



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 for your site.

For additional information about our solutions, please visit our web site at <http://www.chem.agilent.com/en-US/Pages/HomePage.aspx>

Customer Responsibilities

Make sure your site meets the following prior to the installation date using the checklist below. For details, see specific sections within this document, including:

- The necessary laboratory or bench space is available.
- The environmental conditions for the lab as well as laboratory gases, tubing.
- The power requirements related to the product (e.g. number & location of electrical outlets).
- The required operating supplies necessary for the product and installation.
- Please consult Other/Special Requirements section below for other product-specific information.
- 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.

Important Customer Information

- 1 If you have questions or problems in providing anything described as **Customer Responsibilities** above, please contact your local Agilent or partner support/service organization for assistance prior to delivery. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.
- 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 additional training, operational qualification (OQ) and consultation for user-specific applications may also be provided at the time of installation when ordered with the system, but should be contracted separately.



Module List

| Module | Instrument Description |
|--------|--|
| G1170A | 1290 Infinity Valve Drive and Valve Heads |
| G1310B | 1260 Infinity Isocratic Pump |
| G1311B | 1260 Infinity Quaternary Pump |
| G1311C | 1260 Infinity Quaternary Pump VL |
| G1312B | 1260 Infinity Binary Pump |
| G1312C | 1260 Infinity Binary Pump VL |
| G1314B | 1260 Infinity Variable Wavelength Detector VL |
| G1314C | 1260 Infinity Variable Wavelength Detector VL+ |
| G1314E | 1290 Infinity Variable Wavelength Detector |
| G1314F | 1260 Infinity Variable Wavelength Detector |
| G1315C | 1260 Infinity Diode Array Detector VL+ |
| G1315D | 1260 Infinity Diode Array Detector VL |
| G1316A | 1260 Infinity Thermostatted Column Compartment |
| G1316C | 1290 Infinity Thermostatted Column Compartment |
| G1321B | 1260 Infinity Fluorescence Detector |
| G1321C | 1260 Infinity Fluorescence Detector |
| G1322A | 1260 Infinity Standard Degasser |
| G1329B | 1260 Infinity Standard Autosampler |
| G1330B | 1290 Infinity Thermostat |
| G1361A | 1260 Infinity Preparative Pump |
| G1362A | 1260 Infinity Refractive Index Detector |
| G1364B | 1260 Infinity Preparative-scale Fraction Collector |
| G1364C | 1260 Infinity Analytical-scale Fraction Collector |
| G1364D | 1260 Infinity Micro-scale Fraction Collector |
| G1365C | 1260 Infinity Multiple Wavelength Detector |
| G1365D | 1260 Infinity Multiple Wavelength Detector VL |
| G1367E | 1260 Infinity High Performance Autosampler |
| G1376A | 1260 Infinity Capillary Pump |
| G1377A | 1260 Infinity High Performance Micro Autosampler |

**1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist**

| Module | Instrument Description |
|---------------|---|
| G1379B | 1260 Infinity Micro Degasser |
| G1390B | 1200 Infinity Series Universal Interface Box |
| G1968F | Active Splitter |
| G2226A | 1260 Infinity Nanoflow Pump |
| G2257A | 1260 Infinity Sample Capacity Extension |
| G2258A | 1260 Infinity Dual-Loop Autosampler |
| G2260A | 1260 Infinity Preparative Autosampler |
| G4204A | 1290 Infinity Quaternary Pump |
| G4208A | 1200 Infinity Series Instant Pilot |
| G4212A | 1290 Infinity Diode Array Detector |
| G4212B | 1260 Infinity Diode Array Detector |
| G4220A | 1290 Infinity Binary Pump |
| G4220B | 1290 Infinity Binary Pump |
| G4225A | 1260 Infinity High Performance Degasser Module |
| G4226A | 1290 Infinity Autosampler |
| G4227A | 1290 Infinity Flexible Cube |
| G4240A | 1260 Infinity Chip Cube MS Interface |
| G4260A | Agilent 380-ELSD |
| G4260B | 1260 Infinity Evaporative Light Scattering Detector |
| G4261A | Agilent 385-ELSD |
| G4261B | 1290 Infinity Evaporative Light Scattering Detector |
| G4277A | 1290 Infinity LC Injector HTS |
| G4278A | 1290 Infinity LC Injector HTC |
| G5611A | 1260 Infinity Bio-inert Quaternary Pump |
| G5664A | 1260 Infinity Bio-inert Analytical-scale Fraction Collector |
| G5667A | 1260 Infinity Bio-inert High-Performance Autosampler |



