

First we find flux from Sirius. Using definition of apparent magnitude and knowing it for the Sun we can find

$$F_{\text{Sirius}} = F_{\text{Sun}} \cdot 2.512^{m_{\text{Sun}} - m_{\text{Sirius}}} = 1361 \frac{\text{kWt}}{\text{m}^2} \cdot 2.512^{-26.7 - 1.4} \approx 1.03 \cdot 10^{-4} \frac{\text{kWt}}{\text{m}^2}$$

We also need temperature of surface of Sirius. From Wikipedia we take it $T = 9940\text{K}$. Wien's displacement law tells us that most intense line will be

$$\lambda_{\text{max}} T = b, \quad \lambda_{\text{max}} = b/T$$

where $b = 2897768.6\text{nm} \cdot \text{K}$, we find that $\lambda_{\text{max}} = 291.5\text{nm}$. We suppose that 40 percent of light are emitted nearly at this wavelength, with energy

$$E = \hbar\nu = \hbar \frac{\lambda_{\text{max}}}{c} = 6.81456 \cdot 10^{-19} \text{J}$$

Now we can find number of photon per human eye per second

$$N = \frac{1.03 \cdot 10^{-4}}{0.4 \cdot 6.81456 \cdot 10^{-19}} \cdot 3.14 \cdot (2.5 \cdot 10^{-3})^2 \approx 0.19 \cdot 10^{10} \text{photons}$$