

# TYPES OF LIGHTING

## Low-pressure sodium

Low-pressure sodium lamps—producing up to 180 lumens per watt—have the highest efficacy of all commercially available lighting sources. A low-pressure sodium lamp is shown in the image below.

Even though they emit a yellow light, a low-pressure sodium lamp should NOT be confused with a standard high-pressure sodium lamp, which is a high-intensity discharge lamp.



A low pressure sodium lamp.

Low-pressure sodium lamps operate much like a fluorescent lamp and require ballast. The lamps are also physically large—about 4-feet long for the 180-watt size—so light distribution from fixtures is less controllable. There is a brief warm-up period for the lamp to reach full brightness.

With a CRI of 0, low-pressure sodium lamps are used where color rendition is not important but energy efficiency is. They're commonly used for outdoor, roadway, parking lot, and pathway lighting. Low-pressure sodium lamps are preferred around astronomical observatories because the yellow light can be filtered out of the random light surrounding the telescope.

## Efficacy of Light Bulbs

Efficacy is the ratio of light output from a lamp to the electric power it consumes and is measured in lumens per watt (LPW).

Click the name of each type of lamp below to see its efficacy or light output.

**Text description of the Efficacy of Light Bulbs activity.**

Light Output (lumens per watt)					
160					
140					
120					
100					
80					
60					
40					
20					
Incandescent	Mercury	Flourescent	Metal Halide	High-Pressure Sodium	Low-Pressure Sodium

**LED lighting** - A typical signalized four-way intersection may have three lanes per approach (two through lanes and a left turn lane), plus pedestrian crossings.

Conventional incandescent lamps in a single four-way traffic light consume roughly 85 kWh of electricity per day and cost about \$1,600 per year to operate.

LED lights use just 10 percent of the electricity that incandescent lamps use, so the opportunity for savings is enormous.



Traffic Light.

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