



**IET | International Equipment Trading, Ltd.**  
[www.IetLtd.com](http://www.IetLtd.com) | *Proudly serving laboratories worldwide since 1979*  
CALL +847.913.0777 for Refurbished & Certified Lab Equipment

## Agilent 1220 Infinity LC System Performance Specifications

### Agilent 1220 Infinity LC

Type	Specification
Safety features	Extensive diagnostics, error detection and display, leak detection, safe leak handling, leak output signal for shutdown of pumping system. Low voltages in major maintenance areas.
Control and data evaluation	Agilent EZChrom Compact, Agilent ChemStation, Agilent Instrument Utilities, Agilent Lab Advisor
Communications	Controller-area network (CAN), RS-232C, APG Remote: ready, start, stop and shut-down signals, LAN
GLP features	Early maintenance feedback (EMF), electronic records of maintenance and errors

### Agilent 1220 Infinity LC Pump

Type	Specification
Hydraulic system	Dual plunger in series pump with proprietary servo-controlled variable stroke drive, floating plungers and passive inlet valve
Settable flow range	0.001 – 10 mL/min, in 0.001 mL/min increments
Flow range	0.2 – 10.0 mL/min
Flow precision	$\leq 0.07$ % RSD, or $< 0.02$ min SD whatever is greater, based on retention time at constant room temperature
Flow accuracy	$\pm 1$ % or 10 $\mu$ L/min whatever is greater; degassed H <sub>2</sub> O, 80 – 100 bar, 1 mL/min, at constant ambient temperature
Pressure	Operating range 0 – 60 MPa (0 – 600 bar, 0 – 8820 psi) up to 5 mL/min Operating range 0 – 20 MPa (0 – 200 bar, 0 – 2950 psi) up to 10 mL/min
Pressure pulsation	$< 2$ % amplitude (typically $< 1.3$ %), at 1 mL/min isopropanol, at all pressures $> 1$ MPa (10 bar)
Compressibility compensation	User-selectable, based on mobile phase compressibility

Recommended pH range	1.0 – 12.5, solvents with pH < 2.3 should not contain acids which attack stainless steel
Gradient formation (optional)	Low pressure binary mixing/gradient capability using proprietary high-speed proportioning valve
Delay volume	600 – 900 µL, dependent on back pressure; measured with water at 1 mL/min (water/caffeine tracer)
Composition range	0 – 95 % or 5 – 100, user selectable
Composition precision	< 0.2 % RSD or < 0.4 min SD, whatever is greater, at 1 mL/min; based on retention time at constant room temperature

### Agilent 1220 Infinity LC Pump VL

Type	Specification
Hydraulic system	Dual plunger in series pump with proprietary servo-controlled variable stroke drive, floating plungers and passive inlet valve
Settable flow range	0.001 – 10 mL/min, in 0.001 mL/min increments
Flow range	0.2 – 10 mL/min
Flow precision	<0.07 % RSD, or < 0.02 min SD whatever is greater, based on retention time at constant room temperature
Flow accuracy	± 1 % or 10 µL/min whatever is greater
Pressure Operating range	0 – 40 MPa (0 – 400 bar, 0 – 5880 psi) up to 5 mL/min
Operating range	0 – 20 MPa (0 – 200 bar, 0 – 2950 psi) up to 10 mL/min
Pressure pulsation	< 2 % amplitude (typically < 1 %), at 1 mL/min isopropanol, at all pressures > 1 MPa (10 bar)
Compressibility compensation	User-selectable, based on mobile phase compressibility
Recommended pH range	1.0 – 12.5, solvents with pH < 2.3 should not contain acids which attack stainless steel
Gradient formation	(optional) Low pressure dual mixing/gradient capability using proprietary high-speed proportioning valve
Delay volume	800 – 1100 µL, dependent on back pressure
Composition Range	0 – 95 % or 5 – 100 %, user selectable
Composition Precision	< 0.2 % RSD, at 0.2 and 1 mL/min

### Agilent 1220 Infinity LC Autosampler

Type	Specification
Pressure Operating range	0 – 60 MPa (0 – 600 bar, 0 – 8820 psi)
Injection range	0.1 – 100 µL in 0.1 µL increments Up to 1500 µL with multiple draw (hardware modification required)
Replicate injections	1 – 99 from one vial
Precision	< 0.25 % RSD from 5 – 100 µL, < 1 % RSD 1 – 5 µL, variable volume
Minimum sample volume	1 µL from 5 µL sample in 100 µL microvial, or 1 µL from 10 µL sample in 300 µL microvial

Carryover	Typically < 0.1 %, < 0.05 % with external needle cleaning
Sample viscosity range	0.2 – 50 cp
Sample capacity	100 × 2 mL vials in 1 tray 40 × 2 mL vials in ½ tray 15 × 6 mL vials in ½ tray (Agilent vials only)
Injection cycle time	Typically 50 s depending on draw speed and injection volume

### Agilent 1220 Infinity LC Column Oven

Type	Specification
Temperature range	5 °C above ambient to 60 °C, 5 °C above ambient to 80 °C (min. FW Rev. B.06.50)
Temperature stability	± 0.15 °C, constant Composition and Flow Rate
Temperature accuracy	± 0.8 °C
Column capacity	one 25 cm column
Internal volume	6 µL

