

# Agilent Infinity II Preparative HPLC System

## Site Preparation Checklist

Thank you for purchasing an Agilent *instrument*. To get you started and to assure a successful and timely installation, please refer to this specification or set of requirements.

Correct site preparation is the key first step in ensuring that your instruments and software systems operate reliably over an extended lifetime. This document is an information guide and checklist prepared for you that outlines the supplies, consumables, space, and utility requirements for your equipment.

### Introduction

#### Customer Responsibilities

Ensure that your site meets the following specifications before the installation date. For details, see specific sections within this checklist, including:

- The necessary laboratory or bench space is available.
- The environmental conditions for the site as well as laboratory gases, plumbing and extraction.
- The power requirements related to the product (e.g. number and location of electrical outlets).
- The required operating supplies necessary for the product and installation.
- If Agilent is delivering Installation and Familiarization services, users of the instrument should be present throughout these services. Otherwise, they will miss important operational, maintenance, and safety information.
- Please consult the Special Requirements section for other product-specific information.

#### Customer Information

- 1 If you have questions or problems in providing anything described as a Customer Responsibility, please contact your local Agilent or partner support service organization for assistance before the scheduled installation. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your site.
- 2 Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.
- 3 Other optional services such as extra training, compliance services and consultation for user-specific applications may also be provided at the time of installation. Please discuss with your Agilent Sales representative before the installation is scheduled.
- 4 If applicable, the Network Assessment Tool can be used to verify the network environment.

## Important Customer Web Links

- Videos about specific preparation requirements for your instrument can be found by searching the *Agilent YouTube* channel at <https://www.youtube.com/user/agilent>
- To access *Agilent University*, visit <http://www.agilent.com/crosslab/university/> to learn about training options, which include online, classroom and onsite delivery.  
A training specialist can work directly with you to help determine your best options.
- A useful *Agilent Resource Center* web page is available, which includes short videos on maintenance, quick lists of consumables for new instruments, and other valuable information. Check out the Resource Page here: <https://www.agilent.com/en-us/agilentresources>
- Need technical support, FAQs, supplies? – visit our *Support Home page* at <http://www.agilent.com/search/support>
- Get answers. Share insights. Build connections:  
Join the *Agilent Community* at <https://community.agilent.com/welcome>

## Site Preparation

### Module List

Module	Instrument Description
G9328A	1260 Infinity II Preparative Column Organizer
G7161A/B	1260/1290 Infinity II Preparative Binary Pump
G1328D	Preparative Manual Injector
G7157A	1260 Infinity II Preparative AutoSampler
G7158B	1290 Infinity II Preparative Open-Bed Sampler/Collector
G7114A/B	1260/1290 Infinity II Variable Wavelength Detector
G7165A	1260 Infinity II Multi Wavelength Detector
G7115A	1260 Infinity II Diode Array Detector
G61xxA/B/C	6100 Series Single Quadrupole Mass Spectral Detector
G7170B	1290 Infinity II Flow Modulator
G7166A	1260 Infinity II Preparative Valve-based Fraction Collector
G1364E	1260 Infinity II Preparative Fraction Collector
G7159B	1290 Infinity II HiP Preparative OpenBed Fraction Collector
G9324A	1260 Infinity II Delay Coil Organizer
G7163B	1290 Infinity II Preparative Column Compartment
G9322A	1260 Infinity II Clustering Valve

## Dimensions and Weight

Identify the laboratory bench space before your instrument arrives based on the following table.

Pay special attention to the total height and total weight requirements for all system components you have ordered and avoid bench space with overhanging shelves.

### Special notes

- The system needs an additional 2.5 cm (1.0 inches) of space on either side and approximately 8 cm (3.1 inches) in the rear for air circulation and electric connections.
- The autosampler module especially with a sample cooler installed should be operated in a proper horizontal position. Use a bubble level to check the leveling of the sampler.

At least 2 people must be present to lift the MSD, foreline pump, preparative pump, open-bed sampler/collector.

Instrument Description	Weight		Height		Depth		Width	
	kg	lbs	mm	in	mm	in	mm	in
1260 Infinity II Preparative Column Organizer	3.6	8	486	19.1	345	13	180	7.1
1260/1290 Infinity II Preparative Binary Pump	27.0	59.5	324	12.6	436	17.2	396	15.6
Preparative Manual Injector	0.1	0.2	80	3.1	115	4.5	40	1.6
1260 Infinity II Preparative Auto Sampler	16.2	35.7	324	12.6	436	17.2	396	15.6
1290 Infinity II Preparative Open-Bed Sampler/Collector	30.6	67.5	781	30.7	622	24.5	393	15.5
1260/1290 Infinity II Variable Wavelength Detector	11.0	24.3	140	5.5	436	17.2	396	15.6
1260 Infinity II Multi Wavelength Detector	12.0	26.5	140	5.5	436	17.2	396	15.6
1260 Infinity II Diode Array Detector	12.0	26.5	140	5.5	436	17.2	396	15.6

