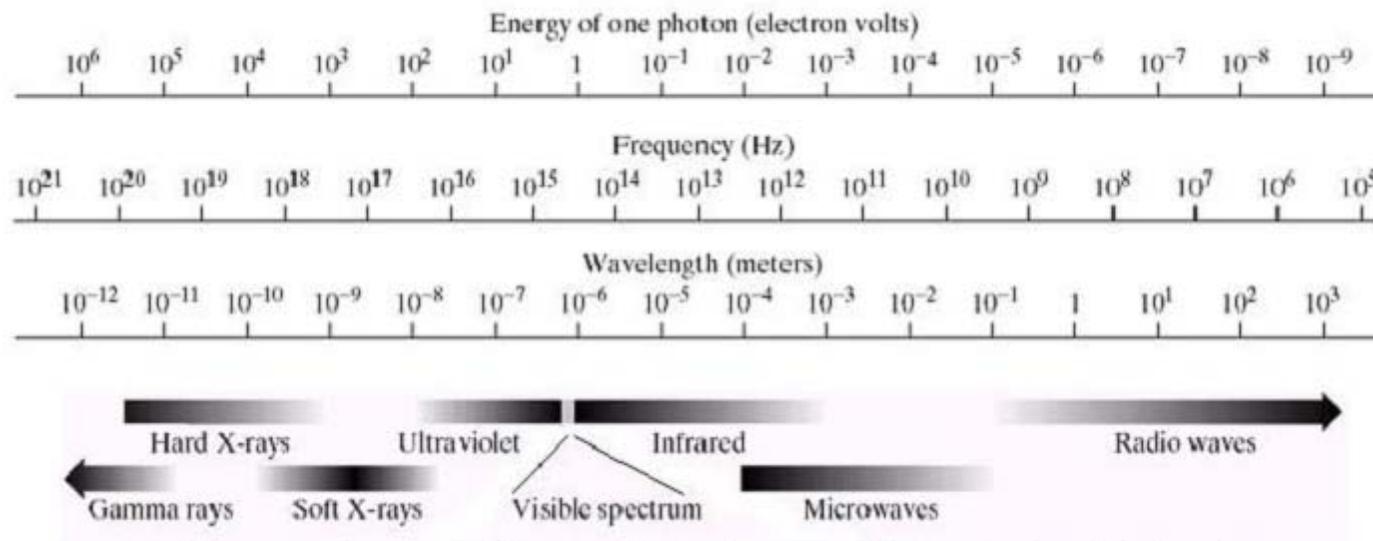
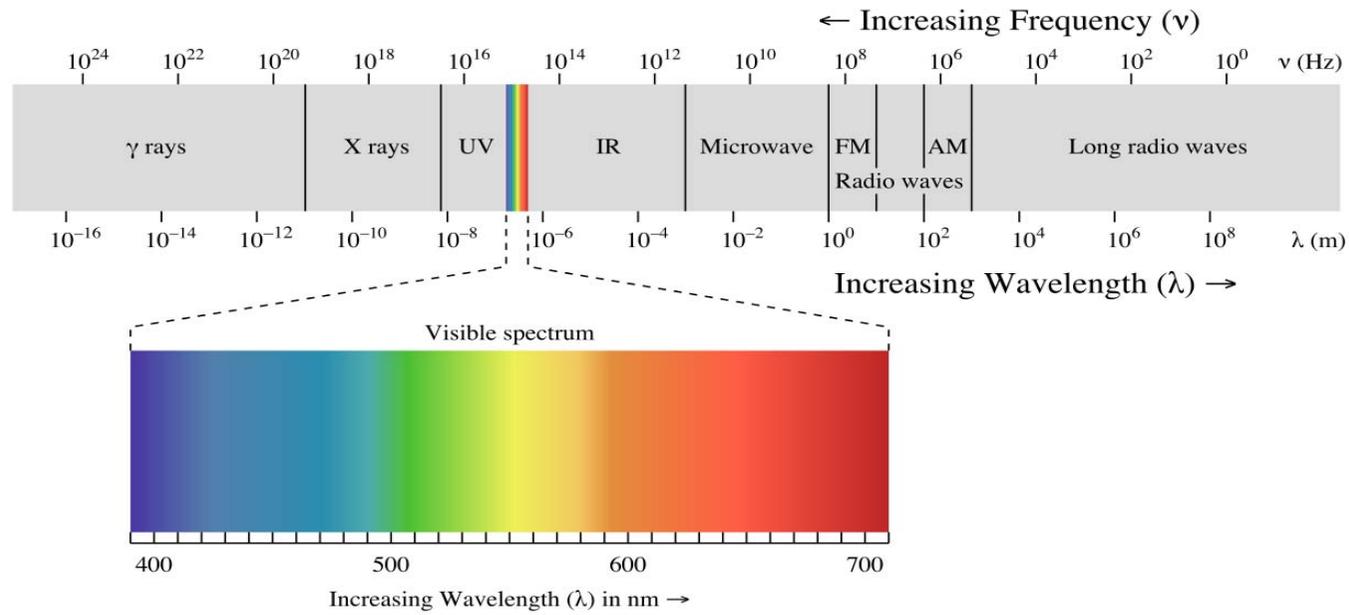


