



# Agilent 1290 Infinity Binary Pump

## Features, Specifications and Ordering Details



### Widest Power Range for Infinitely Better Performance and Flexibility

The 1290 Infinity Binary Pump delivers the industry's widest analytical power range for ultimate chromatographic performance and flexibility. Lowest delay volumes allow you to run ultra fast gradients for narrow-bore applications. Active damping combines innovative pump engineering with tuning algorithms embedded in the firmware for significantly reduced ripples and associated UV noise. Background noise is reduced further by the Agilent Jet Weaver mixer, which is based on multi-layer technology. New ceramic piston material with superior thermal behavior provides robust and reliable performance even at ultra high pressures. An integrated high efficiency degasser and automatic purge valve offer convenient system operation.

### Features

- Infinite power range that combines ultra high pressure up to 1200 bar and high flow rates up to 5 mL/min for maximum chromatographic performance, compatibility, flexibility and investment protection.
- Lowest delay volumes of 10  $\mu$ L when running ultra fast gradients on narrow-bore columns makes this pump the perfect front-end for LC/MS applications.
- Active damping with independently controllable high resolution pump drives and firmware-embedded tuning algorithms significantly reduce ripples and associated UV noise.
- New Agilent Jet Weaver mixer, based on multi-layer technology, facilitates highest efficiency mixing in combination with lowest delay volume for highest UV-detector sensitivity.
- New ceramic piston material with superior thermal behavior provides robust and reliable performance even at ultra high pressures.
- Automatic compensation for minor leaks, resulting in higher instrument uptime.
- Smooth-motion control makes the best performing binary pump also the quietest.
- Integrated, high efficiency degasser with low internal volume is based on Teflon AF technology and offers fast change-over of solvents for purging and priming the pump.



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## Specifications – Agilent 1290 Infinity Binary Pump

Specifications Agilent 1290 Infinity Binary Pump (G4220A) and VL version (G4220B)	
<b>Hydraulic system</b>	Two dual pistons in series, pumps with proprietary servo-controlled variable stroke design and smooth motion control.
<b>Pump resolution step size</b>	300 pl step size
<b>Settable flow range</b>	0.001 – 5 mL/min, in 0.001 mL/min increments (- executed in 300 pl/step increments).
<b>Flow precision</b>	≤0.07 % RSD or 0.005 min SD, whatever is greater (0.2 - 5.0 mL/min); based on retention time at constant room temperature.
<b>Flow accuracy</b>	±1% or 10 µL/min, whatever is greater; pumping degassed H <sub>2</sub> O at 10MPa (100 bar).
<b>Pressure operating range</b>	1290 Infinity Binary Pump: Operating range up to 120 MPa (1200 bar) up to 2 mL/min, 80 MPa (800 bar) at 5 mL/min 1290 Infinity Binary Pump VL: Operating range up to 105 MPa (1050 bar) up to 2 mL/min
<b>Pressure pulsation</b>	< 1 % amplitude or < 0.5 MPa (5 bar), whatever is greater; at 1 mL/min water.
<b>Compressibility compensation</b>	Automatic, pre-defined, based on mobile phase selection.
<b>Recommended pH-range</b>	1.0 – 12.5, solvents with pH < 2.3 should not contain acid which attack stainless steel.
<b>Gradient formation</b>	High pressure binary mixing.
<b>Delay volume</b>	JetWeaver V35: < 45 µL JetWeaver V100: < 75 µL  <i>Note: JetWeaver generally recommended. For applications requiring lowest delay volumes, JetWeaver can be removed out of the flow path. Delay volume is then solely determined by the volume of the connection capillary.</i>
<b>Composition range</b>	Settable range: 0 - 100 % Recommended range: 1 - 99 % or 5 µL/min per channel, whatever is greater.
<b>Composition precision</b>	< 0.15 % RSD or 0.01 min SD, whatever is greater (0.2 - 5 mL/min); based on retention time at constant room temperature.
<b>Composition accuracy</b>	±0.35 % absolute (5 - 95 %, 0.2 - 5.0 mL/min, water/caffeine tracer).
<b>Solvent selection valve</b>	Default
<b>Integrated degassing unit</b>	Number of channels: 2 Internal volume per channel: 1.5 mL Materials in contact with solvent: TFE/PDD Copolymer, FEP, PEEK, PPS.
<b>Control</b>	Agilent ChemStation for LC (B.04.02 or above) EZChrom Elite (3.3.2 SP1 or above) OpenLAB (3.3.2 SP3) Masshunter (B.02.01 SP1 or above)
<b>Local control</b>	Agilent Instant Pilot (G4208A) (B.02.08 or above).
<b>Communications</b>	Controller-area network (CAN), RS232C, APG remote: ready, start, stop and shutdown signals, LAN.
<b>Safety and maintenance</b>	Extensive diagnostics, error detection and display through Agilent LabAdvisor, leak detection, safe leak handling, leak output signal for shutdown of the pumping system. Low voltage in major maintenance areas.
<b>GLP features</b>	Early maintenance feedback (EMF) for continuous tracking of instrument usage in terms of seal wear and volume of pumped mobile phase with pre-defined and user settable limits and feedback messages. Electronic records of maintenance and errors.
<b>Housing</b>	All materials are recyclable.

## Ordering Details – Agilent 1290 Infinity Binary Pump

Description	Product Number
<b>Agilent 1290 Infinity Binary Pump.</b> Maximum. pressure 1200 bar	G4220A
HPLC Tool Kit	G4220A#001
Delete Agilent Lab Advisor	G4220A #950
Active seal wash option	G4220A B#030
<b>Agilent 1290 Infinity Binary Pump VL.</b> Maximum. pressure 1050 bar	G4220B
HPLC Tool Kit	G4220B #001
Delete Agilent Lab Advisor	G4220B #950
Active seal wash option	G4220B#030
Active seal wash (field upgrade)	G1399A

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