

Agilent 1260 Infinity II Binary Pump (G7112B)

Physical Specifications

Table 11 Physical Specifications

Type	Specification	Comments
Weight	17.6 kg (38.8 lbs)	
Dimensions (height × width × depth)	180 x 396 x 436 mm (7.1 x 15.6 x 17.2 inches)	
Line voltage	100 – 240 V~, ± 10 %	Wide-ranging capability
Line frequency	50 or 60 Hz, ± 5 %	
Power consumption	90 VA / 74 W	
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 3000 m (9842 ft)	
Non-operating altitude	Up to 4600 m (15092 ft)	For storing the module
Safety standards: IEC, EN, CSA, UL	Installation category II, Pollution degree 2	For indoor use only.
ISM Classification	ISM Group 1 Class B	According to CISPR 11

Performance Specifications

Table 12 Performance Specifications 1260 Infinity II Binary Pump (G7112B)

Type	Specification
Hydraulic system	Two dual piston in series pumps with servo-controlled variable stroke drive, power transmission by gears and ball screws, floating pistons
Flow range	settable: 0.001 – 5 mL/min recommended: 0.05 – 5.0 mL/min
Flow precision	≤0.07 % RSD or < 0.02 min SD, whichever is greater
Flow accuracy	± 1 % or 10 µL/min, whichever is greater
Pressure operating range	Up to 60 MPa (600 bar, 8702 psi) up to 5 mL/min
Pressure pulsation	< 2 % amplitude (typically < 1.3 %), or < 0.3 MPa (3 bar, 44 psi), whichever is greater <i>Low delay volume configuration:</i> < 5 % amplitude (typically < 2 %)
Compressibility compensation	Pre-defined, based on mobile phase compressibility
Recommended pH range	1.0 – 12.5
Gradient formation	High-pressure binary mixing
Delay volume	<i>Standard delay volume configuration:</i> 600 – 900 µL, (includes 400 µL mixer), dependent on back pressure <i>Low delay volume configuration:</i> 120 µL
Composition range	settable: 0 – 100 % recommended: 1 – 99 % or 5 µL/min per channel, whichever is greater
Composition precision	< 0.15 % RSD or < 0.04 min SD, whichever is greater
Composition accuracy	± 0.35 % absolute
Integrated degassing unit	Number of channels: 2 Internal volume per channel: 1.5 mL
Instrument Control	Agilent control software with LC and CE Drivers A.02.14 or above Lab Advisor B.02.09 or above Agilent Instant Pilot (G4208A) with firmware B.02.20 or above Instrument Control Framework (ICF) A.02.04 or above

1 Pumps

Agilent 1260 Infinity II Binary Pump (G7112B)

Table 12 Performance Specifications 1260 Infinity II Binary Pump (G7112B)

Type	Specification
Communications	Controller-area network (CAN), Extended Remote Interface (ERI), Local Area Network (LAN)
Safety and maintenance	Extensive diagnostics, error detection and display through Agilent Lab Advisor, leak detection, safe leak handling, leak output signal for shutdown of the pumping system. Low voltage in major maintenance areas.
GLP features	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.
Housing	All materials are recyclable

Agilent 1260 Infinity II Vialsampler (G7129A)

Physical Specifications

Table 45 Physical Specifications

Type	Specification	Comments
Weight	19 kg (41.9 lbs)	w/o Thermostat
Dimensions (height × width × depth)	320 x 396 x 468 mm (12.8 x 15.6 x 18.4 inches)	
Line voltage	100 – 240 V~, ± 10 %	Wide-ranging capability
Line frequency	50 or 60 Hz, ± 5 %	
Power consumption	350 VA / 350 W / 1195 BTU/h	
Ambient operating temperature	4 - 40 °C (39 - 104 °F), without chiller up to 55 °C (131 °F)	
Ambient non-operating temperature	-40 – 70 °C (-40 – 158 °F)	
Humidity	< 95 % r.h. at 40 °C (104 °F) ¹	Non-condensing
Operating altitude	Up to 3000 m (9842 ft)	
Non-operating altitude	Up to 4600 m (15092 ft)	For storing the module
Safety standards: IEC, EN, CSA, UL	Installation category II, Pollution degree 2	For indoor use only.
ISM Classification	ISM Group 1 Class B	According to CISPR 11
Permitted solvents	Auto-ignition temperature ≥200 °C Boiling point ≥56 °C	

¹ If a sample cooler or thermostat is included the upper value for humidity can be reduced. Please check your lab conditions to stay beyond dew point values for non-condensing operation.