Dimensions and Weight



Identify the laboratory bench space before your system arrives based on the table below. 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**. Also pay special attention to the total weight of the modules you have ordered to ensure your laboratory bench can support this weight.

Special Notes

- The thermostatted version of all samplers and the fraction collector include the G1330B thermostat module. The thermostat module must be placed directly under the sampler or the fraction collector to be thermostatted. It is recommended that the thermostat module is positioned as the bottom module of the stack, directly on the laboratory bench. Any stack containing a G1330B thermostat module needs at least 25 cm (10 inches) of space on either side to guarantee proper ventilation.

| Instrument Description | Weight | | Height | | Depth | | Width | |
|--------------------------------|--------|------|--------|------|-------|------|-------|------|
| | kg | lbs | cm | in | cm | in | cm | in |
| G1322A, G1379B | 7.5 | 16.5 | 8 | 3 | 43.5 | 17 | 34.5 | 13.5 |
| G4225A | 5 | 11 | 8 | 3.1 | 43.5 | 17 | 34.5 | 13.5 |
| G1310B | 11 | 25 | 18 | 7 | 43.5 | 17 | 34.5 | 13.5 |
| G1311B/C, G5611A | 14.5 | 32 | 18 | 7 | 43.5 | 17 | 34.5 | 13.5 |
| G1312B/C | 15.5 | 34 | 18 | 7 | 43.5 | 17 | 34.5 | 13.5 |
| G1376A, G2226A | 17 | 39 | 18 | 7 | 43.5 | 17 | 34.5 | 13.5 |
| G1361A | 15 | 32.9 | 20 | 8 | 43.5 | 17 | 34.5 | 13.5 |
| G4220A/B | 21.8 | 48 | 24 | 9.3 | 43.5 | 17 | 34.5 | 13.5 |
| G4204A | 15.2 | 33.4 | 20 | 8 | 43.5 | 17 | 34.5 | 13.5 |
| G2258A | 14 | 29.8 | 20 | 8 | 43.5 | 17 | 34.5 | 13.5 |
| G1329B, G2260A | 14.2 | 31.3 | 20 | 8 | 43.5 | 17 | 34.5 | 13.5 |
| G1367E, G1377A, G4226A, G5667A | 15.5 | 34.2 | 20 | 8 | 43.5 | 17 | 34.5 | 13.5 |
| G4277A | 10 | 22.8 | 64.8 | 25.5 | 38.5 | 15.1 | 82.8 | 32.6 |
| G4278A | 8 | 18.2 | 64.8 | 25.5 | 38.5 | 15.1 | 54.4 | 21.5 |
| G1364B/C/D, G5664A | 17 | 38 | 18 | 7 | 43.5 | 17 | 34.5 | 13.5 |
| G4240A | 14 | 31 | 36 | 14.1 | 30 | 11.7 | 35 | 13.7 |



