

White LEDs for Solid-state Lighting



Electrospell white LEDs have been especially designed to produce white light with outstanding color quality. LEDs offer several avenues for engineering customised shades of white light. Incandescent bulbs do not offer such possibilities. For this reason, LEDs provide superior solutions for many lighting application. Electrospell white LEDs are powered by specially made indium gallium nitride chips and are integrated with a proprietary blend of phosphors and other optical materials. This combination of device engineering and materials choice enables them to generate white light with desirable color balance attributes.

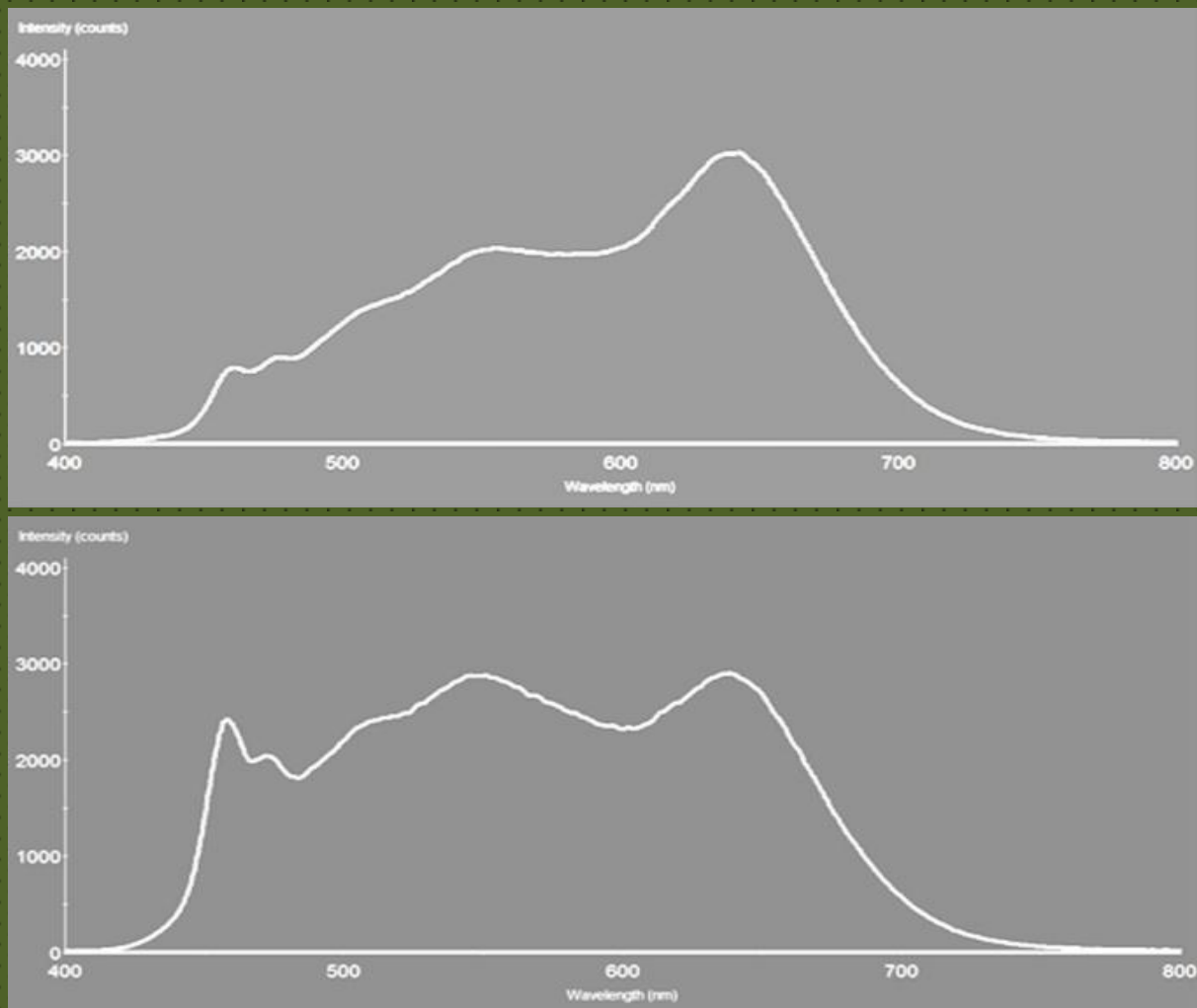


Two types of Electrospell white LEDs are available:

Tungsten LEDs produce light that is very nearly the same in both tint and spectral distribution as that produced by studio-quality tungsten incandescent lamps. Great for use in domestic and industrial luminaires, Tungsten LEDs generate light with high colour rendering index ($CRI \geq 92$). The soft, yellow-white glow of Tungsten LEDs is virtually indistinguishable from that of incandescent bulbs. This characteristic makes them suitable for use in retrofit lamps that maintain the light quality of thermal sources.

Flat-white LEDs produce white light with near-even distribution of wavelengths across the visible spectrum. Their light is visibly very white with no colour bias at all. Equal emphasis of all colours makes flat-white LED light suitable for many applications that range from displays and display backlighting to retail and museum illumination. The engineered white light from flat-white LEDs is very different from that generated by any thermal source, making it a new standard for lighting applications.

Electrospell white LEDs produce light with the spectra shown below (top: Tungsten LED spectrum, bottom: flat-white LED spectrum). The spectra are shown in the 400 to 800 nm range.



Tungsten LEDs have a nominal colour temperature of 4315 Kelvin whereas the flat-white LEDs have a nominal colour temperature of 6162 Kelvin.

Both these LEDs are available in low-power SMD and Watt-class power LED packages that are easy to solder and are characterised by low thermal resistance. For further information please contact Electrospell (www.electrospell.com).

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