

Obtaining a UV-Visible Spectrum with the Cary 50

Note: Menu commands are specified in boldface type like this: **File: Open Data**

1. Start the Cary 50 on by turning on its computer and monitor (Ⓢ buttons on each). When the Novell Login appears, enter your name and password. Wait until the Windows 2000 desktop appears. (Allow 15 minutes for this process before seeking help.)
2. On the desktop, find the Cary WinUV icon and double click it. In the Cary WinUV window, find **Scan** and double click it to begin your instrument session. The **Scan-Online** screen appears, with a row of buttons across the top. Move the cursor onto each button (but don't click), wait a moment, and see what each button does. You will need some of them later.
3. **File:Open Method**. In the folder C:\Varian\Cary WinUV\METHODS, find and open the file **Simple Scan**. This file contains most of the proper initial settings for a routine absorption spectrum from 200 to 700 nm, using baseline correction for solvent or cell absorbance.
4. Click **Setup**. The setup screen appears. There are actually several screens, each reachable by tabs at the top. Browse these screens to see the default settings of this methods file. Change settings as necessary. Typical settings might be:

Cary tab

X Mode Start **600 nm** Stop **250 nm**
Y Mode **Abs** Y Min **0.00** Y Max **1.00**
Cycle Mode **off** (unchecked)
Beam Mode **Dual Beam**
Scan Controls **Simple** Speed **Medium**
Display Options **Overlay Data**

Baseline tab

Correction **Baseline Correction**

Accessory tab

All accessories **off**

Reports tab

Name **Your name(s)**
Comment **Add comments to appear on the printed spectrum and report.**
Options Use Data Form **on** Graph **100%** Paper Height Parameters **on**
Peaks **All Peaks** Peak Labels **X & Y Labels** Autoconvert **none**

Click on the Peak Information button and make these settings:

X & Y Labels **on** Y Decimals **2** Peak Type **Peaks** Peak Threshold **0.01**
Click OK to return to the **Reports** tab.

Autostore tab

Storage **off**

5. Click **OK** to return to the **Scan-Online** screen.
6. Fill a **clean** sample cell (quartz if scan goes below 400 nm, glass otherwise) about 2/3 full with your solvent. **Put a cover on the cell, and make sure that the cell exterior is clean and dry.** Place it in the sample compartment with its clear sides facing left and right (a frosted side facing you).
7. Click **Zero**. Click **Baseline**. If your solvent-filled cell is in place, click **OK**. The instrument runs a baseline spectrum, but does not display it. The instrument will subtract this baseline spectrum from each subsequent spectrum or **trace** during your session. Wait until the traffic light is green.
8. Remove the sample cell, empty it, and refill it with your sample. Put a cover on the cell, and make sure that the cell exterior is clean and dry. Place it in the sample holder and close the lid.
9. Click **Zero**. Click **Start** (traffic light) to begin your scan. When prompted, assign a sample name or number (preferred) for this trace. The spectrum appears in the upper half of the screen, followed by calculation of peak positions and intensities (AU) and generation of a report in the lower half of the screen.
10. If peaks are too large or too small, click the **Scale Graph** button (two crossed rulers) at the top of the window to expand or contract the trace to fit the graph. If you can't bring the largest peak on scale, dilute your sample with solvent, **mix well**, and run another trace. Number each trace in sequence.
11. When you have a satisfactory trace, click the **Trace Preferences** button (with S1 S2 S3 on it) and uncheck all traces except the one you want to print. Click **OK**. You should now see only one trace.
12. If you collected more than one trace, click **Clear Report** to remove all trace reports, and then click **Recalculate** to rewrite the report for this trace.
13. Look over the report information. If you want to change anything, use the menu command **Edit: Edit Report**, and edit as needed. Click anywhere off the report to get out of edit mode.
14. When you are satisfied with the report, click **Print**. Click **OK** on the print dialog. Your spectrum and report will emerge from the laser printer.
15. If you think you may need these data in the future, save it as follows:
 - a) Click **Trace Preferences** and redisplay (check) all traces you want to save. Click **OK**.
 - b) **File: Save Data**. Set the file type to **Batch** and give your file a name. (A batch file includes all visible traces, reports, and the method settings.)
 - c) Navigate to direct the file to your own disk. Scans saved to the C: drive are not guaranteed to survive the next reboot.
 - d) Click **OK** to save.
16. **File: Exit** to end your instrument session.
17. **Start: Shutdown** to turn off the instrument (only if you are the day's last user).
18. **Leave the cells, instrument, and area CLEAN.**