

Answer on Question #69404 -Physics / Other

In the visible range, the wavelength of light lies in between $\lambda_1 = 400 \text{ \AA}$ and $\lambda_2 = 200 \text{ \AA}$ calculate the corresponding frequencies. Take the speed of light is $c = 3 \times 10^8 \text{ m/s}$.

Solution

The frequency

$$f = \frac{c}{\lambda}$$

So

$$f_{\min} = \frac{3 \times 10^8}{400 \times 10^{-10}} = 7.5 \times 10^{15} \text{ Hz.}$$

$$f_{\max} = \frac{3 \times 10^8}{200 \times 10^{-10}} = 15 \times 10^{15} \text{ Hz.}$$

Answers: $f_{\min} = 7.5 \times 10^{15} \text{ Hz}$; $f_{\max} = 15 \times 10^{15} \text{ Hz}$.

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