2   The Rayleigh-Jeans Law is an approximation to the spectral radiance of electromagnetic radiation as a function of wavelength from a black body at a given temperature through classical arguments. For wavelength λ, its spectral radiance is: $B = \dfrac{2ckT}{\lambda^4}$, where c is the speed of light, k is the Boltzmann constant and T is the thermodynamic temperature.

What is the unit of B, expressed in SI base units?

A $m^{-3}\ s^{-1}\ K$ B $m^2\ s^{-3}\ kg$ C $m^{-3}\ s^{-3}\ kg$ D $m^{-1}\ s^{-3}\ kg$