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_2O 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

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 Multisampler (G7167A)

Physical Specifications

Table 33   Physical Specifications

Type	Specification	Comments
Weight	22 kg (48.5 lbs)	w/o Thermostat
Dimensions (height × width × depth)	320 x 396 x 468 mm (12.6 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	180 VA, 180 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)[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 (Agilent 1260 Infinity II Multisampler G7167A)

Table 34   Performance Specifications Agilent 1260 Infinity II Multisampler (G7167A)

Type	Specification
Injection range for *Single-needle* instruments	Default: 0.1 – 90 µL in 0.1 µL increments optional: 20 µL or 40 µL (using optional 40 µL analytical head)
	0.1 – 500 µL or 900 µL in 0.1 µL increments (using 900 µL analytical head)
	0.1 – 120 µL in 0.1 µL increments with 1290 Infinity II large volume injection kit (hardware modification required) G4216-68711 0.1 – 500 µL or 1500 µL in 0.1 µL increments with 100 µL upgrade kit (hardware modification required) G7167-68711
Injection range for *Dual-needle* instruments	Default: 0.1 – 100 µL in 0.1 µL increments; optional: 20 µL or 40 µL (using 100 µL analytical head)
	Up to 900 µL in 0.1 µL increments depending on installed loop size
Injection precision for *single-needle* instruments	<0.15 % RSD or SD <10 nL, whatever is greater
Injection precision for *dual-needle* instruments	<0.2 % RSD or SD <10 nL, whatever is greater
Injection linearity	0.9999 in the range of 0.1 – 100 µL
Pressure range	Up to 800 bar
Sample viscosity range	0.2 – 5 cp
Sample capacity	*1H Drawer* up to 8 drawers and 16 positions Shallow well plates (MTP)
	2H Drawer up to 4 drawers and 8 positions MTP, deep well plates, vials, Eppendorf
	3H Drawer up to 2 drawers and 4 positions MTP, deep well plates, vials up to 6 mL, Eppendorf
Injection cycle time	<10 s using following standard conditions: Default draw speed: 100 µL/min Default eject speed: 400 µL/min Injection volume: 1 µL

Table 34 Performance Specifications Agilent 1260 Infinity II Multisampler (G7167A)

Type	Specification
Carry Over	<0.003 % (30 ppm) Multisampler Standard and Dual Needle <0.0009 % (9 ppm) Multisampler Multiwash
Multiwash	Outer needle wash and seat backflush for carryover reduction with up to 3 different solvents
Instrument Control	LC and CE Drivers A.02.10 or above Instrument Control Framework (ICF) A.02.03 or above Instant Pilot (G4208A) with firmware B.02.19 or above Lab Advisor B.02.06 or above
Communications	Controller-area network (CAN), Local Area Network (LAN) ERI: ready, start, stop and shut-down signals
Maintenance and safety-related features	Extensive diagnostics, error detection and display with Agilent Lab Advisor software 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.

Agilent 1260 Infinity II Multiple Wavelength Detector (G7165A)

Physical Specifications

Table 89   Physical Specifications

Type	Specification	Comments
Weight	12 kg (26.5 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	110 VA / 100 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 90 Performance Specifications 1260 Infinity II Multiple Wavelength Detector (G7165A)

Type	Specification
Detection type	1024-element photodiode array
Light source	Deuterium and tungsten lamps
Data rate	up to 120 Hz
Wavelength range	190 – 950 nm
Short term noise (ASTM) Single and Multi-Wavelength	$< \pm 0.7 \cdot 10^{-5}$ AU at 254 and 750 nm
Drift	$< 0.9 \cdot 10^{-3}$ AU/h at 254 nm
Linear absorbance range	> 2 AU (5 %) at 265 nm
Wavelength accuracy	± 1 nm
Wavelength bunching	1 – 400 nm
Slit width	1, 2, 4 , 8, 16 nm
Diode width	< 1 nm

Table 90 Performance Specifications 1260 Infinity II Multiple Wavelength Detector (G7165A)

Type	Specification
Flow cells	Standard: 13 µL volume, 10 mm cell path length and 120 bar (1740 psi) pressure maximum Standard bio-inert: 13 µL volume, 10 mm cell path length and 120 bar (1740 psi) pressure maximum Semi-micro: 5 µL volume, 6 mm cell path length and 120 bar (1740 psi) pressure maximum Micro: 2 µL volume, 3 mm cell path length, 120 bar (1740 psi) pressure maximum Semi-nano: 500 nL volume, 10 mm cell path length and 50 bar (725 psi) pressure maximum Nano: 80 nL volume, 6 mm cell path length and 50 bar (725 psi) pressure maximum High pressure: 1.7 µL volume, 6 mm cell path length and 400 bar (5800 psi) pressure maximum Prep SST: 3 mm cell path length and 120 bar (1740 psi) pressure maximum Prep Quartz:0.3 mm cell path length and 20 bar (290 psi) pressure maximum Prep Quartz: 0.06 mm cell path length and 20 bar (290 psi) pressure maximum SFC Flow Cell: Light path 10 mm, Pressure Rating 400 bar, Internal Volume 13 µL SFC Flow Cell LD: Light Path 3 mm, Pressure Rating 400 bar, Internal Volume 2 µL
Time programmable	Wavelength, polarity, peak width, lamp bandwidth, autobalance, wavelength range, threshold, spectra storage mode
Instrument Control	Lab Advisor B.02.08 or above LC and CE Drivers A.02.14 or above
Local Control	Agilent Instant Pilot (G4208A)
Analog outputs	Recorder/integrator: 100 mV or 1 V, output range 0.001 – 2 AU, two outputs
Communications	Controller-area network (CAN), USB Extended Remote Interface (ERI): ready, start, stop and shut-down signals

Table 90 Performance Specifications 1260 Infinity II Multiple Wavelength Detector (G7165A)

Type	Specification
Safety and maintenance	Extensive diagnostics, error detection and display (through control module and ChemStation), leak detection, safe leak handling, leak output signal for shutdown of pumping system. Low voltages in major maintenance areas.
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-setable limits and feedback messages. Electronic records of maintenance and errors. Verification of wavelength accuracy with built-in holmium oxide filter.
Housing	All materials recyclable.
Others	Second generation of Electronic temperature control (ETC) for the complete optical unit

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	Specification[1]
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.