

SediGraph High Speed Analysis Using the Opt5120 Utility Program

The SediGraph III 5120 software includes a utility program – opt5120.exe – that controls certain operations for the SediGraph software. This utility is installed in the default SediGraph directory, named *5120*, during software installation and directly affects two separate portions of the analysis.

The opt5120 utility modifies the SediGraph operation by changing options in a file that is read when you start the SediGraph application.

One feature of this utility is to set up how the cell is positioned during the analysis. If the ending diameter of an analysis is set to a value less than or equal to 0.2 μm , this option has no effect. On the other hand, if the analysis is set to end at a diameter greater than 0.2 μm , the final positioning of the cell at the end of the analysis is affected.

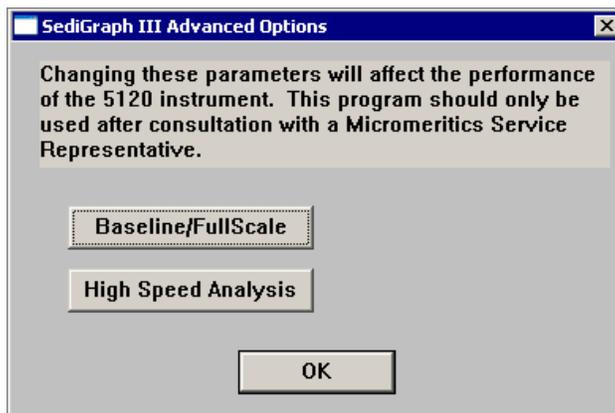
During sedimentation, larger particles fall with a higher velocity than do smaller particles. The analysis begins with the collimated x-ray beam scanning near the bottom of the analysis cell. This helps to ensure that the large particles have time to attain a terminal velocity before being analyzed.

In order to decrease analysis time, the cell is moved downward during analysis, with the x-ray beam scanning very near the top of the cell at the end of the analysis. This x-ray beam is of finite thickness and therefore the separation between particles of similar size must be sufficient to ensure that multiple sizes are not still present in the beam. If the analysis is too short for complete separation of similar sizes, the results obtained will not be the same if the analysis is performed with a different ending diameter, and thus a different analysis time. This is the case when the ending diameter is set larger than 0.2 μm .

Older versions of the SediGraph 5100 (version 3.07 MICMOS or earlier) did not include this correction. Use the **High Speed Analysis, Control Mode** option in the opt5120 utility to have data collected on the SediGraph III 5120 more closely match the data collected with previous SediGraph models. Follow the instructions beginning on the next page to access this option. Instructions for returning to **Normal Mode** operation are located on the last page.

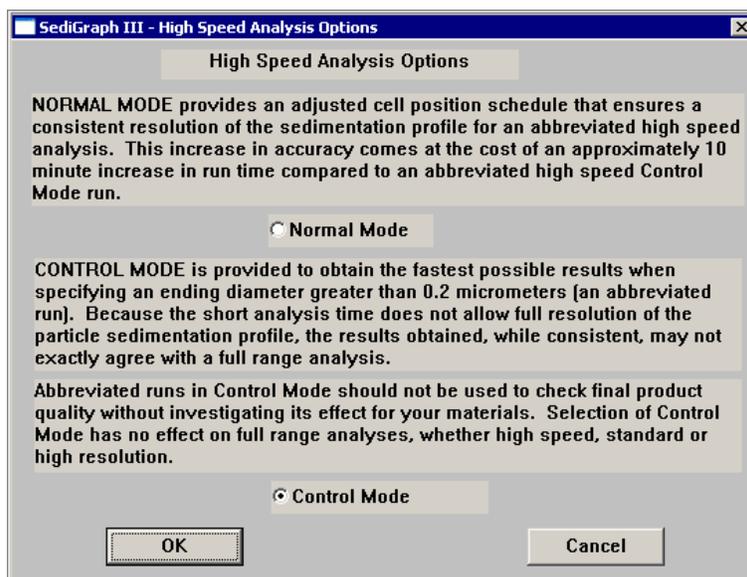
To access the opt5120 utility:

1. Close the SediGraph application.
2. Navigate to the 5120 application directory.
3. Locate the opt5120 utility, named opt5120.exe; double-click on the file to display the SediGraph III Advanced Options dialog.



You will note that the dialog instructs you to consult a Micromeritics Service representative before using this option. However, if you understand the reasons for using this option or unless you wish to discuss details of the operation, it is unnecessary to contact your representative.

4. Click on the **High Speed Analysis** button to display the Baseline High Speed Analysis Options dialog.



5. Select **Control Mode**, then click **OK**. Click **OK** again to close the utility.
6. Restart the SediGraph application and perform your analysis. Now the SediGraph cell will collect data for the ending diameter at the top of the cell, regardless of the ending diameter value.

To return to normal operation:

1. Close the SediGraph application.
2. Start the opt5120 utility.
3. Click on the **High Speed Analysis** button.
4. Choose **Normal Mode**, then click **OK** twice to exit the utility.
5. Restart the SediGraph application.

A similar utility program was included in the SediGraph 5100 Windows software. That utility was named **option51.exe** and was installed in the primary SediGraph 5100 directory named win5100. The function and use of this utility was exactly the same as that for the new SediGraph III 5120 utility.