



Agilent Technologies

Innovating the HP Way

1100 Series DAD Intensity Test (Self Test) Procedure Using the Chemstation

DAD Intensity Test (Self Test)

The intensity test measures the intensity of the UV (deuterium) and Vis (tungsten) lamps over six wavelength ranges (two intensity maxima, four intensity minima). The test evaluates the results automatically. The test is used to determine the performance of the lamps and optics (see also Intensity Test and Cell Test). When the test is started, the 1 nm slit is moved into the light path automatically, and the gain is set to zero. The test should be done with the flowcell removed.

DAD Intensity Test Results

The ChemStation evaluates four spectral ranges automatically, and displays the limits for each range, the measured intensity counts, and “passed” or “failed” for each spectral range:

Limits

Spectral Range	Limit (counts)
190-350 nm (intensity maximum)	<450000
700-950 nm (intensity maximum)	<300000
Deuterium -line	<1200000
190-220 nm	>2000
220-350 nm	>5000
350-500 nm	>2000
500-950 nm	>4000

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Probable causes of test failure:

Cause

VIS lamp off (failure in 350-950nm range).

UV lamp off (failure in 190-500nm range).

Old VIS lamp (failure in 350-950nm range).

Old UV lamp (failure in 190-500nm range).

Absorbing solvent or air bubble in flow cell.

Dirty or contaminated flow cell.

Dirty or contaminated optical components
(achromat, windows).

Intensity exceeds the limit (190-350 nm or
Deuterium -line) giving detector linearity problems

Intensity exceeds the limit (700-950 nm) giving
detector linearity problems

Corrective action

Switch on the VIS lamp.

Switch on the UV lamp.

Exchange the UV lamp.

Ensure the flow cell is filled with water, and free from air bubbles, or remove the flow cell.

Run the Cell Test. If the test fails, exchange the flow cell windows.

Clean optical components with alcohol and lint-free cloth.

Exchange or burn in the UV lamp

Exchange or burn in the Vis lamp