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$$c = \lambda f \quad (c \approx 3.00 \times 10^8 \text{ m/s})$$



2.9 Espectro electromagnético en unidades de energía, frecuencia y longitud de onda

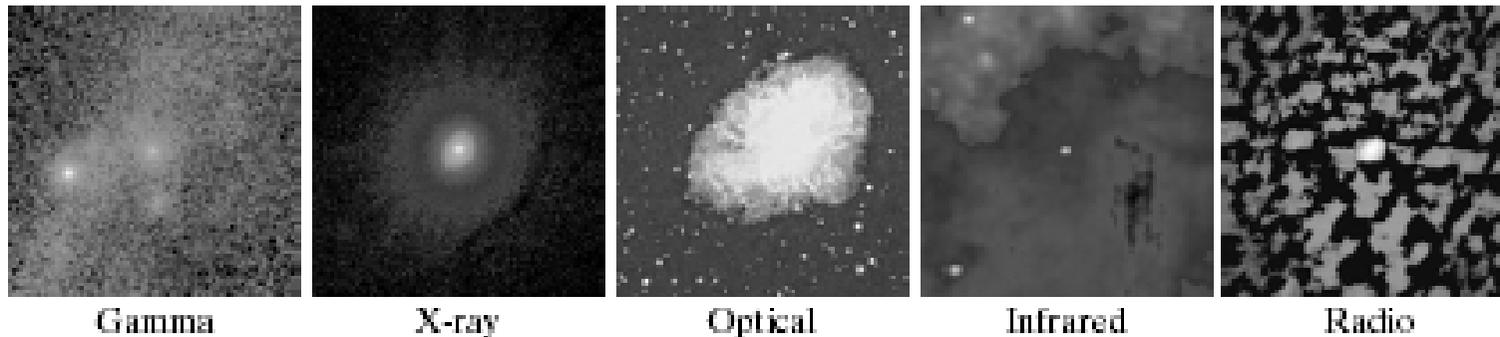


### Longitudes de onda del espectro visible

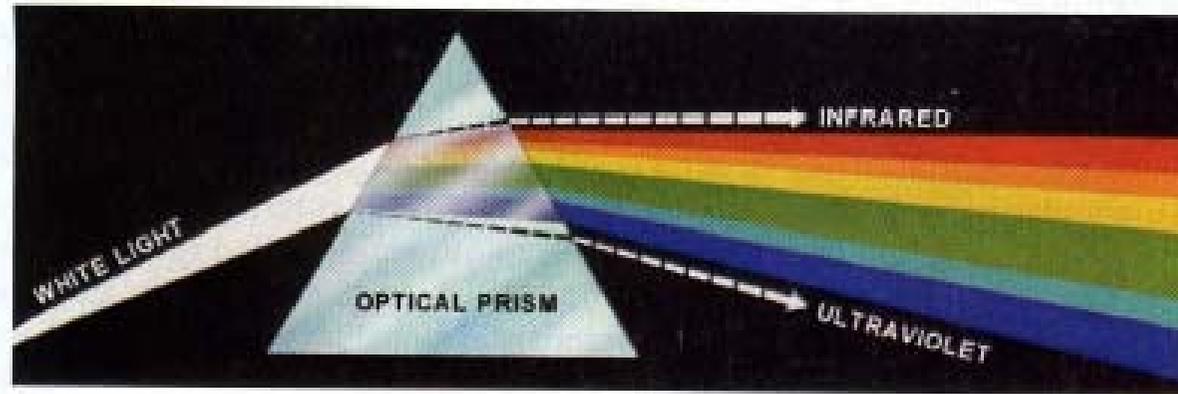
Color	Wavelength	Frequency	Photon energy
violet	380–450 nm	668–789 THz	2.75–3.26 eV
blue	450–495 nm	606–668 THz	2.50–2.75 eV
green	495–570 nm	526–606 THz	2.17–2.50 eV
yellow	570–590 nm	508–526 THz	2.10–2.17 eV
orange	590–620 nm	484–508 THz	2.00–2.10 eV
red	620–750 nm	400–484 THz	1.65–2.00 eV



