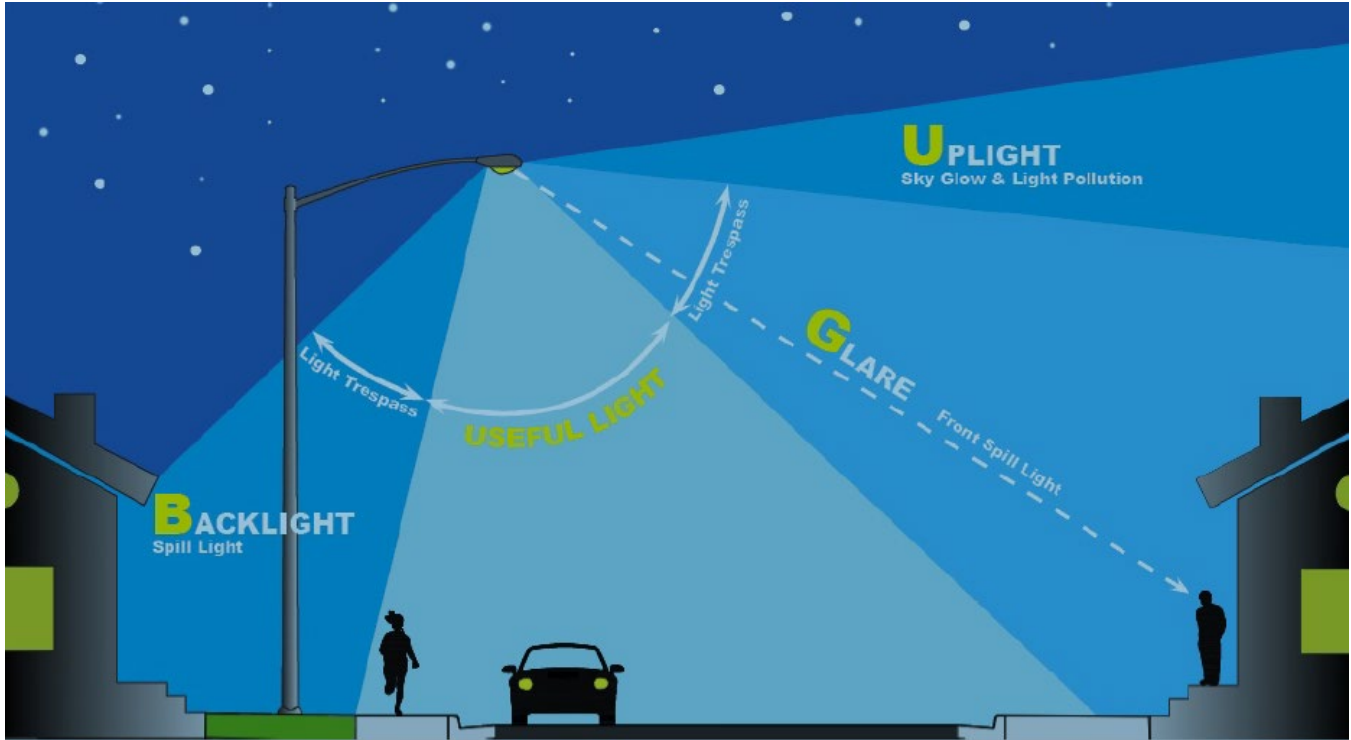




City of Loveland Police Department

External Lighting Guideline

Proper lighting can contribute to the safety and security of our community. Conversely, improper lighting can be wasteful and increase the feelings of crime and danger. This guide is designed to help you choose lighting which will enhance our community and add to our safety and security.



Purposeful Lighting

Light pollution can harm our environment, our health, and adversely affect our safety. Lighting should have a specific purpose that helps us see objects or locations and avoids glare, backlighting, and uplight.



Example of Glare

Lighting Issues to Avoid (BUG):

1. **Backlight** - also known as light trespass is unwanted light shining where it is not needed or appreciated causing annoyance or harm. DO choose a shielded fixture.
2. **Uplight** - is wasted light shining into the night sky causing sky glow. DO choose a fixture which directs light downward.
3. **Glare** - occurs when strong light shines directly into the eye causing discomfort or disability. DO choose a fixture with less than a 70-degree angle.

Lighting Examples

Look at these two examples. The good lighting is designed to shine down into this parking lot and aid drivers leaving and arriving in their cars. It is angled downward at less than 70 degrees avoiding both glare and uplight. Backlighting is not a concern since the light is strategically placed between a parking area and access road.

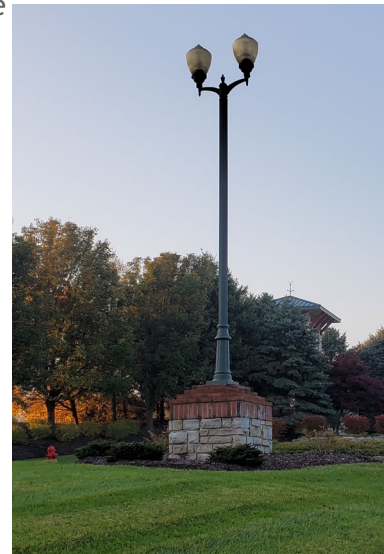
The poor lighting shines directly into the observer's eye causing glare. In addition, it shines up into the sky causing skyglow. Lastly, the light is located in a landscaped green space. What is the purpose of this light?



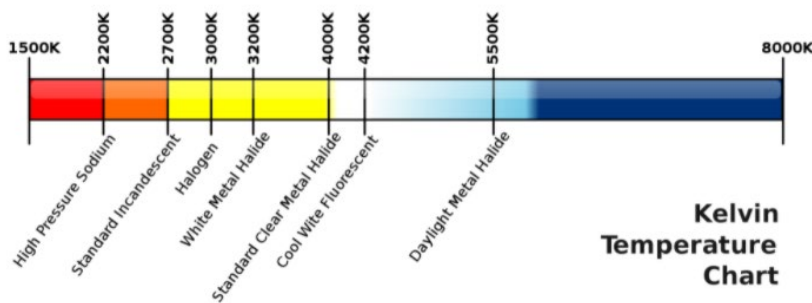
Good Lighting

Other Lighting Concerns

1. **Temperature** - also referred to as Correlated Color Temperature (CCT) or Kelvin (K) is a number between 1,000 and 10,000. Exterior lighting should be 3,000K where wildlife may be impacted or between 4000K and 4500K where security lighting is a priority but blue light should still be avoided.
2. **Color** - The color rendering index (CRI) affects how accurate the color renders to the human eye or video camera. A 70+ CRI is generally recommended for the human eye. Where surveillance cameras are in use the CRI should be 80+.
3. **Type** - There are many types of fixtures and bulbs for many different applications. Generally, LED is the most effective and efficient choice.
4. **Specific Projects** - Some projects involve many different lights for a variety of purposes. These projects should have an illumination survey which includes a foot candle (fc) map to ensure the lighting minimizes contrast and shadowing.



Poor Lighting



Reference

This guide is based in part on the *Denver Street Lighting Design Guidelines & Details*, 2019 and information from darksky.org, 2021.