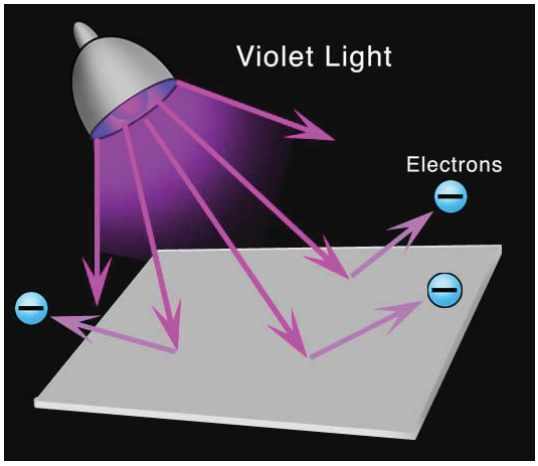
SUNPULSE

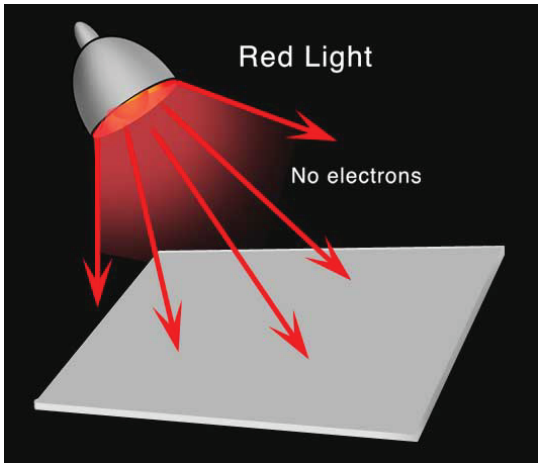
Photonic Energy



The energy of individual photons of violet light can produce an electric current. The energy of individual photons of red light cannot.

Violet and blue photons carry more energy than red light photons.

Each photon must have a different amount of energy for each color of light.



Photon energy increases as frequency increases and wavelength decreases.

The PAR light spectrum has a Wave-like and Particle-like nature, which is why it's hard to mix them together with lamps of both types.

Wavelength *(nm)*	Color	*J / mol*	Energy *kcal / mol*	*eV / photon*
700	Red	17.10×10^4	40.87	1.77
650	Orange-red	18.40×10^4	43.98	1.91
600	Yellow	19.95×10^4	47.68	2.07
500	Blue	23.95×10^4	57.24	2.48
400	Violet	23.93×10^4	71.53	3.10

The energy of photons can be expressed in terms of electron volts.

Plants are more efficient at absorbing red light than blue light, because there's less energy in red light.

Plants have adjusted for the lower level of electron volts in red light.