



Performing a Diode Array Detector (DAD) Test (Lamp Intensity and Holmium Spectrum) on a Capillary Electrophoresis Instrument Using the ChemStation Software

DAD Test

You can use the DAD Test to assess the performance of your diode array detector. The DAD test comprises two tests. The first test is the instrument characteristic which contains information about the lamp intensity of the DAD. The second test is a check of the wavelength calibration. The measured spectrum of the holmium oxide filter is displayed.

To get reproducible results, we recommend to use an empty alignment interface for the extended light path capillary (Part number G1600-60230) without a capillary installed, to perform this test. Of course you can use a different interface with a capillary installed for this test noting that each alignment interface will show different results.

Note: Do not start a run or select flush capillary without a capillary installed because liquid can contaminate the insulation plate and the electrodes.

Deuterium Lamp Counts (Lamp Counts)

The reported counts indicate the deuterium lamp performance over the wavelength range from 190 to 600 nm. The number displayed is the lamp counts at the spectrum maximum and minimum. If the maximum counts are lower than 4000 counts and you have problems with baseline noise, you should consider changing the lamp. This is a very general value. It very much depends on your special analysis, your measuring wavelength, and which lamp intensity is required. An acceptable value may be higher or much lower. Base your decision to change the lamp on the detector noise rather than on the counts value.

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Holmium Spectrum

Displays the Holmium spectrum from 190 nm to 600 nm, enabling you to check the performance of the lamp.

Performing the DAD Test

- If not already displayed, pull down the **Instrument** menu and select **More DAD and Test**.
- <Click> **Measure** to start the DAD Test.
- <Click> **Save** to save the current measurements within the ChemStation. All previous DAD test results are overwritten.
- After leaving the DAD Test dialog box, the Dadtest information is automatically saved to the DAD test database, a file called DADTest.Reg. This file is saved in the instrument directory, for example: C:\HPCHEM\1
- You can use the **Review DAD Test** function in the data analysis **View** menu to inspect the DADTest results database.

Instrument 3 (online): Method & Run Control

File RunControl Instrument Method Sequence View Abort Help

Method and Run Control DEF_CE.M DEF_CE.S Run Method

The interface features two main plots: 'Lamp Intensity' (y-axis: Cnts, x-axis: nm) and 'Holmium Spectrum' (y-axis: mAU, x-axis: nm). Below these are 'Measure', 'Save', 'OK', and 'Help' buttons. A central schematic shows a detector at 25.0 °C with 'Outlet' and 'Inlet' ports, and status indicators for 'Tray Door' and 'Top Cover'. A green bar at the bottom left displays the error message 'DAD is offline'. The bottom right corner shows the 'HP HEWLETT PACKARD' logo and a 'busy' indicator.