A composite image of the Crab Nebula showing the X-ray (blue), and optical (red) images superimposed. In the year 1054 A.D., Chinese astronomers were startled by the appearance of a new star, so bright that it was visible in broad daylight for several weeks. Today, the Crab Nebula is visible at the site of that bright star. Located about 6,500 light-years from Earth, the Crab Nebula is the remnant of a star that began its life with about 10 times the mass of our Sun. The pulsar is a neutron star that spins on its axis 30 times a second.



**FIGURE 1.18** Images of the Crab Pulsar (in the center of images) covering the electromagnetic spectrum. (Courtesy of NASA.)



**FIGURE 6.1** Color spectrum seen by passing white light through a prism. (Courtesy of the General Electric Co., Lamp Business Division.)

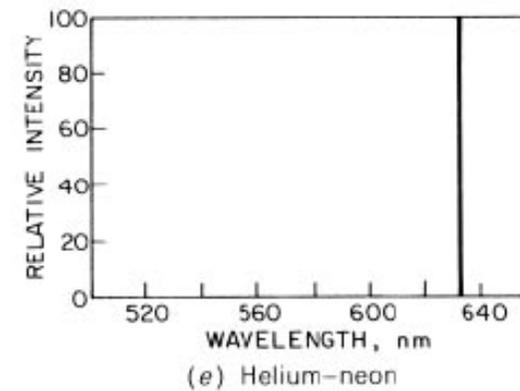
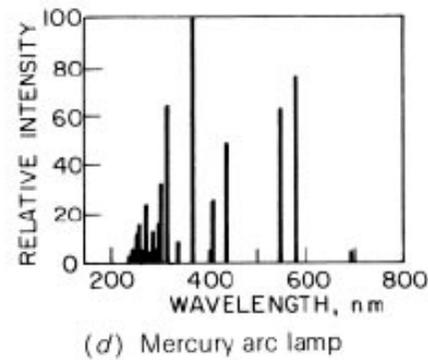
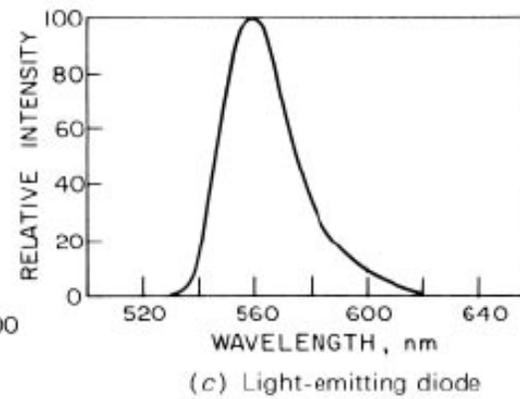
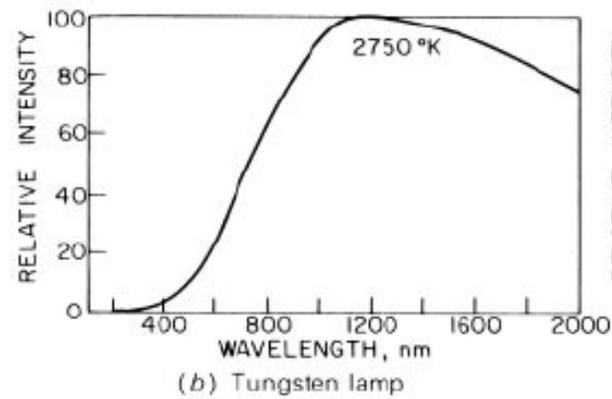
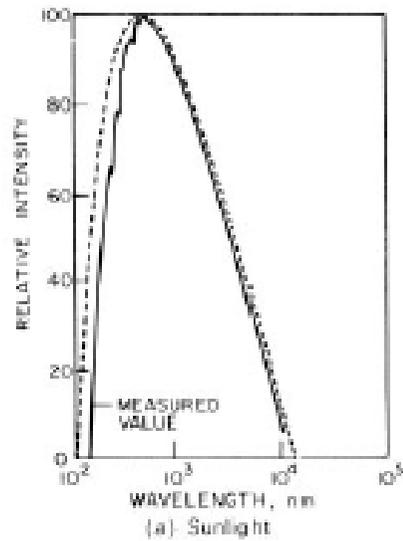
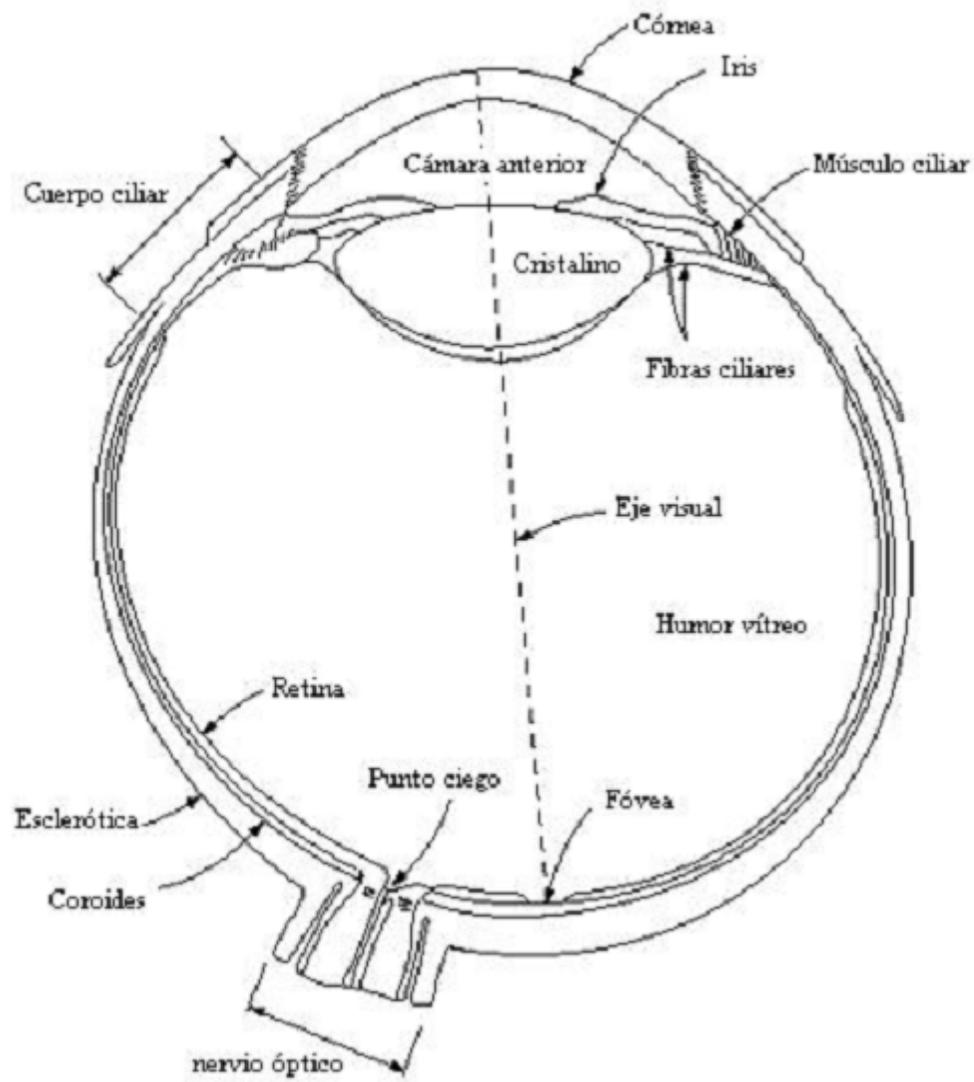
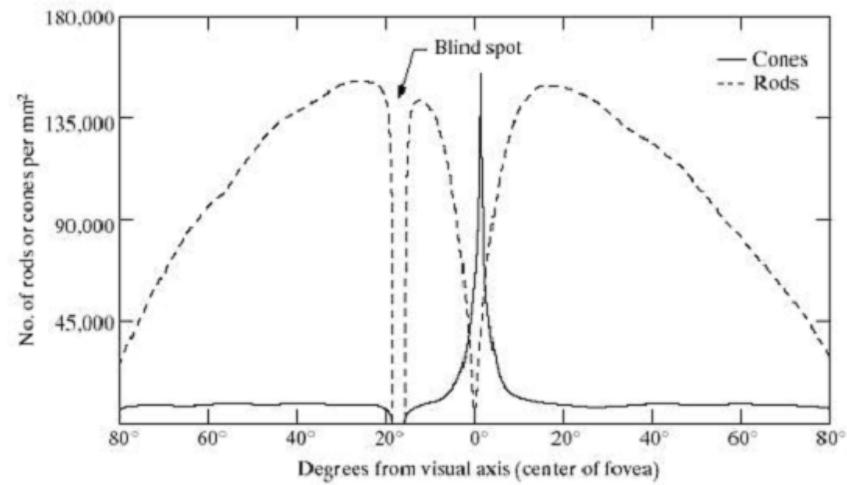
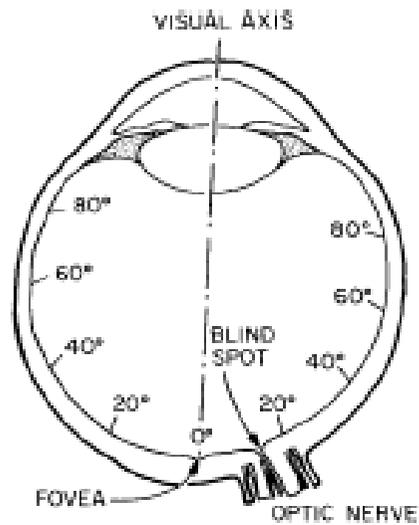


