

**It is estimated that over \$4.5 billion dollars is wasted every year in the US on light pollution**

**LIGHT POLLUTION** occurs when outdoor lighting is misdirected, misplaced, unshielded, excessive or unnecessary. As a result, light spills unnecessarily upward and outward, causing glare, light trespass, and a nighttime urban “sky glow” overhead, indicating wasted energy and obscuring the stars overhead.

### **THE SOLUTION:**

**All lights should be fully shielded or cutoff.** This means no light is emitted above a horizontal plane and no light trespasses into places where it is not needed.

**Add a shield to existing spotlights and floodlights.** Light shields will direct the light toward the ground. Shielded light fixtures use energy more effectively and efficiently, reduce hazardous and annoying glare, prevent unwanted light trespass onto neighboring properties and lessen sky glow, which obliterates our view of the stars.

**Point lights downward.** Installation and positioning are very important. Place fixtures under overhangs when possible. Any fixture positioned too high can splash light far beyond the boundaries of the targeted area. The perfect scenario is uniformity of light over the illuminated area while minimizing the light trespass.

**Turn off the light when you are done.** All outside continuous lighting should be turned off by 11:00 PM. If you attach a motion sensor, average use ends up at less than an hour’s worth of light per night.

**Match the light to your needs.** Check your site at night to evaluate how much, if any, lighting is needed. If you need to purchase fixtures, you can save money by using a lower wattage. A forty or forty-five watt porch light is sufficient to see at night and actually prevents human eyes from being blinded by glare. Limit floodlights to wattages of 60 or less.

**Be Better Neighbors.** Excessive or misdirected lighting can intrude on the privacy of others when light or glare trespasses over property lines. Stand on your property lines and check for light trespassing onto your neighbors’ property. Ask your neighbors to do the same.

**Retain Community Character and Reduce Skyglow.** Our clear view of the dark starry night sky is a resource to be preserved and protected. Stray and excessive lighting contributes to “light pollution”, clutter and unnatural “skyglow”.

### **YOU HAVE CHOICES:**

Which light source you choose is important. If you are purchasing a new light, low-pressure sodium (LPS) is the preferred source, as its nearly monochromatic yellow light can be easily filtered out. Different lamps have specific qualities, better color rendition, for example. Once you know what your needs are, you can choose the best light for the job. If you are correcting existing lighting, there are a variety of shields available. Lighting manufacturers have responded to the crisis of light pollution and there are numerous night sky friendly lights available.

**Low-Pressure Sodium (LPS) lamps:** most energy efficient light source available. LPS has a monochromatic yellow light and it is a good choice if wildlife safety is an issue. It emits light at a wavelength where the human eye is most efficient. It is good for residential street lighting, parking areas, and outdoor security where color rendition is not an issue.

**Incandescent Bulbs and Quartz Halogen:** low efficiency. Acceptable if shielded and used for low wattage applications. Consider occupancy sensor activation. Incandescent bulbs should not be used for most outdoor lighting applications. Glare can be a problem with quartz halogen.

**High-Pressure Sodium (HPS) lights:** energy efficient. Usually of a higher wattage and are good for major roadways, parking lots and other commercial streetlights or sports parks.

**Metal Halide (MH):** is a white light source used where true color rendering is important. Often too high in wattage and result in harsh, overlit environment

**Fluorescent lights:** emit a great deal of ultraviolet light that is useless for illumination but damaging to the detectors used by astronomical observatories. Rarely used in outdoor lighting but if used outdoors, wattages should be under 45.

**Mercury lamps (MV):** This is not an economic or ecologically aware light source by today’s standards.

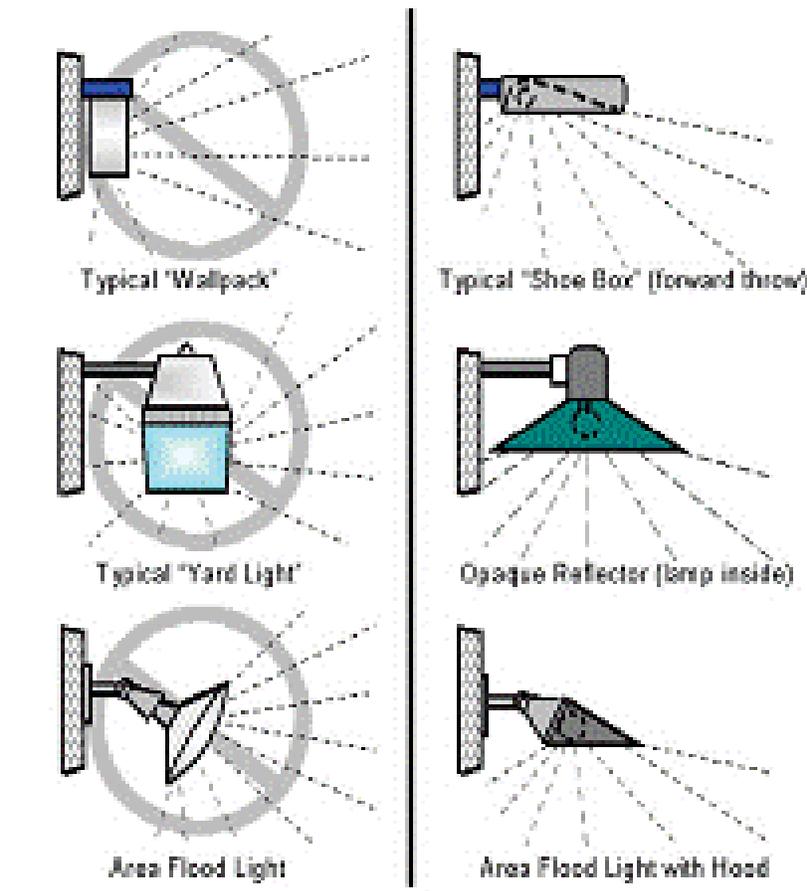
Energy conservation through sensible lighting practices means less dollars spent on expensive electricity, and less pollution in generating that energy, primarily by burning fossil fuels. Bare bulbs cause glare, interfering with night vision especially for older drivers. Maritime navigators are blinded by off-shore glare which interferes with navigational markers.