Performance Specifications

Table 46 Performance Specifications 1260 Infinity II Vialsampler (G7129A)

Type	Specification
Injection range	0.1 – 100 μ L in 0.1 μ L increments with 100 μ L up to 60 MPa 0.1 – 900 μ L in 0.1 μ L increments with 900 μ L up to 40 MPa
Precision	<0.25 % RSD of peak areas from 5 μ L to 100 μ L
Pressure range	0 – 60 MPa (0 – 600 bar, 0 – 8702 psi) 0 – 40 MPa (0 – 400 bar, 0 – 5801 psi)
Sample viscosity range	0.2 – 5 cp
Sample capacity	132 x 2 mL vial (two trays default) 100 x 2 mL vial (two classic trays optional) 36 x 6 mL vials (two trays optional)
Carry over	<0.004 % (40 ppm) with needle wash
Injection cycle time	18 s for draw speed 200 μ L/min Ejection speed: 200 μ L/min Injection volume: 1 μ L
Minimum sample volume	1 μ L from 5 μ L sample in 100 μ L microvial, or 1 μ L from 10 μ L sample in 300 μ L microvial.
Instrument Control	Lab Advisor B.02.07 or above LC and CE Drivers A.02.12 or above
Local control	Agilent Instant Pilot (G4208A)
Communications	Controller-area network (CAN), Local Area Network (LAN) ERI: ready, start, stop and shut-down signals
Safety and maintenance	Extensive support for troubleshooting and maintenance is provided by the Instant Pilot, Agilent Lab Advisor, and the Chromatography Data System. Safety-related features are leak detection, safe leak handling, leak output signal for shutdown of pumping system, and low voltages in major maintenance areas.
GLP features	Early maintenance feedback (EMF) for continuous tracking of instrument usage with user-settable limits and feedback messages. Electronic records of maintenance and errors.
Housing	All materials recyclable.
Metering device	Metering device in high pressure flow path

Physical Specifications of the Sample Cooler

Cooling unit is designed as vapor-compression refrigeration system. Contains fluorinated greenhouse gas (refrigerant) according to the Kyoto protocol. For specifications of refrigerant, charge capacity, carbon dioxide equivalent (CDE), and global warming potential (GWP) see instrument label.

Table 47 Physical Specification of the Sample Cooler

Type	Specification	Comments
Weight	< 6 kg	
Dimensions (height × width × depth)	205 mm x 340 mm x 370 mm	
Refrigerant gas	HFC-134a (0.042 kg)	Ozone depletion potential (ODP) = 0
Supply voltage	24 VDC (nominal)	
Current	10 A max.	
Ambient operating temperature	4 – 40 °C (39.2 – 104 °F)	
Ambient non-operating temperature	-40 – 70 °C (-20 – 158 °F)	
Humidity	< 95 % r.h. at 40 °C (104 °F)	Non-condensing
Operating altitude	Up to 3000 m (9842 ft)	
Non-operating altitude	Up to 4600 m (15091 ft)	
Safety standards: IEC, EN, CSA, UL	Installation category II, Pollution degree 2	For indoor use only.
ISM Classification	ISM Group 1 Class B	According to CISPR 11

2 Injectors

Agilent 1260 Infinity II Vialsampler (G7129A)

Table 48 Performance Specifications Agilent 1290 Sample Cooler

Type	Specifications
Operating principle	High performance, low-energy consumption micro-compressor based cooler with ozone-friendly HFC-134a coolant (42 g), user-upgradable.
Temperature range	from 4 °C to 5 °C below ambient
Temperature settable	from 4 – 40 °C in 1 ° increments
Temperature accuracy (<25 °C, <50 % r.H.)	2 °C to 6 °C at a setpoint of 4 °C

Specifications of the Sample Thermostat

The sample thermostat is designed as a combination of a heater and vapor-compression refrigeration system. It uses non-Freon refrigerant (isobutane). This material is harmless to the environment and does not affect the ozone layer and global warming but it is combustible. Please adhere to the warnings listed in the manual.

