

Basic Operating Procedure for Ultra Low Frequency Filter

Use lenses A2, B2, C2.

Choose 2400 l/mm grating.

Choose 532 nm ULF for laser.

Close shutter.

Turn on 532 nm laser (follow instructions in standard operating sheet). Make sure laser software is set to 40 mW power.

Put Silicon alignment sample under microscope and focus in standard fashion from 5x up to 100x (or focus using the 50x LWD if that is the objective you plan to use for Raman).

Open the spectrometer door and put in the relay override. Close the door. Because of the override, the door will not close all the way.

Use manual beamsteer to get the beam centered.

Take a standard static scan centered at 520 cm^{-1} to make sure the Si peak is visible. If no Si peak appears at 520 cm^{-1} , find Prof. Umbach

Run the autoalign routine for the slit (do not run autoalign CCD)

Open the spectrometer door and turn off the room lights off. Set the laser power to 100% and open the shutter—you will see bright green light passing through the spectrometer. This is safe as long as you do not put anything reflective into the beam path, Adjust the manual knob on the cross-slit so that the first slit is on or close to the small point of green light.

Limit the x and y range of the plot by right clicking in the plot window and choosing Properties. Under the "General" tab, uncheck "Auto scale on open" and check "Same x limits" and check "Same y limits". Then adjust the x range and the x range so that the spectrum is limited between 510 and 530 cm^{-1} in x and from 0 to 6000 counts in y.

Now run the static scan in cycle mode and adjust the slit to maximize the height of the Silicon peak at 520 cm^{-1} . You may have to move the slit back and forth before you find the best position.

You should be getting somewhere between 5000 and 6000 counts for 1 second exposure at 100% power with the 532 nm laser set to 40 mW.

Run a Quick Calibration.

The system is now ready for you to take spectra from 80 cm^{-1} and above.

Shutdown:

Close the shutter and turn off the laser as described in the standard operating sheet.

Open the spectrometer door and return the cross-slit to the wide open position.

Remove the relay override and put it back onto the two pins where it is stored in the spectrometer.

Close and lock the spectrometer door.

Shut down the software.