The night is full of birds, animals, and fish whose habitats are negatively affected by artificial light. There is evidence that light at night is a health risk for humans, both for sleep deprivation and reduction in tumor suppressing melatonin. Our stars are a natural resource. For generations before us and after us, with your help, the night sky can remain a source of inspiration, information, and contemplation. Light Pollution can be eliminated without sacrifice.

**For More Information:**

The Dark Sky Society: [www.darkskysociety.org](http://www.darkskysociety.org)

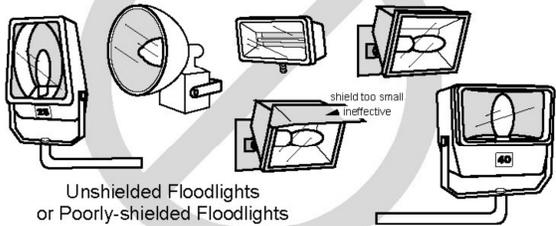
Lighting Recommendations



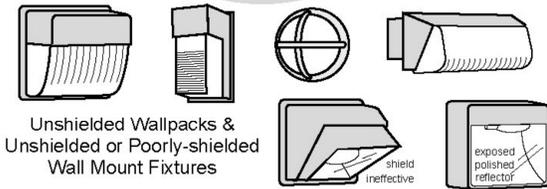
# Examples of Acceptable / Unacceptable Lighting Fixtures

## Unacceptable / Discouraged

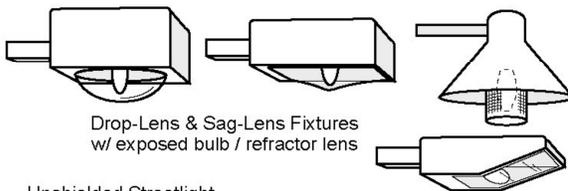
Fixtures that produce glare and light trespass



Unshielded Floodlights or Poorly-shielded Floodlights



Unshielded Wallpacks & Unshielded or Poorly-shielded Wall Mount Fixtures

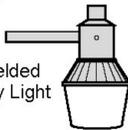


Drop-Lens & Sag-Lens Fixtures w/ exposed bulb / refractor lens

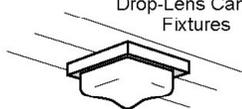
Unshielded Streetlight



Unshielded Security Light



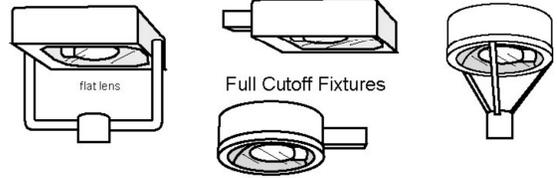
Drop-Lens Canopy Fixtures



Unshielded PAR Floodlights

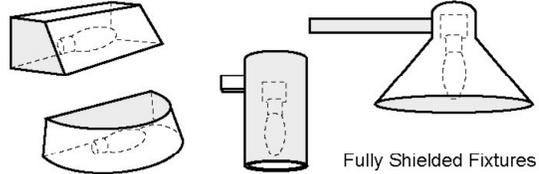
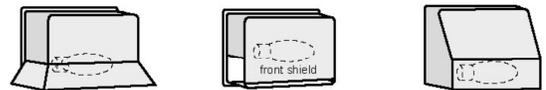
## Acceptable

Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



Full Cutoff Fixtures

Fully Shielded Wallpack & Wall Mount Fixtures



Fully Shielded Fixtures

Full Cutoff Streetlight



Fully Shielded Security Light



Fully Shielded 'Period' Style Fixtures  
bulb shielded in opaque top



Shielded / Properly-aimed PAR Floodlights



Flush Mounted Canopy Fixtures

