



# Agilent 1290 Infinity Quaternary Pump

Binary pump-like performance with quaternary-pump flexibility

## Data Sheet

### Introduction



The Agilent 1290 Infinity Quaternary Pump is the only pump combining the ultimate performance of a binary high-pressure mixing UHPLC pump with the flexibility of a low-pressure quaternary pump. The power range with a maximum pressure of 1200 bar and a flow rate up to 5 mL/min allows you to run any HPLC and UHPLC method. The Agilent Inlet Weaver guarantees highest mixing efficiency before the mobile phase enters the pump head. Active damping combines innovative pump engineering with tuning algorithms embedded in the firmware for reduced ripples and associated UV noise. Additional mixing capacity can be achieved with the optional Agilent V380 Jet Weaver. A multipurpose valve adds useful functionalities, e.g. mixer in/out switch, filter back flush or automatic purge. BlendAssist software simplifies your workflow with accurate buffer/additive blending.

### Key benefits

- Binary pump-like performance in terms of accuracy and precision for flow and composition
- Infinite power range combining ultrahigh pressure up to 1200 bar and high analytical flow rates up to 5 mL/min for maximum chromatographic performance
- Integrated high efficiency degasser with low internal volume offers fast change-over of solvents for purging and priming the pump
- Highest solvent mixing efficiency before reaching the pump head due to the new Inlet Weaver, based on established multilayer mixing technology
- Active damping with independently controllable high resolution pump drives and firmware-embedded tuning algorithms significantly reduce ripples and associated UV noise, switchable V380 Jet Weaver for extra mixing volume
- Multipurpose valve enables automatic software-embedded functionalities like switching the optional mixer in and out, flushing back the inline filter or automatic purging
- Convenient, precise and accurate buffer/additive blending using the new software feature BlendAssist, implemented in the pump driver



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## Specifications

Features	Description
<b>Hydraulic system</b>	Dual pistons in series pump with proprietary servo-controlled variable stroke design and smooth motion control for active damping.
<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 0.01 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 10 MPa (100 bar)
<b>Maximum operating pressure</b>	Operating range up to 120 MPa (1200 bar) up to 2 mL/min, ramping down to 80 MPa (800 bar) up to 5 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>Gradient formation</b>	Low pressure quaternary mixing
<b>Delay volume</b>	Standard configuration: < 350 µL With optional V380 Jet Weaver Mixer: < 500 µL
<b>Composition range</b>	Settable range: 0.0 – 100.0 % Recommended range: 1.0 – 99.0 % or 5 µL/min
<b>Composition precision</b>	< 0.15 % RSD, or 0.02 min SD whatever is greater (1 mL/min); based on retention time at constant room temperature
<b>Composition accuracy</b>	±0.4 % absolute (1 - 99 % B, 0.5 - 2.0 mL/min with water/caffeine tracer, 400 bar)
<b>Integrated degassing unit</b>	Number of channels: 4 Internal volume per channel: 1.5 mL
<b>Materials in contact with solvent</b>	TFE/PDD copolymer, FEP, PEEK, PPS, stainless steel, polyimide
<b>Control</b>	Agilent OpenLAB CDS ChemStation C.01.04 or above Agilent OpenLAB CDS EZChrom A.04.04 or above Agilent MassHunter B05.01 or above Agilent Instrument Control Framework ICF A.01.05 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

Description	Part Number
<b>Agilent 1290 Infinity Quaternary Pump</b>	G4204A
<b>Agilent Lab Advisor Advanced Software</b>	G4204A#004
<b>Active Seal Wash Option</b>	G4204A#030
<b>Switchable Jet Weaver Mixer Upgrade Kit</b>	G4204A#070

[www.agilent.com/chem/1290QuatPump](http://www.agilent.com/chem/1290QuatPump)

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