Instrument Description	Weight		Height		Depth		Width	
6100 Series Single Quadrupole Mass Spectral Detector	60.7	133.8	450	18.0	635	25.0	396	15.6
Foreline pump (G6100B) Agilent MS40+	33.0	72.7	228	9.0	418	16.5	297	11.7
G1948B ESI Source	1.7	3.8	170	6.8	95	3.7	180	7.1
G1947B APCI Source	1.7	3.8	230	9.2	115	4.5	180	7.1
G1971B APPI Source	1.7	3.8	230	9.2	130	5.1	180	7.1
G1978B MultiMode Source	2.3	5.0	230	9.2	130	5.1	180	7.1
Agilent Jet Stream Technology	1.7	3.8	230	9.2	115	4.5	180	7.1
G1948B ESI Source	1.7	3.8	170	6.8	95	3.7	180	7.1
1290 Infinity II MS Flow Modulator	1.9	4.2	95	3.7	300	11.8	95	3.7
1260 Infinity II Preparative Valve based Fraction Collector	1.9	4.2	95	3.7	300	11.8	95	3.7
1260 Infinity II Preparative Fraction Collector	17.0	37.4	180	7.0	435	17.0	345	13.5
1290 Infinity II HiP Preparative OpenBed Fraction Collector	13.5	29.8	781	30.8	625	24.6	396	15.6
1260 Infinity II Delay Coil Organizer	0.6	1.3	95	3.7	338	13.3	95	3.7
1290 Infinity II Preparative Column Compartment	22.7	50.0	640	25.2	436	17.2	396	15.6
1260 Infinity II Clustering Valve	0.6	1.3	95	3.7	150	33.1	95	3.7

## Environmental Conditions

Operating your instrument within the recommended temperature ranges ensures optimum instrument performance and lifetime.

### Special notes

- 1 Performance can be affected by sources of heat and cold, e.g., direct sunlight, heating/cooling from air conditioning outlets, drafts, and/or vibrations.
- 2 The laboratory's ambient temperature conditions must be stable for optimum performance.
- 3 The following table summarizes some key physical specifications. For the complete set of physical specifications, please refer to the corresponding module manual.

Product Number	Instrument Description	Operating temp range °C (°F)	Operating humidity range (%)
G9328A	1260 Infinity II Preparative Column Organizer	n/a	n/a
G7161A/B	1260/1290 Infinity II Preparative Binary Pump	4 – 40 (39 – 104 )	<95 % r.h. at 40 °C (104 °F), non-condensing
G1328D	Preparative Manual Injector	n/a	n/a
G7157A	1260 Infinity II Preparative AutoSampler	4 – 40 (39 – 104 ), without chiller up to 55 °C (131 )	<95 % r.h. at 40 °C (104 °F), non-condensing <sup>1</sup>
G7158B	1290 Infinity II Preparative Open-Bed Sampler/Collector	4 – 40 (39 – 104 )	Operating humidity range: ≤80 % r.h. up to 31 °C, decreasing to 50 % r.h. at 40 °C
G7114A/B	1260/90 Infinity II Variable Wavelength Detector	4 – 55 (39 – 131 ) constant temperature	<95 % r.h. at 40 °C (104 °F), non-condensing
G7165A	1260 Infinity II Multi Wavelength Detector	4 – 55 (39 – 131 ) constant temperature	<95 % r.h. at 40 °C (104 °F), non-condensing
G7115A	1260 Infinity II Diode Array Detector	4 – 55 (39 – 131 ) constant temperature	<95 % r.h. at 40 °C (104 °F), non-condensing

Product Number	Instrument Description	Operating temp range °C (°F)	Operating humidity range (%)
G61xxA/B/C <sup>2</sup>	6100 Series SQ Mass Spectral Detector, including the rough pump and source	15 – 35 (59 – 95 ) constant temperature	<80 %, non condensing
G7170B	1290 Infinity II MS Flow Modulator	4 – 40 (39 – 104 )	<95 %
G7166A	1260 Infinity II Preparative Valve-based Fraction Collector	4 – 40 (39 – 104 )	<95 %
G1364E	1260 Infinity II Preparative Fraction Collector	4 – 40 (39 – 104 )	<95 % r.h. at40 °C (104 °F), non-condensing
G7159B	1290 Infinity II HiP Preparative OpenBed Fraction Collector	4 – 40 (39 – 104 )	<95 %
G9324A	1260 Infinity II Delay Coil Organizer	n/a	n/a
G9322A	1260 Infinity II Clustering Valve	4 – 40 (39 – 104 )	<95 %
G7163B	1290 Infinity II Preparative Column Compartment	n/a	n/a

<sup>1</sup> If a sample cooler 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.

