

Agilent 1260 Infinity II Quaternary Pump (G7111B)

Physical Specifications

Table 7 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	80 VA, 65 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 8 Performance Specifications 1260 Infinity II Quaternary Pump (G7111B)

Type	Specification
Hydraulic system	Dual piston in series pump with servo-controlled variable stroke drive, power transmission by gears and ball screws, floating pistons
Settable flow range	Set points 0.001 – 10 mL/min, in 0.001 mL/min increments
Recommended flow range	0.2 – 10.0 mL/min
Flow precision	≤0.07 % RSD, or ≤0.02 min SD whatever is greater
Flow accuracy	± 1 % or 10 µL/min whatever is greater, pumping degassed H ₂ O at 10 MPa (100 bar)
Pressure operating range	Operating range up to 60 MPa (600 bar, 8700 psi) up to 5 mL/min Operating range up to 20 MPa (200 bar, 2950 psi) up to 10 mL/min
Pressure pulsation	< 2 % amplitude (typically < 1.0 %), or < 0.3 MPa (3 bar, 44 psi), whatever is greater, at 1 mL/min isopropanol, at all pressures > 1 MPa (10 bar, 145 psi)
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	Low pressure quaternary 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)
Settable composition range	0 – 100 % in 0.1 % increments
Composition precision	< 0.2 % RSD or < 0.04 min SD, whatever is greater
Integrated degassing unit	Number of channels: 4 Internal volume per channel: 1.5 mL

1 Pumps

Agilent 1260 Infinity II Quaternary Pump (G7111B)

Table 8 Performance Specifications 1260 Infinity II Quaternary Pump (G7111B)

Type	Specification
Instrument Control	Lab Advisor B.02.08 or above LC and CE Drivers A.02.14 or above For details about supported software versions refer to the compatibility matrix of your version of the LC and CE Drivers
Local Control	Agilent Instant Pilot (G4208A) B.02.20 or above
Communications	Controller-area network (CAN), Enhanced Remote Interface: ready, start, stop and shut-down signals, LAN onboard
Safety and maintenance	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.
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 μL in 0.1 μL increments with 100 μL up to 60 MPa 0.1 – 900 μL in 0.1 μL increments with 900 μL up to 40 MPa
Precision	<0.25 % RSD of peak areas from 5 μL to 100 μL
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 $\mu\text{L}/\text{min}$ Ejection speed: 200 $\mu\text{L}/\text{min}$ Injection volume: 1 μL
Minimum sample volume	1 μL from 5 μL sample in 100 μL microvial, or 1 μL from 10 μL sample in 300 μL 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 1290 Infinity II DAD (G7117B)

Physical Specifications

Table 83 Physical Specifications

Type	Specification	Comments
Weight	11.5 kg (25.4 lbs)	
Dimensions (height × width × depth)	140 x 396 x 436 mm (5.5 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	110 VA, 100 W	
Ambient operating temperature	4 – 40 °C (39 – 104 °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 84 Agilent 1290 Infinity II Diode Array Detector (G7117B) Performance Specifications

Feature	Specification
Detector type	1024-element diode array
Light source	Deuterium
Number of signals	8
Maximum sampling rate	240 Hz (both spectra and signals)
Short-term noise	with 10 mm Max-Light cartridge cell: $<\pm 3 \cdot 10^{-6}$ AU at 230/4 nm, slit width 4 nm, TC 2 s, ASTM with 60 mm Max-Light cartridge cell: $<\pm 0.6 \cdot 10^{-6}$ AU/cm at 230/4 nm, slit width 4 nm, TC 2 s, ASTM
Drift	$<0.5 \cdot 10^{-3}$ AU/h at 230 nm
Linearity	>2.0 AU (5 %) at 265 nm Typically 2.5 AU (5 %)
Wavelength range	190 – 640 nm
Wavelength accuracy	± 1 nm, self-calibration with deuterium lines
Wavelength precision	$<\pm 0.1$ nm
Slit width	Programmable: 1, 2, 4, 8 nm
Diode width	~ 0.5 nm
Wavelength bunching	Programmable, 2 – 400 nm, in steps of 1 nm
Spectral tools	Data analysis software for spectra evaluation, including spectral libraries and peak purity functions

Table 84 Agilent 1290 Infinity II Diode Array Detector (G7117B) Performance Specifications

Feature	Specification
Flow cells	User-exchangeable, self-aligning cartridge cells with RFID tags. Max-Light Cartridge Cell (Standard): 10 mm, $\sigma_V = 1.0 \mu\text{L}$ Max-Light Cartridge Cell (High Sensitivity): 60 mm, $\sigma_V = 4 \mu\text{L}$ Max-Light Cartridge Ultra Low Dispersion (ULD) Cell: 10 mm, $\sigma_V = 0.6 \mu\text{L}$ Max-Light Cartridge High Dynamic Range (HDR) Cell: 3.7 mm, $\sigma_V = 0.8 \mu\text{L}$ Maximum Operating Pressure (MOP) ¹ : 70 bar Maximum Incidental Pressure (MIP) ² : 150 bar
Analog output	Recorder/integrator: 100 mV or 1 V, output range 0.001 – 2 AU, one output
Instrument Control	Lab Advisor B.02.06 or above LC and CE Drivers A.02.11 or above For details about supported software versions refer to the compatibility matrix of your version of the LC and CE Drivers
Local Control	Agilent Instant Pilot (G4208A) B.02.19 or above
Communications	LAN, controller-area network (CAN), ERI: ready, start, stop and shut-down signals, USB
GLP features	RFID for electronics records of flow cell and UV lamp conditions (path length, volume, product number, serial number, test passed, usage) 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 with deuterium lines.
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.
Others	Second generation of Electronic temperature control (ETC) for the complete optical unit

¹ Maximum operating pressure (MOP): Maximum pressure at which a system can operate continuously under normal conditions.

² Maximum incidental pressure (MIP): The maximum pressure which the system can experience during a short time.