Reading a Spectral Distribution Chart

Visualizing the spectrum

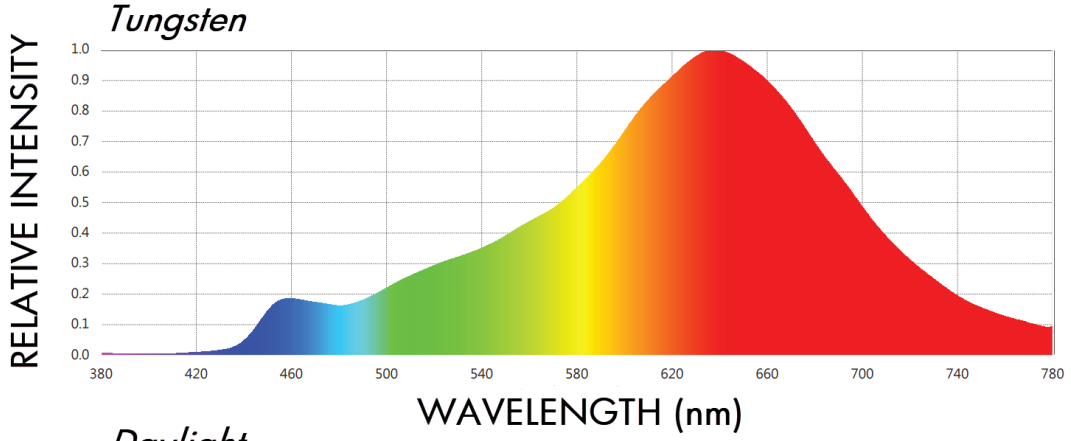
Whether it be from an LED or from a natural source such as the sun, light emission can be characterized by its spectrum. The term spectrum in lighting refers to the light source's inherit composition of different wavelengths (AKA Color). A Spectral Distribution Chart is one tool used to graph the relative intensities of light at these different wavelengths to compare the quality of light.

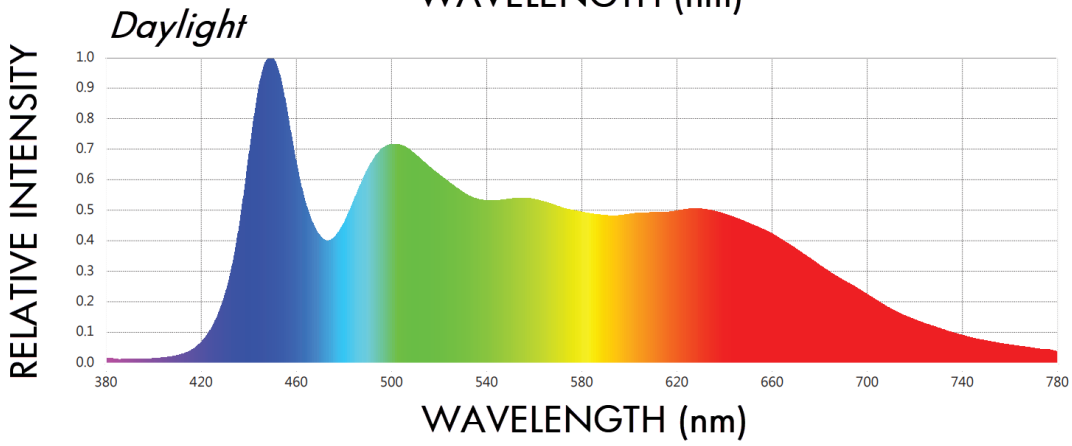
The Spectral Distribution Chart allows for direct comparisons of many different sources of light by plotting intensities of energy using percentages. This means that sources of vastly different intensities (brightness) can be compared in their ability to reproduce a certain wavelength or range of colors. In the lighting world, this makes it much easier for someone to compare products specifications and decide what type or brand of LED is best suited for the environment.

FloppyTape Premium Dynamic White – Spectral Distribution Chart

The chart itself is a relatively simple colorized graph, usually with a "peak" centering around a certain wavelength. This peak is the highest energy relative to wavelength (100%) and all other wavelengths of light are compared against it by percentage. The X-Axis measures the color wavelength in nanometers and the Y-Axis measures the relative intensity of color in percentages.

In the Tungsten chart below, we can conclude that ~640 nm is the highest peak color, plotted at 100% As expected of a warm color temperature "tungsten" LED chip, you see most of the distribution centering around the Orange-Red spectrum of light. Contrasted with the Daylight chart, which sees a peak at ~450 nm, and more distribution centering on the Blue-Green spectrum. Worth noting is the relatively smooth shape of the distribution, indicating a much broader range of available color reproduction when compared to others.





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