

Light and Colour: All LED Light is Not Created Equal

All LED light is not created equal. Most LED lamps and luminaires greatly surpass the performance of traditional technologies by almost all measures. But colour quality can surprise – some LEDs excel, and some may disappoint.

High Colour Rendering Index (CRI) LED light is now the new normal for quality interior lighting. Fabrics, food, materials, products and people stand out as crisp and vibrant as high CRI LED dramatically lifts visual appearances. With low CRI light most subjects appear washed-out, jaded and lifeless. The step up from 80+ to 90+ is now a must for interiors that impress.

WHAT IS COLOUR RENDERING INDEX?

CRI is an index value with a maximum score of 100 that rates the ability of a light source to accurately depict true colours. In earlier days interior LED light sources were typically around CRI 70-80 but now better LEDs have CRI values of over 90, with some as high as 99, and can now deliver white light as vibrant and natural as daylight. Low quality LEDs have patchy spectral performance with some colours absent, in particular the red spectrum is usually weak.

WHY IS RED IMPORTANT?

CRI classifications are further defined into subcategories known as "R" values, the ability to render a particular colour (also on a scale of 100). The R9 value indicates how accurately a light source will reproduce red colours. Red is a critical colour for the satisfactory depiction of human skin tones as people look washed-out and insipid under light that lacks red, an

aesthetic problem for hospitality sites and a real danger in medical diagnostic applications.

RAPIDLY IMPROVING LED TECHNOLOGY

Historically, cool white LEDs were earliest to market for applications where CRI was less important. Later, warmer white options became available at around CRI 80 but carried an energy efficiency penalty compared with cooler white LEDs. Those days of restrictive trade-offs have now passed and high efficiency along with excellent CRI and improved red spectrum performance is now possible.

THE VALUE OF SUPERIOR LED FIDELITY

High CRI LED dramatically lifts the appearance and ambience of homes, retail stores, restaurants, hotels, museums, and galleries, all areas where smart presentation and visual finesse is vital. The standout impact of high colour fidelity LED is now readily available from NZ's leading lighting suppliers – understand the advantages and explore the opportunities.



CRI 90



CRI 80



CRI 50

LCNZ is the industry association for lighting manufacturing, importing and distributing companies in New Zealand.

www.lightingcouncil.org.nz

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