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

| Instrument Description | Weight | | Height | | Depth | | Width | |
|-------------------------------|---------------|------|---------------|------|--------------|------|--------------|------|
| G1330B | 18.5 | 40.7 | 14.4 | 5.5 | 43.5 | 17 | 34.5 | 13.5 |
| G4227A | 8.2 | 18.1 | 14.4 | 5.5 | 43.5 | 17 | 34.5 | 13.5 |
| G1316A/C | 11.2 | 22.5 | 14 | 5.5 | 43.5 | 17 | 41 | 16 |
| G1314B/C/E/F | 11 | 25 | 14 | 5.5 | 43.5 | 17 | 34.5 | 13.5 |
| G1315C/D, G1365C/D | 11.5 | 26 | 14 | 5.5 | 43.5 | 17 | 34.5 | 13.5 |
| G1321B/C | 11.5 | 25.4 | 14 | 5.5 | 43.5 | 17 | 34.5 | 13.5 |
| G4212A/B | 11.5 | 26 | 14 | 5.5 | 43.5 | 17 | 34.5 | 13.5 |
| G1362A | 17 | 38 | 18 | 7 | 43.5 | 17 | 34.5 | 13.5 |
| G4260A/B | 11 | 24.2 | 41.5 | 16.3 | 45 | 17.7 | 20 | 7.9 |
| G4261A/B | 13 | 28.6 | 41.5 | 16.3 | 45 | 17.7 | 20 | 7.9 |
| G1390B | 0.9 | 2 | 16.5 | 6.5 | 5.5 | 2.2 | 13.5 | 5.3 |
| G1968F | 2.1 | 4.6 | 14.1 | 5.6 | 19.1 | 7.5 | 7.8 | 3.1 |



Environmental Conditions

Operating your instrument within the recommended temperature ranges insures 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 site'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.

| Instrument Description | Operating temp range °C (F) | Operating humidity range (%) |
|--|---|--|
| G1314B/C/E/F, G1315C/D, G1316A/C, G1322A, G1365C/D, G1362A, G4225A | 0 – 55 °C (32 – 131 F), constant temperature. | < 95 %, non-condensing |
| G1321B/C | 0 – 40 °C (32 – 104 F), constant temperature. | < 95 %, non-condensing |
| G4212A/B | 4 – 40 °C (39 – 104 F), constant temperature. | < 80 %, non-condensing |
| G1379B | 0 – 45 °C (32 – 113 F) | < 95 %, non-condensing |
| G1330B, G1361A, G1364B/C/D, G5664A, G2258A, G4212B | 4 – 40 °C (39 – 104 F) | < 95 %, non-condensing |
| G4260A/B, G4261A/B | 10 – 35 °C (50 – 95 F) | < 95 %, non-condensing |
| G4240A | 5 – 40 °C (41 – 104 F) | < 80 %, non-condensing |
| G4277A, G4278A | 4 – 40 °C (39 – 104 F) | < 75 %, non-condensing |
| G1968F | 0 – 40 °C (32 – 104 F), constant temperature | 80 % r.h. up to 31 °C, decreasing to 50 % at 40 °C, non-condensing |
| All other modules | 4 – 55 °C (39 – 131 F), constant temperature | < 95 % r.h. at 40 °C, non-condensing |



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 the active power, using the following equation:
1 W = 3.413 BTU/h

| Instrument Description | Line Voltage & Frequency (V, Hz) | Maximum Power Consumption (VA) | Maximum Power Consumption (W) |
|--|----------------------------------|--------------------------------|-------------------------------|
| G1379B, G1322A, G4225A | 100 – 240 V(AC), 50 or 60 Hz | 30 VA | 30 W |
| G1310B | 100 – 240 V(AC), 50 or 60 Hz | 180 VA | 55 W |
| G1311B/C, G5611A | 100 – 240 V(AC), 50 or 60 Hz | 180 VA | 110 W |
| G1312B/C | 100 – 240 V(AC), 50 or 60 Hz | 220 VA | 74 W |
| G1376A, G2226A | 100 – 240 V(AC), 50 or 60 Hz | 220 VA | 75 W |
| G1361A | 100 – 240 V(AC), 50 or 60 Hz | 250 VA | 210 W |
| G4220A/B | 100 – 240 V(AC), 50 or 60 Hz | 350 VA | 270 W |
| G4204A | 100 – 240 V(AC), 50 or 60 Hz | 220 VA | 180 W |
| G1329B, G2260A, G1367E, G1377A, G4226A, G5667A | 100 – 240 V(AC), 50 or 60 Hz | 300 VA | 200 W |
| G2258A | 100 – 240 V(AC), 50 or 60 Hz | 260 VA | 210 W |
| G4277A, G4278A | 100 – 240 V(AC), 50 – 60 Hz | N/A | 120 W |
| G1364D | 100 – 240 V(AC), 50 or 60 Hz | 200 VA | 180 W |
| G5664A | 100 – 240 V(AC), 50 or 60 Hz | 180 VA | 180 W |
| G4240A | 100 – 240 V(AC), 50 or 60 Hz | N/A | 80 W |
| G1330B | 100 – 240 V(AC), 50 or 60 Hz | 260 VA | 210 W |
| G4227A | 100 – 240 V(AC), 50 or 60 Hz | 80 VA | 45 W |
| G1316A/C | 100 – 240 V(AC), 50 or 60 Hz | 320 VA | 150 W |
| G1314B/C/E/F | 100 – 240 V(AC), 50 or 60 Hz | 220 VA | 85 W |
| G1315C/D, G1365C/D | 100 – 240 V(AC), 50 or 60 Hz | 160 VA | 160 W |
| G4212A/B | 100 – 240 V(AC), 50 or 60 Hz | 160 VA | 130 W |