<sup>2</sup> The Heat Dissipation for the MSD is up to 6800 BTU/hr (2000 Watts)

## Power Consumption

### Special notes

- 1 If a computer system is supplied with your instrument, be sure to account for those electrical outlets.
- 2 The heat dissipation can be calculated from the active power, using the following equation:  
 $1 \text{ W} = 3.413 \text{ BTU/h}$
- 3 A dedicated 15 A200 – 240 V AC power outlet is required for the 6100 Series Single Quad LC/MS. The 6100 Series Single Quad LC/MS should be located with 2.5 m (8 feet) of this outlet. Please refer to the Site Preparation Manual for additional details.
- 4 Avoid using power supplies from a source that may be subject to electrical interference from other services (such as large electric motors, elevators, welders and air conditioning units).
- 5 Only single phase power is required.



Product Number	Instrument Description	Line Voltage and Frequency (V, Hz)	Maximum Power Consumption (VA)	Maximum Power Consumption (W)
G9328A	1260 Infinity II Preparative Column Organizer	n/a	n/a	n/a
G7161A/B	1260/1290 Infinity II Preparative Binary Pump	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	80	65
G1328D	Preparative Manual Injector	n/a	n/a	n/a
G7157A	1260 Infinity II Preparative AutoSampler	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	350	350
G7158B	1290 Infinity II Preparative Open-Bed Sampler/Collector	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	350	350
G7114A/B	1260/1290 Infinity II Variable Wavelength Detector	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	80	70
G7165A	1260 Infinity II Multi Wavelength Detector	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	110	100
G7115A	1260 Infinity II Diode Array Detector	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	110	100
G61xxA/B/C	G6100B Series Single Quad LC/MS System with foreline pump	200 – 240 (15 A), 50 – 60	2000	n/a
G7170B	1290 Infinity II MS Flow Modulator	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	20	7
G7166A	1260 Infinity II Preparative Valve-based Fraction Collector	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	20	7
G1364E	1260 Infinity II Preparative Fraction Collector	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	200	170
G7159B	1290 Infinity II HiP Preparative OpenBed Fraction Collector	100 – 240 ( $\pm 10\%$ ), 50 – 60 ( $\pm 5\%$ )	180	180
G9324A	1260 Infinity II Delay Coil Organizer	n/a	n/a	n/a
G9322A	1260 Infinity II Clustering Valve	n/a	n/a	n/a
G7163B	1290 Infinity II Preparative Column Compartment	n/a	n/a	n/a

## Required Operating Supplies by Customer for Installation

### Special notes

- 1 Download the Essential Chromatography and Spectroscopy Supplies Catalogs for a complete overview about available supplies for your new and existing Agilent Instruments  
<https://www.agilent.com/en-us/products/lab-supplies>

Item Description (including dimensions etc)	Vendor's Part Number (if applicable)	Recommended Quantity
n/a	n/a	n/a

## Special Requirements

### Wiring Requirements

All modules communicate via CAN through a LAN connection with the PC. Some modules such as the Fraction Valve, require a host-module, since they do not use their own CPU.

### Waste Requirements

Operation of the Agilent Infinity II Preparative HPLC System requires the use of a waste container for the disposal of excess fluids. Suitable tubing is supplied with the HPLC system for use with most solvents.

A chemically inert container, which is appropriately sized to hold waste coming from the system must be provided by the system user. It should be located underneath the workbench where it is protected by the bench and in full view of the operator.

### Leak Concept and Requirements

**The waste line cascading as suggested for Analytical HPLC Systems is not allowed for Preparative HPLC Systems. For Preparative HPLC Systems following rules apply:**

- Leak and waste lines cannot be combined and must be attached to waste container by individual ports.
- No up-slopes or bends of the leak and waste lines are allowed. Use L-connection pieces for the table or other edges.
- Customer provides waste container and suitable waste container cap with sufficient number of inlet ports. Following criteria apply:
  - One leak line per stack tower is installed
  - One leak line per solvent cabinet
  - One waste line for G7161B seal wash
  - One waste line for G7157A needle wash
  - One leak line and one waste line per G7158B/G7159B
- Each G7158B/G7159B requires its own waste container.

**If the system is placed in a fume hood or on a table with table edge, the modules/stacks need to be raised to ensure proper leak handling:**

- One base plate is required for tables with table edge lower than 15 mm.
- Two base plates are required for tables with table edge higher than 15 mm and lower than 30 mm.

## Network Requirements

The Agilent Preparative HPLC System requires an Ethernet connection to the PC via a shielded twisted pair Ethernet crossover cable Category 5 or better usually connected to the Detector.

