

The ratio of scotopic luminance (or lumens) versus photopic luminance in a lamp is called the 'S/P ratio', which is a multiplier that determines the apparent visual brightness of a light source as well as how much light a lamp emits that is useful to the human eye, referred to as visually effective lumens (**VELs**).

See Figure 153 for examples of light sources with S/P greater than 1.5:

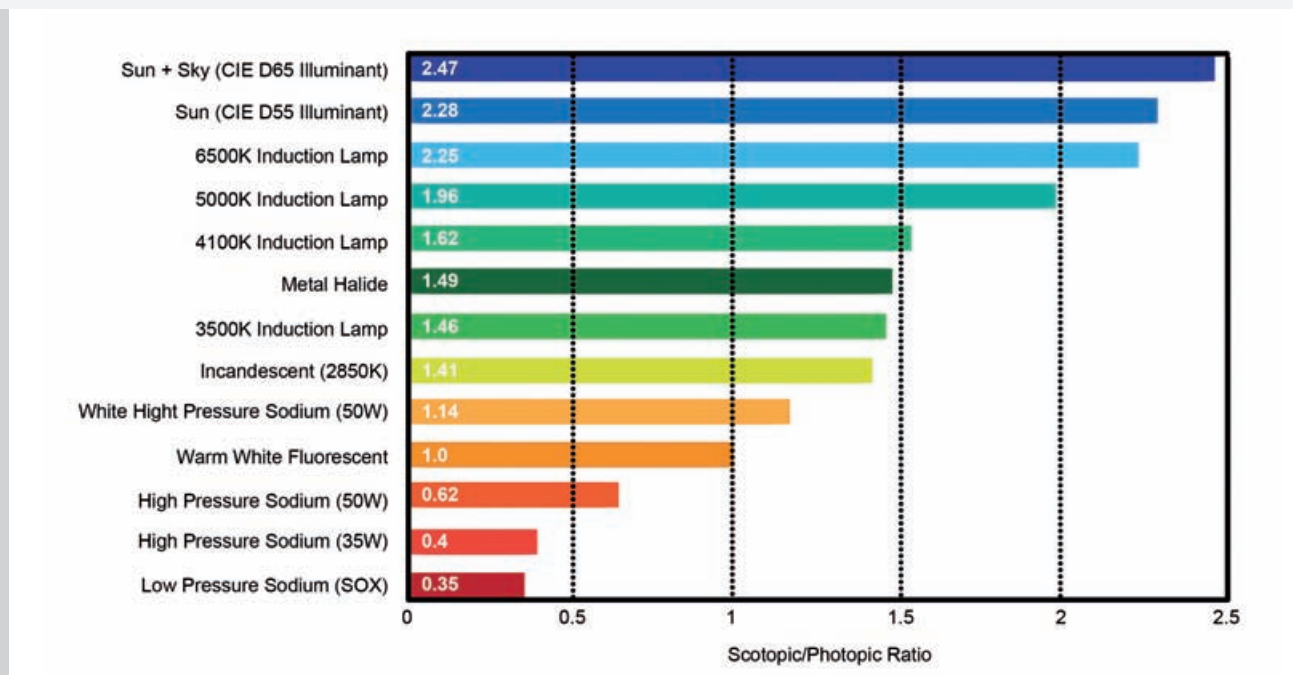


Figure 153

Examples of lamps with different S/P ratio, this diagram is valid for all lamps including LED, the higher the Kelvin rating (colour temperature, e.g. > 4000°K) the better.

Scotopic and Photopic Ratios:

Generally, lamps with high S/P ratios provide sharper vision both outdoors and indoors. So, a 200-watt magnetic induction lamp would appear just as bright as, or brighter than a sodium vapour or metal halide of twice the wattage.

In the mesopic region the spectral sensitivity of the human visual system is not constant, but changes with light level. This is due to the changing contribution of the rods and cones on the retina. Thus, we need not only one mesopic spectral sensitivity function, but instead several functions, together with a defined procedure for using these functions in a photometric measurement system.