Table 49 Physical Specifications of the Sample Thermostat

Type	Specification	Comment
Weight	<6 kg	
Dimensions (height x width x depth)	205 mm x 340 mm x 370 mm	
Refrigerant gas	R600a (0.030 kg)	Ozone depletion potential (ODP) =0 Global warming potential (GWP) =3
Supply voltage	24VDC (nominal)	
Current	10 A max.	
Ambient operating temperature	4 – 40 °C (39.2 – 104 °F)	
Ambient non-operating temperature	-40 – 70 °C (-20 – 158 °F)	
Humidity	< 95 % r.h. at 40 °C (104 °F)	Non-condensing
Operating altitude	Up to 3000 m (9842 ft)	
Non-operating altitude	Up to 4600 m (15091 ft)	
Safety standards: IEC, EN, CSA, UL	Installation category II, Pollution degree 2	For indoor use only
ISM Classification	ISM Group 1 Class B	According to CISPR 11

2 Injectors

Agilent 1260 Infinity II Vialsampler (G7129A)

Table 50 Performance Specifications for the Sample Thermostat

Type	Specifications
Operating principle	High performance, low-energy consumption micro-compressor based cooler with natural R600a coolant (Butane 30 g), user-upgradable
Temperature range	from 4 – 40 °C
Temperature settable	from 4 – 40 °C in 1 ° increments
Temperature accuracy (<25 °C, <50 % r.H.)	2 – 6 °C at a setpoint of 4 °C

NOTE

Minimum firmware revision for the sample thermostat is D.07.22.

Minimum LC driver revision for the sample thermostat is A.02.14.

Agilent 1260 Infinity II Variable Wavelength Detector (G7114A)

Physical Specifications

Table 79 Physical Specifications

Type	Specification	Comments
Weight	11 kg (24.3 lbs)	
Dimensions (height × width × depth)	140 x 396 x 436 mm (5.5 x 15.6 x 17.0 inches)	
Line voltage	100 – 240 V~, ± 10 %	Wide-ranging capability
Line frequency	50 or 60 Hz, ± 5 %	
Power consumption	80 VA, 70 W	
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 3000 m (9842 ft)	
Non-operating altitude	Up to 4600 m (15092 ft)	For storing the module
Safety standards: IEC, EN, CSA, UL	Installation category II, Pollution degree 2	For indoor use only.
ISM Classification	ISM Group 1 Class B	According to CISPR 11

Performance Specifications

Table 80 Performance Specifications 1260 Infinity II Variable Wavelength Detector (G7114A)

Feature	Specification
Detection type	Double-beam photometer
Light source	Deuterium lamp
Number of signals	Single and dual wavelength detection
Maximum data rate	120 Hz (single wavelength detection) 2.5 Hz (dual wavelength detection)
Noise	< $\pm 0.25 \cdot 10^{-5}$ AU, at 230 nm (single wavelength detection) < $\pm 0.80 \cdot 10^{-5}$ AU, at 230 nm and 254 nm (dual wavelength detection)
Drift	< $1 \cdot 10^{-4}$ AU/h, 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
Wavelength precision	< ± 0.1 nm
Slit width	6.5 nm typical over whole wavelength range
Time programmable	Wavelength, polarity, peak width, lamp on/off

Table 80 Performance Specifications 1260 Infinity II Variable Wavelength Detector (G7114A)

Feature	Specification
Flow cells	<p><i>Standard:</i> 14 μL volume, 10 mm cell path length and 40 bar (588 psi) pressure maximum</p> <p><i>Micro:</i> 2 μL volume, 3 mm cell path length and 120 bar (1760 psi) pressure maximum</p> <p><i>Semi-micro:</i> 5 μL volume, 6 mm cell path length and 40 bar (588 psi) pressure maximum</p> <p><i>Preparative:</i> 4 μL volume, 3 mm cell path length and 120 bar (1760 psi) pressure maximum</p> <p><i>Preparative:</i> 0.3 mm cell path length and 50 bar (725 psi) pressure maximum</p> <p><i>Preparative:</i> 0.06 mm cell path length and 50 bar (725 psi) pressure maximum</p> <p><i>High pressure:</i> 14 μL volume, 10 mm cell path length and 400 bar (5801 psi) pressure maximum</p>
Spectral tools	Stop-flow wavelength scan
Analog output	Recorder/Integrator 100 mV or 1 V, 1 output
Instrument Control	<p>Lab Advisor B.02.08 or above</p> <p>LC and CE Drivers A.02.14 or above</p> <p>For details about supported software versions refer to the compatibility matrix of your version of the LC and CE Drivers</p>
Local Control	Agilent Instant Pilot (G4208A) B.02.19 or above
Communication	<p>Controller-area network (CAN), USB</p> <p>ERI: ready, start, stop and shut-down signals</p>
GLP	<p>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. 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.</p>
Safety and maintenance	<p>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</p>

