

CHEMISTRY 133
Spring, 2016 Homework Set 2.2

Additional Problem:

1. A photodiode array instrument has a polychromator as shown in the figure below. The polychromator's first order linear dispersion ($\Delta y/\Delta\lambda$) is 0.083 mm/nm, and the photodiode array consists of 512 elements each of 0.10 mm width (along the y axis). Assume a constant linear dispersion value. A sodium lamp emitting at 589 nm is detected at element number 300 (with element 1 being closest to the grating). Give the bandwidth associated with each element of the array (in nm) and give the wavelength reaching element 1.