### Agilent 1220 Infinity LC VWD

Type	Specification
Detection type	Double-beam photometer
Light source	Deuterium lamp
Wavelength range	190 – 600 nm
Short term noise (ASTM)	<± 0.5·10-5AU at 254 nm
Drift	3·10-4AU/h at 254 nm
Linearity	> 2 AU (5 %) upper limit
Wavelength accuracy	± 1 nm Self-calibration with deuterium lines, verification with holmium oxide filter
Maximum data rate	80 Hz
Band width	6.5 nm typical
Flow cells	Standard: 14 µL volume, 10 mm cell path length and 40 bar (580 psi) pressure maximum High pressure: 14 µL volume, 10 mm cell path length and 400 bar (5800 psi) pressure maximum Micro: 1 µL volume, 5 mm cell path length and 40 bar (580 psi) pressure maximum Semi-micro: 5 µL volume, 6 mm cell path length and 40 bar (580 psi) pressure maximum, Can be repaired on component level
Analog outputs	Recorder/integrator: 100 mV or 1 V, output range 0.001 to 2 AU, one output
Communications	Controller-area network (CAN), RS-232C, APG Remote: ready, start, stop and shut-down signals, LAN (optional)
Safety and maintenance	Extensive diagnostics, error detection and display (through Agilent chemStation), leak detection, safe leak handling, leak output signal for shutdown of pumping system. Low voltages in major maintenance areas.

GLP features	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.
Verification of wavelength accuracy	accuracy with built-in holmium oxide filter.
Housing	All materials recyclable.
Note:	ASTM: “Standard Practice for Variable Wavelength Photometric Detectors Used in Liquid Chromatography”. Reference conditions: cell path length 10 mm, response time 2 s, flow 1 mL/min LC-grade methanol. Linearity measured with caffeine at 272 nm.

### Agilent 1220 Infinity LC DAD

Type	Specification
Detection type	1024-element diode array
Light source	Deuterium and tungsten lamps. The UV-lamp is equipped with RFID tag that holds lamp typical information.
Number of signals	8
Maximum sampling rate	80 Hz
Short term noise (ASTM) Single and Multi-Wavelength	< ± 0.7·10 <sup>-5</sup> AU at 254/4 nm and 750 nm, TC 2 s
Drift	< 0.9·10 <sup>-3</sup> AU/h at 254 nm
Linear absorbance range	> 2 AU (5 %) at 265 nm
Wavelength range	190 – 950 nm
Wavelength accuracy	± 1 nm Self-calibration with deuterium lines, verification with holmium oxide filter
Slit width	1, 2, 4, 8, 16 nm Programmable slit
Diode width	< 1 nm
Flow cell	Standard: 13 µL volume, 10 mm cell path length and 120 bar (1740 psi) pressure maximum. The flow cell is equipped with RFID tags that hold cell typical information.
pH range	1.0—9.5
Time programmable	Wavelength, polarity, peak width, lamp bandwidth, autobalance, wavelength range, threshold, spectra storage mode

#### Specification Conditions:

ASTM: “Standard Practice for Variable Wavelength Photometric Detectors Used in Liquid Chromatography”.

Reference conditions: Standard flow cell, path length 10 nm, flow 1 mL/min LC- grade methanol.

Noise: <± 0.5·10<sup>-5</sup> AU at 254 nm, TC 2 s, ASTM RT = 2.2 \* TC

Linearity: Linearity is measured with caffeine at 265 nm.

ASTM drift tests require a temperature change below 2 °C/hour (3.6 F/hour) over one hour period. Our published drift specification is based on these conditions. Larger ambient temperature changes will result in

larger drift. Better drift performance depends on better control of the temperature fluctuations. To realize the highest performance, minimize the frequency and the amplitude of the temperature changes to below 1 °C/hour (1.8 F/hour). Turbulences around one minute or less can be ignored.

Performance tests should be done with a completely warmed up optical unit (> two hours). ASTM measurements require that the detector should be turned on at least 24 hours before start of testing.

### Time Constant versus Response Time

According to ASTM E1657- 98 Standard Practice of Testing: Variable- Wavelength Photometric Detectors Used in Liquid Chromatography” the time constant is converted to response time by multiplying by the factor 2.2.

### Physical Specifications

Type	Specification
Weight G4294B: 43 kg (94 lbs)	30 kg (66 lbs),
Dimensions (height × width × depth)	640 × 370 × 420 mm (25.2 × 14.6 × 16.5 inches), G4294B: 640 × 370 × 485 mm (25.2 × 14.6 × 19.1 inches)
Line voltage	100 – 240 VAC, ± 10 % Wide-ranging capability
Line frequency	50 or 60 Hz, ± 5 %
Power consumption	240 VA / 210 W / 717 BTU Maximum
Ambient operating Temperature	4–55 °C (39–131 °F)
Ambient non-operating Temperature	-40 – 70 °C (-40 – 158 °F)
Humidity	< 95 % r.h. at 40 °C (104 °F) Non-condensing
Operating altitude	Up to 2000 m (6562 ft)
Non-operating altitude	Up to 4600 m (15091 ft) For storing the module
Safety standards:	IEC, CSA, UL
Installation category	II, Pollution degree 2 For indoor use only

WWW.IETLTD.COM



**IET | International Equipment Trading Ltd.**

[www.IetLtd.com](http://www.IetLtd.com) | Proudly serving laboratories worldwide since 1979

CALL +847.913.0777 for Refurbished & Certified Lab Equipment

**IET - Used Lab Equipment - Refurbished Analytical Laboratory Instruments**