

Venture's Technical Information

Color



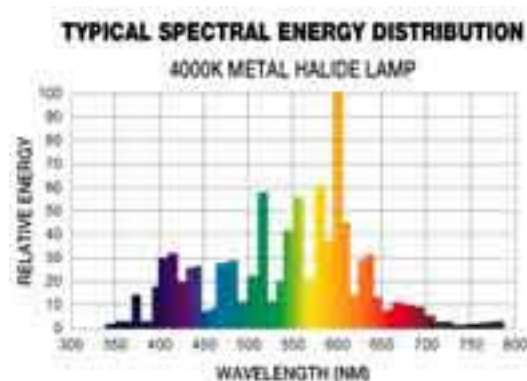
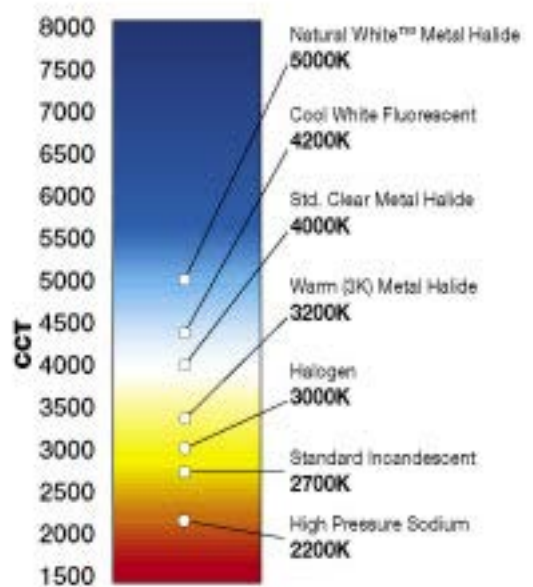
The “color” of light sources is derived from a complicated relationship derived from a number of different measurements, including correlated color temperature (CCT), color rendering index (CRI), and spectral distribution. In general, color is most accurately described by a combination of CCT and CRI.

Correlated Color Temperature (CCT)

The first factor in choosing a lamp color is the correlated color temperature. For example, if a retailer wants lighting to blend in with warm halogen accent lamps, the retailer may choose a Venture® MP 100W/C/U/3K, which has a correlated color temperature of 3200K. CCT is defined as the absolute temperature (expressed in degrees Kelvin) of a theoretical black body whose chromaticity most nearly resembles that of the light source. The CCT rating is an indication of how “warm” or “cool” the light source appears. The higher the number, the cooler the lamp color will appear. The lower the number, the warmer the lamp color will appear.

Spectral Energy Distribution

When we look at a light source, the eye “perceives” a single color. In reality, we are seeing literally thousands of colors and hues made up of a combination of different wavelengths of light. These different combinations and the relative intensity of various wavelengths of light are used to determine the CRI of a light source.



Color Rendering Index (CRI or Ra)

In general, CRI is a numeric indication of a lamp’s ability to render individual colors accurately relative to a standard. The CRI value is derived from a comparison of the lamp’s spectral distribution to the standard (e.g. a black body or the daytime sky) at the same color temperature.

Color Shift and Variation

Different colors are produced in metal halide lamps by using various arc tube shapes and metal halide salts. In new lamps these halides need to “burn-in” for approximately 100 hours before they reach their optimum color. This is why new lamps can sometimes be unstable or vary in color.

As metal halide lamps age, chemical changes occur causing shifts in color. Generally, traditional probe start lamps shift approximately twice as much in CCT over life compared to Uni-Form® pulse start lamps.

Special Colors:

Designer Color® lamps that produce blue, green, aqua and pink light are available for special applications where color is needed without light loss due to filters.



Different Colors

Venture Lighting offers lamps in many colors to suit virtually any lighting application. Outlined below are the various color temperatures (CCT) currently available:

27K 2700K - Used as a replacement for very warm incandescent lamps (coated only).

3K 3000K-3200K - Used as a general warm, white light source, available in clear or

coated finish for retail or interior applications; blends with halogen lamps.

4K 3700K-4000K - Used as a neutral white light source, available in clear or coated finish for general lighting, factories, parking lots, warehouses.

5K 5000K - A moderately high CCT daylight source used in general and retail lighting applications

6K 6500K - A high CCT daylight source used to simulate average outdoor light conditions

10K 10,000K - A very high CCT, daylight light source, used in horticulture and aquarium applications.