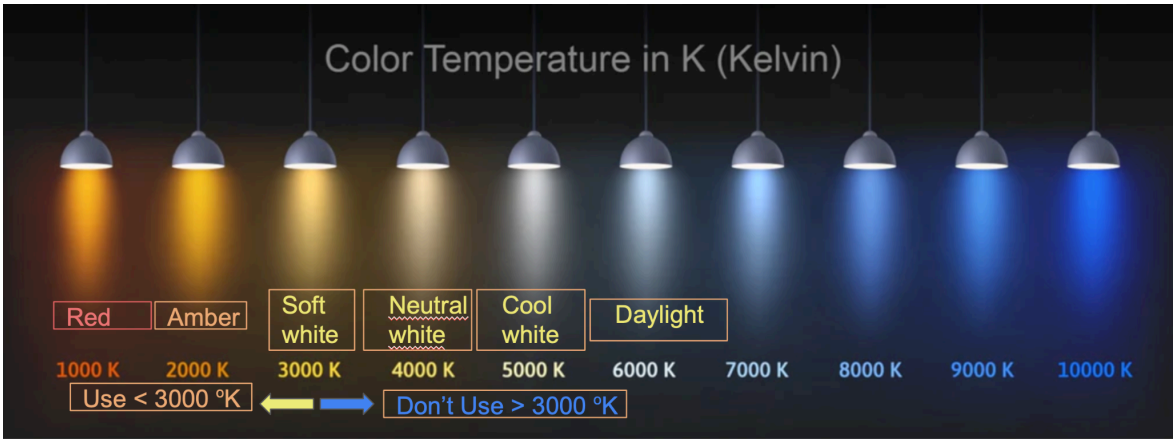
Explainer: Correlated Color Temperature (CCT)

The correlated color temperature is a hue of color a light source or lamp produces. The unit of measure for CCT is degrees Kelvin (ºK) which for lighting is typically on a scale from 1000-10,000 ºK. The higher the CCT the cooler or more blueish the hue of the light becomes. Lower CCT lighting results in a warmer, yellowish hue of light. For reference, our sun has a surface temperature of about 5780 ºK.



The Methow Dark Sky Coalition and Dark Sky International recommends bulbs with an absolute maximum CCT of 3000 ºK (i.e. warm white). Bulbs with a lower CCT such as amber (1800-2200 ºK) or even red are highly recommended.

Impact on human health: One of the main reasons for this is the impact on human health. Similar to most life on earth we adhere to a circadian rhythm which is governed by the natural day/night cycle. This cycle is influenced by the photoreceptors in our eyes that are more sensitive to blue light. Artificial light at night (especially blue light) interferes with our circadian rhythm.

Nocturnal wildlife is likewise much less sensitive to red and yellow light. Countless insects are killed every year when they become trapped by a deadly attraction to bright lights Up to a billion migratory birds are killed every year when they become confused by excess artificial light at night.

Lights with a high CCT contribute more to the night sky light pollution. The reason is that high CCT lights have more light in the blue part of the spectrum which is scattered more in our atmosphere. This increased scattering contributes to the sky glow which makes it harder to observe objects in the night sky

Lights with a lower CCT are easier on our eyes. Consider how your eyes react when you pull into a gas station or a parking lot with the bright high CCT lights. Contrast this with how restful it is to sit around and stare at a campfire which will have a relatively low CCT (red to orange). Bottom line: Use lights with a low CCT.

Methow Dark Sky Coalition

Mission: Preserve, enhance and promote dark skies in the Methow Valley.

Find more lighting resources at:

MVCC

https://www.methowdarksky.org/light-solutions