

Hitachi F-2000 Spectrofluorimeter

Updated November 14, 2017

Instrument instructions can be found at:

<http://academic.bowdoin.edu/chemistry/resources/instructions.shtml>

If you have any problems with the instrument or would like to get trained, please contact

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1. Protocol

- a. **Read instructions carefully before using instrument.** Reading the bold sentences in each category will tell you what you need to know to run the instrument.
 - i. Bullets are under the bold sentences when more detail is required.
 - ii. At the end of the instructions is a frequently asked questions/troubleshooting section.

2. Startup Procedure

- a. **Switch Power button on.**
- b. **Press “Xe Lamp Start” button to ignite the Xe lamp.**
 - i. Check to make sure the “Xe Lamp” light is lit - located below the screen.
- c. **Switch Main button on.**
- d. **Let the lamp warm up thirty minutes before running your sample.**
- e. **Enter sample information in F-2000 log sheet.**

3. Edit Method

- a. **Set parameters for a wavelength scan**
 - i. Press “2” for WL Scan. Press Enter button.
 - ii. Press “1” for Test Setup. Press Enter button.
 1. You will now be on right side of screen. Use the arrows to change the parameter selected. Once selected enter a new value and press Enter.
 2. Ex scan – enter the starting (Ex Start WL) and ending (Ex Stop WL) values for Ex.
 3. Em scan – enter the starting (Em Start WL) and ending (Em Stop WL) values for Em.
 4. Adjust the y-axis intensity scale – Up Scale and Lo Scale.
 5. Adjust scan speed.
 6. Hit Return button to return to left side of screen.
- b. **Under “Go To λ ” (on the keypad) there is an Ex and Em key.**
 - i. The current settings are displayed in the upper right part of the screen. There are three values highlighted – the first two are the Ex and Em settings, the third is the current intensity level reading.
 - ii. Ex – wavelength you will excite. Enter new value and press Enter.
 - iii. Em – wavelength you will collect emission. Enter new value and press Enter.

4. Collect Spectrum

- a. **Load your sample.**
- b. **Hit the “Forward” button.**
- c. **To do an Emission scan, hit the green start key that says “Em”.**
- d. **To do an Excitation scan, hit the green start key that says “Ex”.**
- e. **When scan is finished, remove your sample.**

5. Analyze Spectrum

- a. **Press “1” for Trace. Press Enter button.**
 - i. Use the left and right directional arrows to move the cursor along the spectrum and record the wavelength and intensity of the peaks.
- b. **Press “2” for Rescale. Press Enter button.**
- c. **Press “3” for Peaks. Press Enter button.**
 - i. Displays one peak at a time. Use the arrows keys to scroll through the peaks.

6. Print Spectrum

- a. **Press “4” to print your spectrum.**

7. Shutdown Procedure

- a. **Switch the Main button off.**
- b. **Switch the Power button off.**
- c. **The lamp will turn off, but it still needs to be cooled by the fan, so turn the Power button on after a couple of seconds.**
- d. **In about fifteen minutes, turn the Power button off.**