Diffraction Grating and Emission Spectra

Calibration

Wavelength used: $\lambda =$ (1 nm = 10^{-9} m)

First order				*Second order*				*Average*
θ_{left}	θ_{right}	$\theta = \frac{\lvert\theta_{\text{left}} - \theta_{\text{right}}\rvert}{2}$	$N = \frac{\sin\theta}{\lambda}$	θ_{left}	θ_{right}	$\theta = \frac{\lvert\theta_{\text{left}} - \theta_{\text{right}}\rvert}{2}$	$N = \frac{\sin\theta}{2\lambda}$	N

Data

	First order				*Second order*				*Average*
#	θ_{left}	θ_{right}	$\theta = \frac{\lvert\theta_{\text{left}} - \theta_{\text{right}}\rvert}{2}$	$\lambda = \frac{\sin\theta}{N}$	θ_{left}	θ_{right}	$\theta = \frac{\lvert\theta_{\text{left}} - \theta_{\text{right}}\rvert}{2}$	$\lambda = \frac{\sin\theta}{2N}$	λ