natural source. Light sources with a high Ra value are desirable in colour-critical applications such as healthcare, graphical work and retail.

It is therefore essential to specify both the colour temperature and colour rendering index when selecting lamps

Typical Lamp CRI Figures

- Fluorescent lamps with CRI 80+ will produce a first class environment
- Specialist CRI 90 are available. Currently used in some healthcare areas and specialist retail applications where colour rendering is critical.
- Typically HID sources will have low CRI figures. These range from CRI 5 – 70
- Modern CMH lamps can achieve CRI 80 – 90
- White LED solutions all typically exceed CRI 80



Colour rendition CRI 80



Colour rendition CRI 60