	Formula	Values
Wavelength	λ	689.449 meters nano
Linewidth	Г	$\frac{46900.}{\text{seconds}}$, $2\pi(0.00746437\text{Hz}\text{Mega})$
Frequency	$\omega = 2 \pi \mathbf{V}$	$\frac{2.73211 \times 10^{15} \text{ radians}}{\text{seconds}}$, $2 \pi (434.829 \text{ Hz Tera})$
Recoil Velocity	$V = \frac{\hbar k}{m}$	0.00658397 meters seconds 6.58397 meters micro milli seconds
Lifetime	$\tau = \frac{1}{\Gamma}$	21 322. nano seconds
Saturation intensity	$Isat = \frac{\hbar \omega \Gamma}{2 \circ 0} = \frac{2 \pi^2 \hbar c \Gamma}{3 \lambda^3}$	0.00297695 milli Watts centi ² meters ²
Optical cross–section	$\sigma 0 = \frac{3 \lambda^2}{2 \pi} = 6 \pi \lambda^2$	0.226958 meters ² micro ²
Recoil Energy	$\frac{Erec}{\hbar} = \omega_{r} = \frac{\hbar k^2}{2 m}$	30.001 Hz Kilo, 2 π (4.77481 Hz Kilo)
Recoil Ratio	$\frac{\omega_{\mathbf{r}}}{\Gamma}$	0.63968
Capture Velocity	$\mathbf{V}_{C} = \frac{\Gamma}{k} = \frac{\Gamma \lambda}{2 \pi}$	0.0051463 meters seconds
Doppler temperature	$T_D = \frac{\hbar \Gamma}{2 \text{ KB}}$	0.179116 Kelvin micro
Recoil Temperature	$T_r = \frac{2 \omega r \hbar}{KB}$	0.458309 Kelvin micro
	Linewidth Frequency Recoil Velocity Lifetime Saturation intensity Optical cross-section Recoil Energy Recoil Ratio Capture Velocity Doppler temperature	$\begin{array}{lll} \text{Wavelength} & \lambda & \\ & \\ \text{Linewidth} & \Gamma & \\ & \\ \text{Frequency} & \omega = 2 \pi \gamma & \\ & \\ \text{Recoil Velocity} & \mathbf{V} = \frac{\hbar \mathbf{k}}{m} & \\ & \\ \text{Lifetime} & \tau = \frac{1}{\Gamma} & \\ & \\ \text{Saturation intensity} & \mathbf{Isat} = \frac{\hbar \omega \Gamma}{2 \sigma \theta} = \frac{2 \pi^2 \hbar c \Gamma}{3 \lambda^3} & \\ & \\ \text{Optical cross-section} & \sigma \theta = \frac{3 \lambda^2}{2 \pi} = 6 \pi \lambda^2 & \\ & \\ \text{Recoil Energy} & \frac{Erec}{\hbar} = \omega_\Gamma = \frac{\hbar k^2}{2 m} & \\ & \\ \text{Recoil Ratio} & \frac{\omega_\Gamma}{\Gamma} & \\ & \\ \text{Capture Velocity} & \mathbf{V_c} = \frac{\Gamma}{k} = \frac{\Gamma \lambda}{2 KB} & \\ & \\ & \\ \text{Doppler temperature} & \mathbf{T_D} = \frac{\hbar \Gamma}{2 KB} & \\ \end{array}$