1 Planck's Law of black body radiation is given by

$$R = \frac{2h(D)^3}{c^2} \times \frac{1}{e^{\left(\frac{hf}{kT}\right)} - 1}$$

where R is power per unit area per unit frequency,

h is Planck's constant,

c is the speed of light in a vacuum,

f is frequency of electromagnetic radiation,

k is Boltzmann's constant,

T is the thermodynamic temperature,

and D is an unknown physical quantity.

Which of the following shows the correct units for D?

A kg m s^{-2} **B** s^{-1} **C** kg m^2 s^{-2} **D** s^{-3}