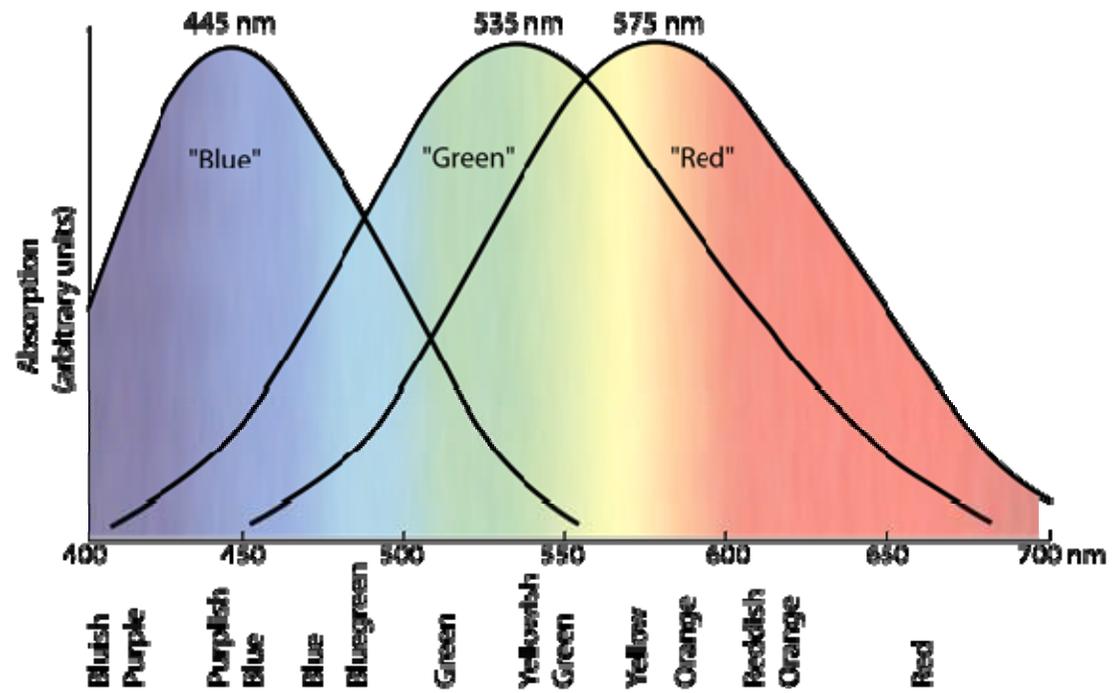
FIGURE 2.1-1. Spectral energy distributions of common physical light sources.



