

Answer on Question #64515, Physics / Mechanics | Relativity

Why wavelength is short initially in black body when it emits radiation?

Answer:

The relationship between blackbody temperature and the wavelength of maximum radiation in the form of the following equation:

$$\lambda_{max} = \frac{b}{T}$$

Where T - is the temperature in degrees Kelvin. Wien's law (also known as Wien's displacement law) states that the wavelength of maximum radiation is inversely proportional to its temperature. This makes sense: shorter-wavelength (higher-frequency) light, the higher energy photons, which can emit an object with a high temperature.