Agilent 1260 Infinity II Multicolumn Thermostat (G7116A)

Physical Specifications

Table 109 Physical Specifications

Type	Specification	Comments
Weight	12.5 kg (27.6 lbs)	
Dimensions (height × width × depth)	160 x 435 x 436 mm (6.3 x 17.1 x 17.2 inches), Width with column identification kit: 460 mm	
Line voltage	100 – 240 V~, ± 10 %	Wide-ranging capability
Line frequency	50 or 60 Hz, ± 5 %	
Power consumption	150 VA, 150 W	
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 3000 m (9842 ft)	
Non-operating altitude	Up to 4600 m (15092 ft)	For storing the module
Safety standards: IEC, EN, CSA, UL	Installation category II, Pollution degree 2	For indoor use only.
ISM Classification	ISM Group 1 Class B	According to CISPR 11

Performance Specifications

Table 110 Performance Specifications 1260 Infinity II Multicolumn Thermostat (G7116A)

Feature	Specification¹
Operating principle	Thermostatted column compartment with dual, independent Peltier-element. Solvent pre-heating and still-air operation for reduction of chromatographic band-broadening under UHPLC-conditions.
Temperature range	10 °C below ambient (minimum 4 °C) to 85 °C settable in steps of 0.1 K
Temperature stability	±0.1 °C
Temperature accuracy	±0.5 °C (with calibration for 40 °C)
Temperature precision	0.05 °C
Independent Temperature zones	2 in single device
Column capacity	4 columns of up to 300 mm length plus InfinityLab Quick-Connect fittings or pre-column The number of precolumn Quick-Connect Heat Exchangers is scalable - each column can be equipped with individual heat exchanger for best performance 4-column selector valve is available to access each column without replumbing
Heat-up/cool-down time	5 min from ambient to 40 °C 10 min from 40 °C to 20 °C <25 min from 25 °C to 85 °C
Solvent heat exchangers	For pre-column solvent heating, G7116A is equipped with a Quick-Connect Heat Exchanger Large ID (0.17 mm capillary, 3 µL internal volume) as default. Other dimensions of Quick-Connect Heat Exchangers are optionally available, as well as heat exchangers made from bio-inert materials (metal-free).

Table 110 Performance Specifications 1260 Infinity II Multicolumn Thermostat (G7116A)

Feature	Specification ¹
Valve options	1 x integrated valve drive as option to host user-exchangeable Quick-Change valve heads (up to 800 bar) of different formats: 2-position/6-port, 2-position/10-port, 4-column selection. Also available in bio-inert materials. Valve heads are automatically identified by their tag.
Column identification	Optionally, column identification kit to track history of up to four columns. Mounted left hand-side of module.
Instrument Control	LC and CE Drivers A.02.14 or above Instrument Control Framework (ICF) A.02.04 or above Agilent Instant Pilot (G4208A) B.02.20 or above InfinityLab LC Companion (G7108A) Lab Advisor B.02.08 or above For details about supported software versions refer to the compatibility matrix of your version of the LC & CE Drivers
Communications	G7116A is a hosted module. (The LC stack needs to contain suitable host module or a LAN card for communication and control).
Maintenance and safety-related features	Extensive diagnostics, error detection and display with Agilent LabAdvisor software. Leak detection, safe leak handling, leak output signal for shutdown of pumping system, low voltages in major maintenance areas.
GLP features	Valve heads carrying tags with serial number, pressure rating, number of switches and valve type. Concept of column identification.
Housing	All materials recyclable.

¹ All specifications are valid for distilled water at ambient temperature (25 °C), set point at 40 °C and a stable flow range from 0.2 - 5 mL/min. Equilibration Time: 10 min.