

Agilent 1290 Infinity Variable Wavelength Detector

Features, Technical Details, Specifications and Ordering Details



World's most sensitive and fastest Variable Wavelength Detector

The Agilent 1290 Infinity Variable Wavelength Detector (VWD) provides time-programmable wavelength switching for optimum sensitivity and selectivity for your applications. New electronics and optics offers lowest detector noise ($\leq \pm 1.5 \mu\text{AU}$) and lowest baseline drift ($< 1 \times 10^{-4} \text{ AU/h}$) for precise quantification of trace levels. Ultra-productivity can be achieved with fastest analysis at up to 160 Hz data rates.

Features

- Highest sensitivity and lowest detection limits with lowest baseline noise and drift achieved by significant hardware improvements over the most successful predecessor 1200 VWD.
- Up to 100% resolution gain in ultra-fast LC by 160 Hz data acquisition rate. This fast data rate makes the detector also future proof for fastest separations.
- Electronic temperature control (ETC) – maximum baseline stability and practical sensitivity under fluctuating ambient temperature and humidity conditions.
- Data recovery card (DRC) and radio frequency identification (RFID) technology for flow cells and lamps – a new level of data security and traceability.
- Wide linear range – for reliable, simultaneous quantification of primary compounds, by-products and impurities.
- Automatic wavelength verification by built-in holmium oxide filter.
- Stop-flow wavelength scanning for quick wavelength optimization.
- Early maintenance feedback (EMF) for continuous tracking of instrument usage in terms of lamp burn time with user-settable limits and feedback messages.
- Extensive diagnostics, error detection and display with Instant Pilot controller and Agilent Lab Advisor software.

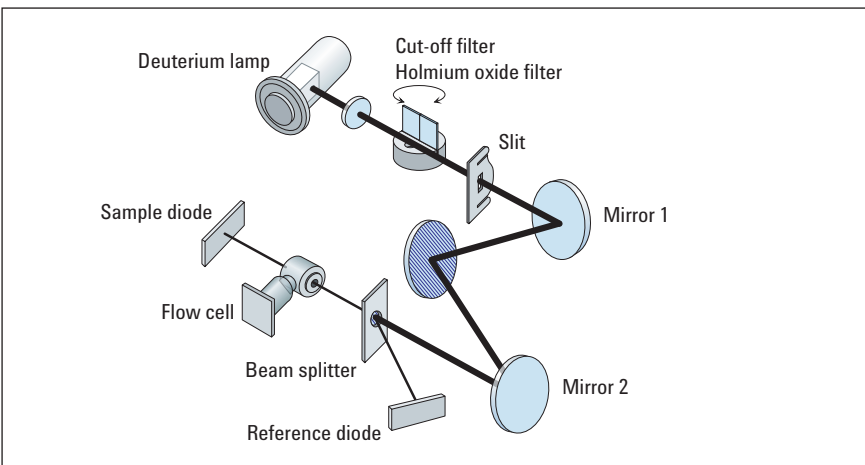


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Technical Details – Agilent 1290 Variable Wavelength Detector

Reliability and robustness

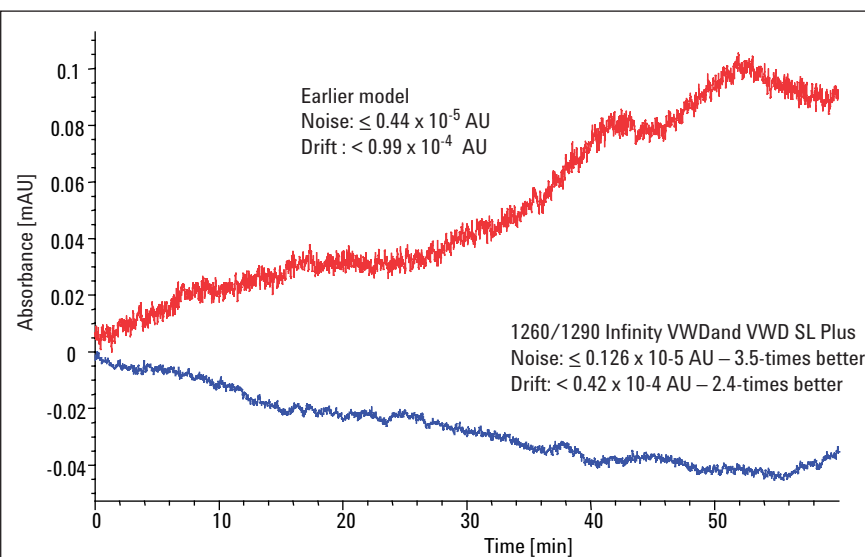
Based on the proven design of the 1200 Series VWD the the 1290 Infinity VWD includes reworked parts for significant improvements in performance. The electronic temperature control (ETC) provides maximum baseline stability and practical sensitivity under fluctuating ambient temperature and humidity conditions.



