



Agilent Technologies

Innovating the HP Way

1100 Series Multiple Wavelength Detector (MWD) Intensity Test Procedure Using the Hand-Held Control Module

Troubleshooting the Detector

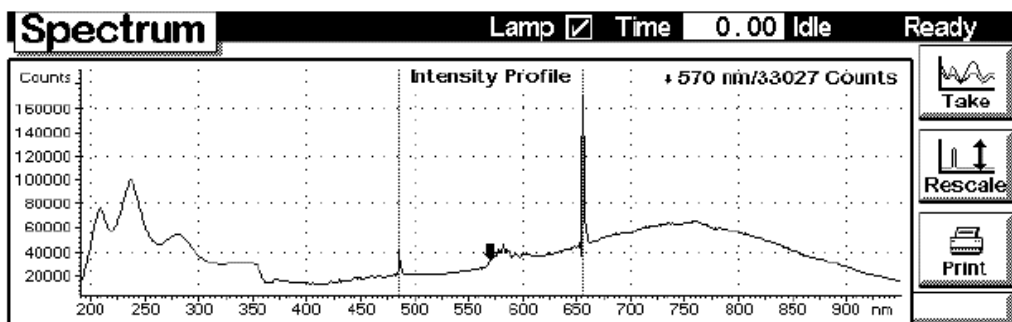
1. Select the Tests button [F3] in the System screen.
2. Select the Detector from the menu.
3. Press the Enter key.
4. Select the Intensity Test.

The selection of tests depends on the revision of the hand-held control module. For information about each test, see the *Reference Manual* for the Agilent 1100 detectors.

NOTE The full test capability is only available from the LC ChemStation.

Intensity Test

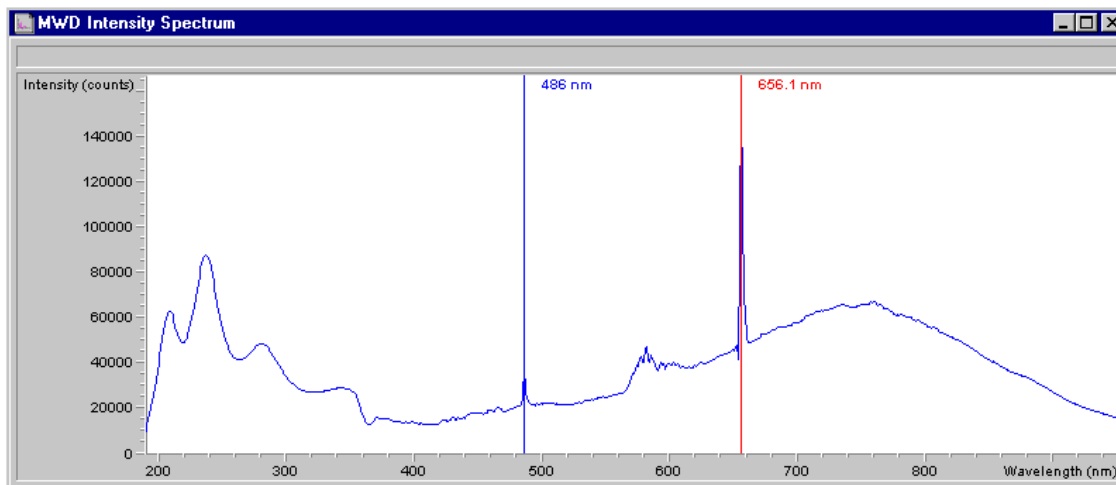
Use the F5 key (**Intensity**) to get the instrument profile (example with UV and Vis lamp on).



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Intensity Test

The intensity test measures the intensity of the deuterium and tungsten lamps over the full wavelength range (190 – 950 nm). Four spectral ranges are used to evaluate the intensity spectrum. The test is used to determine the performance of the lamps and optics (see also “Cell Test” on page 82). When the test is started, the 1-nm slit is moved into the light path automatically, and the gain is set to zero. To eliminate effects due to absorbing solvents, the test should be done with water in the flow cell. The shape of the intensity spectrum is primarily dependent on the lamp, grating, and diode array characteristics. Therefore, intensity spectra will differ slightly between instruments. Figure 23 shows a typical intensity test spectrum.

Figure 23**Intensity Test**

Intensity Test

Intensity Test Evaluation

The Agilent 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 (see Figure 24).

Figure 24

Intensity Test Results

	Limits	Measured	Result
Date: 17.03.99; Time: 10:18:43			
Accumulated UV lamp on time		331.54 h	
Lowest intensity in range 190nm - 220nm:	> 2000 cts	9380 cts	Passed
Lowest intensity in range 221nm - 350nm:	> 5000 cts	26896 cts	Passed
Lowest intensity in range 351nm - 500nm:	> 2000 cts	12527 cts	Passed
Lowest intensity in range 501nm - 950nm:	> 4000 cts	15533 cts	Passed
Highest intensity in range 190nm - 350nm:	< 450000 cts	87528 cts	Passed
Highest intensity in range 700nm - 950nm:	< 300000 cts	67118 cts	Passed
Highest intensity for the D2 alpha line:	< 1200000 cts	167023 cts	Passed

Test Failed

Probable Causes

- Absorbing solvent or air bubble in flow cell.
- Dirty or contaminated flow cell.
- Dirty or contaminated optical components (achromat, windows).

Suggested Actions

- Ensure the flow cell is filled with water, and free from air bubbles.
- Run the cell test (see “Cell Test” on page 82). If the test fails, exchange the flow cell windows.
- Clean optical components with alcohol and lint-free cloth.