If connection is required to an Ethernet network, then a shielded twisted pair Ethernet non-crossover cable Category 5 or better will be required.

Most PC's come pre-configured with an Ethernet connection either built into the motherboard or with an Ethernet network card installed. Check that the intended PC has this configuration and if not, a network card will have to be fitted. Refer to the installation chapter for details.

If the users are supplying their own PC, they are responsible for installing and configuring the card. They are also responsible for setting up and maintaining any LAN configuration where a detector may be used.

All network issues are to be dealt with by the users.

## Solvent Requirements

Customer should have available HPLC grade Acetonitrile and water. In case of a Mass Based Purification system, LCMS grade solvents are required.

## Gas Requirements

### Special Notes:

Gases supplied by high pressure bottles are not supported on the Agilent Single 6100 Series MSD configurations. Please note that high pressure bottles are NOT suitable for supplying nitrogen for Drying Gas and Nebulizer requirements due to the high flow rates.

At least 3 L/min is required at all times to prevent air from entering the instrument.

Gas requirements	Minimum Purity <sup>1</sup>	Typical pressure range	Typical flow(L/min) (without Jet Stream)	Typical flow (L/min) (with Jet Stream)
Nitrogen generator	≤95.0 %	80 – 100 psi 550 – 690 kPa	≤16	≤30
Liquid nitrogen Dewar	≤99.5 %	80 – 100 psi 550 – 690 kPa	≤16	≤30
Bottled Nitrogen	≤99.5 %	80 – 100 psi 550 – 690 kPa	≤16	≤30

<sup>1</sup> Purity specification given is the minimum acceptable purity. Major contaminants can be water, oxygen, or air.

The Agilent G7166A Fraction Collector requires a supply gas (either Nitrogen or Compressed Air) to empty its individual valves and fraction lines. The gas supply needs to be free of oil, humidity and particles. The maximum gas pressure is 7 bar (100 psi) and must be set by an external pressure regulator. The Push Fit gas inlet of the Fraction Collector allows a supplied 2 m x 6 mm (0.236 inches) PU hose to be inserted. The accessory kit is supplied with a 6 mm Male R1/4 BSPT to Push Fit Elbow fitting, that is to be fitted into the external pressure regulator. It is the customer's responsibility to provide a suitable adaptor between this elbow fitting and the regulator. Sizes can be found in the following table. Alternatively, the customer can provide their own fittings to connect a 6 mm PU tube to their regulator.



**Table 1** Push Fit Fitting

Measurement point	Size
A	6 mm
B	1/4 BSPT
C	8 mm
Wrench size	12 mm

## Exhaust Venting Requirements

### General Laboratory Ventilation Conditions

The recommended air exchange rate is 10 times per hour, the minimum required air exchange rate is 8 times per hour.

Recommendations for fume hood installations: The recommended ventilation speed is 200 m<sup>3</sup>/h with closed sash window and 490 m<sup>3</sup>/h with open sash window.

### Recommendations for Single Quad MSD Foreline Pump

The Single Quad MSD foreline pump exhaust and spray chamber exhaust must be vented outside of the laboratory environment. The exhaust vent system should not be part of an environmental control system that re-circulates air inside of a building. Exhaust venting requirements need to comply with all local environmental and safety codes.

- ❑ A 6 m (20 feet) length of 0.5 inch i.d. PVC/vinyl tubing is included for venting the foreline pump exhaust and ion source. This is sufficient for two 3 m (10 feet) lengths.
- ❑ The foreline pump exhaust and the ion source exhaust cannot share the same piece of exhaust tubing. Separate 0.5 inch hose barbs are required to connect the tubing to the exhaust vent. If both exhaust tubes are being connected to a common exhaust system, the source exhaust tube must be upstream of the foreline pump exhaust.

Output Source	Ventilation Draw Range	Minimum Flow	Maximum Flow
Rough Pump	0.01 – 0.1 inches of water (0.025 – 0.25 mBar)	1.0 L/min (2.1 ) ft <sup>3</sup> /hr	≤3 L/min (6.4 ) ft <sup>3</sup> /hr
Agilent 6100 Series without Agilent Jet Stream	0.01 – 0.1 inches of water (0.025 – 0.25 mBar)	5 L/min (10.6 ) ft <sup>3</sup> /hr	≤16 L/min (33.9 ) ft <sup>3</sup> /hr
Agilent 6100 Series with Agilent Jet Stream	0.01 – 0.1 inches of water (0.025 – 0.25 mBar)	5 L/min (10.6 ) ft <sup>3</sup> /hr	≤30 L/min (63.6 ft <sup>3</sup> /hr)

**IMPORTANT:** Excessive draw from the fume exhaust system to the source can negatively affect the performance of the LC/MS system.