The holmium oxide filter swings into the light path to verify that the wavelength matches the set points.

Highest sensitivity and stability

The Agilent 1290 Infinity Variable Wavelength Detector achieves lowest detector noise (less than ± 1.5 μ AU) and lowest baseline drift (less than 1×10^{-4} AU/h) for precise quantification of trace levels.



Chromatographic conditions

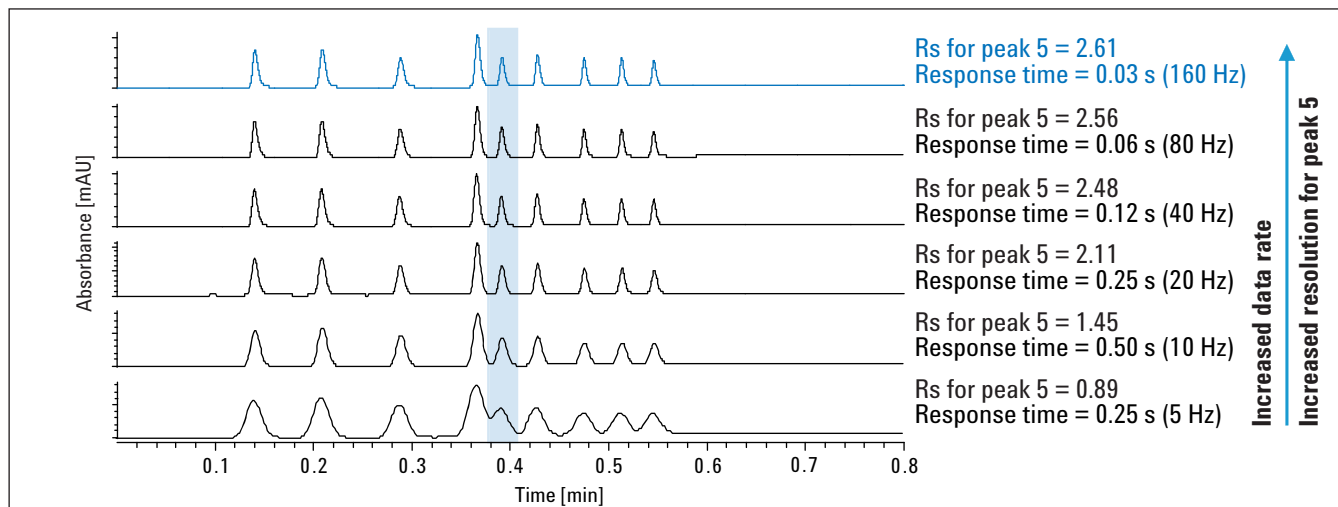
Sample: 16.668 μ g/ μ L, 50.04 μ g/3 μ L
 Column: ZORBAX SB C18, 2.1 \times 50 mm, 1.8 μ m
 Mobile phase: Water/Acetonitrile, 30/70
 Flow rate: 0.5 mL/min
 Detection: (Older model) 251 nm, peak width > 0.025 min (14 Hz),
 14 μ L flow cell volume, 10 mm path length
 (VWD/VWD SL Plus) 251 nm, peak width > 0.025 min (20 Hz),
 14 μ L flow cell volume, 10 mm path length
 Injection vol.: 3 μ L
 Column temp.: 36 $^{\circ}$ C

Comparison of noise performance of 1290 Infinity VWD with 1200 Series VWD.

