

# Lighting Color Temperature



*The image above provides a visual guide to understanding color temperature, (measured in Kelvin or K).*

- **Lower** color temperatures are more **orange**, considered “**warmer**”, and are shown on the left side of the scale, toward 1000K.
- **Higher** color temperatures are more **blue** in color and shown on the right side of the scale, toward 10000K. These ranges should be avoided, as bluish light can be disruptive to people and animals, especially later in the day.

## Standard Color Temperatures for Lighting at the Lab:

- **3500K Interior**
- **5000K Exterior - Switched Electrical/Maintenance Areas ONLY**
- **3000K Exterior - ALL OTHER**

## Rationale:

- **Higher color temps at night are harmful to people and animals:** American Medical Association (AMA) issued a [statement](#) about the hazard to both people and wildlife of higher color temperature exposure at night. Although there is difference of opinion about the magnitude, the [Illuminating Engineers Society](#) (IES) is generally in agreement.

- **Early, high-color-temp LED streetlights have led to multiple problems** including increased light pollution. See [IEEE Spectrum article](#). The City of Davis spent \$350,000 to convert their new 4,000k LED street lights to 2,700K to keep residents happy.
- **Darksky Requirements:** [International Darksky Association Fixture Seal of Approval \(FSA\)](#) requires a color temperature of 3,000K.
- **Low-color-temp LEDs are as efficient** as high-color-temp LEDs. Most manufacturers can attain the same lumens/Watt with low color temperature as high color temps.
- **Security Guidelines have no mandate for higher color temperatures.** [IES G-1-16 Guideline for Security Lighting for People, Property, and Critical Infrastructure](#) makes no mention of color temperature selection for “better security”. Only Color Rendering Index (CRI) is mentioned as a value-add for identifying and evaluating security risks. Higher CRI lighting provides better definition and contrast, regardless of color temperature.