**Figura 2.1**  
Diagrama simplificado de un corte del ojo humano



**FIGURE 2.2**  
Distribution of  
rods and cones in  
the retina.



Normalized responsivity spectra of human cone cells, S, M, and L types

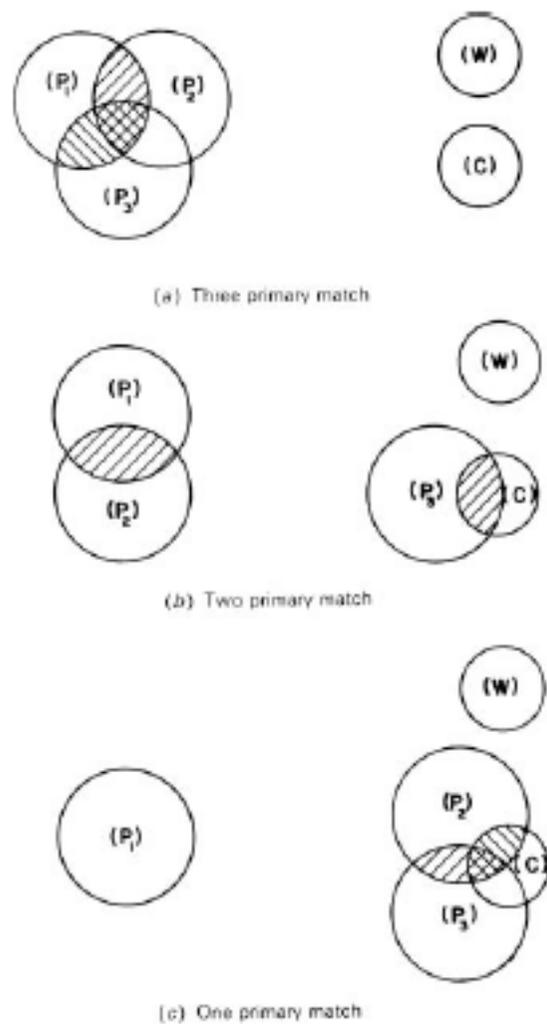


FIGURE 3.2-1. Color matching.

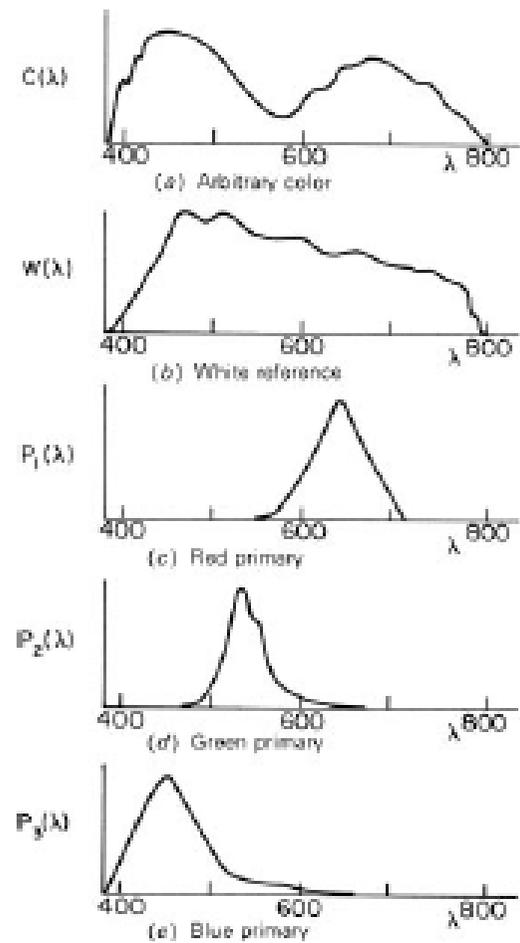


FIGURE 3.2-2. Spectral energy distributions.