

JASCO V-570 UV-vis Spectrophotometer – Instructions

Haverford College Chemistry Department

Directions for the Jasco V-570

Turning on the Instrument

1. If the V-570 Instrument is off, make sure all of the peripheral devices are off including the thermoelectric controller and PbS power supply. Also, make sure the “Spectra Manager” program is **NOT** running on the computer interfaced with the V-570.
2. Check the water level and set temperature ($\sim 15^{\circ}\text{C}$) of the water circulator beneath the V-570. If both are correct, turn on the circulator main power and cooling.
3. Turn on the thermoelectric controller and the PbS power supply.
4. Turn on the V-570. The power switch is located on the right side of the instrument. The instrument will require 1-2 minutes to initialize itself before it can communicate with the computer.

Setting the Temperature of the Sample Compartment

1. On the front of the thermoelectric controller, press the “Enter” button. A blinking cursor should appear on the screen.
2. Move the cursor left and right to shift digits and up and down to increase the value of each digit.
3. When the temperature is set to your satisfaction, press “Enter”.
4. Press the “Start” button to activate the control mechanism.
5. The sample temperature can also be set through the software once a measurement option has been selected (*i.e.* spectrum measurement).

Taking a UV/vis Spectrum

For best results, you should only take a spectrum after the instrument has been on for at least an hour

1. With the instrument on, open the “Spectra Manager” program. Under the measurement column, double click on the option “Spectrum Measurement.” (Note 1: if the instrument is still initializing after being turned on, you will receive an error message. Simply press “retry” after a minute or so. Note 2: If this is the first time

“Spectrum Measurement” has been run since turning on the V-570, it may take a few minutes for communication between the instrument and the computer to be properly established.)

2. To set the instrumental parameters for your spectrum, click the “Parameter” option in the “Measurement” menu. The entries “scan start” and “scan end” (high wavelength to low wavelength) determine the wavelength range of your spectrum. Some recommended parameters for a UV/vis spectrum are:

Photometric Mode: Abs

Response: Fast

Band Width: 1.0 nm

NIR: 4.0 nm

Scanning Speed: 200 nm/min

Start: 800 nm

End: 300 nm

Data Pitch: 0.5 nm

3. Under “Measurement”, click the “Baseline” option. Make sure the “Baseline Correction” box contains a check mark and then click “OK”. This will apply the most recent baseline correction to the spectrum you are about to take.
4. Slide open the sample compartment and place your reference cuvette containing solvent in the rear holder and your sample cuvette in the holder closest to you. Slide the sample compartment closed.
5. Click on the “Start” button in the spectrum measurement window and your spectrum acquisition will begin. To stop the acquisition before completion, simply press the “Stop” button.
6. Once the acquisition is complete, your spectrum will appear in the “Spectra Analysis” window from which it can be manipulated, saved, and printed. You must manually save your file or the data will be lost.

Turning the Instrument Off

1. Exit from any measurement modules of the “Spectra Manager” program (i.e. spectrum measurement, Single wavelength measurement, etc.).
2. Exit from the “Spectra Manager” program.
3. Turn off the Jasco V-570 switch, the thermoelectric controller switch, and the PbS power supply switch.
4. Turn off both switches of the water circulator below the countertop.