Out[ ]=

	Formula	Values
Wavelength	λ	689.449 meters nano
Linewidth	Γ	$\frac{46\,900.}{\text{seconds}}$, $2\,\pi$ (0.00746437 Hz Mega)
Frequency	$\omega = 2\,\pi\,\nu$	$\frac{2.73211\times10^{15}\ \text{radians}}{\text{seconds}}$, $2\,\pi$ (434.829 Hz Tera)
Recoil Velocity	$v = \frac{\hbar\,k}{m}$	$\frac{0.00658397\ \text{meters}}{\text{seconds}}$, $\frac{6.58397\ \text{meters micro}}{\text{milli seconds}}$
Lifetime	$\tau = \frac{1}{\Gamma}$	21 322. nano seconds
Saturation intensity	$Isat = \frac{\hbar\,\omega\,\Gamma}{2\,\sigma 0} = \frac{2\,\pi^2\,\hbar\,c\,\Gamma}{3\,\lambda^3}$	$\frac{0.00297695\ \text{milli Watts}}{\text{centi}^2\ \text{meters}^2}$
Optical cross–section	$\sigma 0 = \frac{3\,\lambda^2}{2\,\pi} = 6\,\pi\,\lambda\!\!\!^{-2}$	$0.226958\ \text{meters}^2\ \text{micro}^2$
Recoil Energy	$\frac{Erec}{\hbar} = \omega_r = \frac{\hbar\,k^2}{2\,m}$	30.001 Hz Kilo, $2\,\pi$ (4.77481 Hz Kilo)
Recoil Ratio	$\frac{\omega_r}{\Gamma}$	0.63968
Capture Velocity	$v_c = \frac{\Gamma}{k} = \frac{\Gamma\,\lambda}{2\,\pi}$	$\frac{0.0051463\ \text{meters}}{\text{seconds}}$
Doppler temperature	$T_D = \frac{\hbar\,\Gamma}{2\,KB}$	0.179116 Kelvin micro
Recoil Temperature	$T_r = \frac{2\,\omega r\,\hbar}{KB}$	0.458309 Kelvin micro