Calculate the magnetic field of bending magnet

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According to

$$Bqv = \frac{mv^2}{r} \tag{1}$$

$$E_k = \frac{1}{2}mv^2 \tag{2}$$

$$Uq = E_k \tag{3}$$

we can deduce

$$B = \sqrt{\frac{2Um}{q}}\frac{1}{r}. \tag{4}$$

If units are given:

$$U : \mathrm{kV}, 1\,\mathrm{kV} = 10^3\,\mathrm{V} \tag{5}$$

$$m : \mathrm{amu}, 1\,\mathrm{amu} = 1.67 \times 10^{-27}\,\mathrm{kg} \tag{6}$$

$$q : \mathrm{e}, 1\,\mathrm{e} = 1.6 \times 10^{-19}\,\mathrm{C} \tag{7}$$

$$r : \mathrm{cm}, 1\,\mathrm{cm} = 10^{-2}\,\mathrm{m} \tag{8}$$

$$B = \frac{\sqrt{2Um \times 10^3\,\mathrm{V} \times 1.67 \times 10^{-27}\,\mathrm{kg}}}{q \times 1.6 \times 10^{-19}\,\mathrm{C}} \frac{1}{r \times 10^{-2}\,\mathrm{m}} = 0.457\sqrt{\frac{Um}{q}}\frac{1}{r}. \tag{9}$$

If $U = 7\mathrm{kV}$, $r = 57\mathrm{cm}$ and the ion is N_2^{+1} which means $m = 28$ and $q = 1$, $B = 0.112\mathrm{T}$.
If $B = 0.022\mathrm{T}$,$U = 7\mathrm{kV}$ and $r = 57\mathrm{cm}$, $\frac{m}{q} = 1.0756$.

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