Agilent Technologies

Innovating the HP Way

1100 Series DAD Wavelength Calibration Test Procedure Using the Chemstation

DAD Wavelength Calibration Test

The detector uses the alpha (656.1 nm) and beta (486 nm) emission lines of the deuterium lamp for checking wavelength calibration. The sharp emission lines enable more accurate calibration check than is possible with holmium oxide. When calibration test is started, the 1 nm slit is moved into the light path automatically, and the gain is set to zero. On completion of the scan, the alpha- and beta-line deviations (in nm) are displayed. These values indicate how far the detector calibration deviates from the actual positions of the alpha and beta emission lines. To eliminate effects due to absorbing solvents, the test should be done with water in the flow cell (during the DAD Self Test, the flowcell should be removed). After calibration, the Holmium Oxide Test provides verification of wavelength accuracy at three additional wavelengths. The wavelength calibration test should be done after maintenance of the flow cell, lamp exchange, or after major repair. If test indicates the detector calibration is incorrect, Wavelength Recalibration should be done.

Caution:Please note that this test requires the spectral evaluation module G2180AA to be installed.

DAD Wavelength Calibration Test Results

Limits

Absorbance Maxima	Limits
486.0 nm	485.5 - 486.5 nm
656.1 nm	655.6 - 656.6 nm
Maximum deviation	-0.5nm to +0.5nm

Probable causes of test failure

Cause	Corrective action
Absorbing solvent or air bubble in flow cell. with water.	Ensure the flow cell is filled
Incorrect calibration	Recalibrate (see Wavelength Calibration) and repeat the test.
Dirty or contaminated flow cell.	Run the Cell Test. If the test fails, exchange the flow cell windows.
Dirty or contaminated optical components (achromat, windows).	Clean optical components with alcohol and lint-free cloth.