

Answer on Question#49070 – Physics – Optics

Calculate the energy of a single photon of blue light with a wavelength of 4.63×10^2 nm

Solution:

$\lambda = 4.63 \times 10^2$ nm (4.63×10^{-7} m) (wavelength);

$c = 3 \times 10^8$ (m/s); (speed of light);

$h = 6.63 \times 10^{-34}$ (J*s) (Planck constant);

$$E = h\nu; \nu = \frac{c}{\lambda}; E = \frac{hc}{\lambda};$$

$$E = 4.3 \times 10^{-19} \text{ J};$$

Answer: 4.3×10^{-19} J;

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