Technical Details – Agilent 1290 Variable Wavelength Detector (continued)

Highest data rates for ultra-fast LC

Ultrafast LC analyses with small peak widths require fast data rates to maintain chromatographic resolution. The Agilent 1290 Infinity Variable Wavelength Detector offers time programmable single wavelength at highest sampling rates of 160 Hz, keeping pace with the analysis speed of ultrafast LC.



Using ultra-fast LC conditions with increased data rate significantly improves resolution.

New level of data security and traceability

"Data-never-lost-insurance" with built-in data recovery card (DRC) prevents data losses in the event of communication breakdowns between instrument and PC by automatically buffering raw and meta-data on an embedded memory card. Radio frequency identification (RFID) tags for all flow cells and UV lamp provide highest levels of data traceability by recording parameters, such as product and serial number, production date, cell dimensions, lamp usage, and the date of the last successful cell or lamp test.



Data recovery card offers "data-never-lost insurance" and prevents data losses by buffering raw and meta data.

Specifications – Agilent 1290 Infinity Variable Wavelength Detector

Specifications Agilent 1290 Infinity Variable Wavelength Detector (G1314E)	
Detection type	Double-beam photometer
Light source	Deuterium lamp
Number of signals	1
Maximum data rate	160 Hz
Noise	$< \pm 0.15 \times 10^{-5}$ AU, at 230 nm*
Drift	$< 1 \times 10^{-4}$ AU/hr, at 230 nm
Linearity	>2.5 AU upper limit
Wavelength range	190-600 nm
Wavelength accuracy	± 1 nm, self-calibration with deuterium lines, verification with holmium oxide filter
Slit width	6.5 nm typical over whole wavelength range
Time programmable	Wavelength, polarity, peak width, lamp on/off
Flow cells	<p>Standard: 14 μL volume, 10 mm cell path length and 40 bar (580 psi) pressure maximum</p> <p>High pressure (for SFC): 14 μL volume, 10 mm cell path length and 400 bar (5802 psi) pressure maximum</p> <p>Micro: 2 μL volume, 3 mm cell path length and 120 bar (1741 psi) pressure maximum</p> <p>Semi-micro: 5 μL volume, 6 mm cell path length and 40 bar (580 psi) pressure maximum</p>
Spectral tools	Stop-flow wavelength scan
Analog output	Recorder/Integrator 100 mV or 1 V, 1 output
Communication	LAN, Controller-area network (CAN), RS-232C, APG Remote: ready start, stop and shut-down signals
GLP	Early maintenance feedback (EMF) for continuous tracking of instrument usage in terms of lamp burn time with user settable limits and feedback messages. Electronic records of maintenance and errors. Data recovery card to prevent data losses. RFID for electronics records of flow cell and UV lamp conditions (path length, volume, product number, serial number, test passed, and usage). Verification of wavelength accuracy with built-in holmium oxide filter.
Safety and maintenance	Extensive diagnostics, error detection and display through Agilent Instant Pilot and Agilent Lab Advisor software. Leak detection, safe leak handling, leak output signal for shutdown of pumping system. Low voltages in major maintenance areas. Tracking of flow cells and lamps with RFID (radio frequency identification) tags.

*Under specified conditions

Ordering Details – Agilent 1290 Infinity Variable Wavelength Detector

Description	Product Number
Agilent 1290 Infinity Variable Wavelength Detector includes CAN cable, LAN interface with cable, must order one flow cell.	G1314E
Standard flow cell 10-mm path length and 14 μ L volume, 40 bar maximum pressure.	#018
Semi-micro flow cell 6 mm path length, cell volume of 5 μ L, 40 bar maximum pressure.	#016
Micro flow cell 3 mm path length, 2 μ L volume, 120 bar maximum pressure.	#010
High pressure flow cell (for SFC) 10-mm path length, 14 μ L volume, 400 bar maximum pressure.	#021

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