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

| Instrument Description | Line Voltage & Frequency (V, Hz) | Maximum Power Consumption (VA) | Maximum Power Consumption (W) |
|-------------------------------|---|---------------------------------------|--------------------------------------|
| G1362A | 100 – 240 V(AC), 50 or 60 Hz | 160 VA | 65 W |
| G1321B/C | 100 – 240 V(AC), 50 or 60 Hz | 180 VA | 70 W |
| G4260A/B, G4261A/B | 100 – 120 V(AC) or 220 – 240 V, 50 or 60 Hz | N/A | 150 W |
| G1390B | 100 – 240 V(AC), 50 or 60 Hz | 140 VA | 65 W |
| G1968F | 100 – 240 V(AC), 50 or 60 Hz | 93 – 111 VA | N/A |



Required Operating Supplies by Customer

Special Notes:

- For information on Agilent consumables, accessories and laboratory operating supplies, please visit <http://www.chem.agilent.com/en-US/Products/consumables/Pages/default.aspx>



Other/Special Requirements

G4260B, G4261B

Gas requirements

A supply of inert gas (typically nitrogen) is required to operate the detector. The gas supply needs to be free of oil, humidity and particles, as such contaminations will create background noise in the chromatograms and may damage the built-in pressure sensor. In case of such noise for example for newly installed gas lines, flush the gas lines for sufficient time (might take days) and use additional filters of 0.5 μm or less. The typical gas pressure is 4 bar (60 psi) and must be set by an external pressure regulator. Pure gas is not required as the gas is only used as a carrier for the solid sample particles. The gas inlets of the detector have an outer diameter of 4 mm (0.157 inches). The lab installation must therefore allow the installation of a tubing with 4 mm (0.157 inches) outer diameter. Gas consumption is typically 0.9 SLM to 3.25 SLM, depending on the detector settings.

| Item description, (including dimensions etc) | Vendor/Part Number (if applicable) | Recommended quantity |
|--|------------------------------------|----------------------|
| G4260A/B, G4261A/B ELSD Gas Nitrogen (typical) | N/A | N/A |

Solvent requirements

Customer should have available HPLC grade Acetonitrile and water with a dry residue below 1 ppm or MS grade solvents.

Exhaust venting and drain requirements

The exhaust from the detector must be directed into a fume hood or exhaust vent. If a vacuum is used, it should be moderate so as to avoid turbulence in the glass cell siphon. The potentially hazardous exhaust of evaporated solvent and sample must not be allowed to enter the laboratory atmosphere and any appropriate accessory like solvent filters should be disposed according to local environmental requirements.

If the extraction tube provided with the instrument is to be extended it is recommended that the diameter of the extension is increased to at least 50 mm (2 in) diameter tubing so the extraction quality is not inhibited.

NOTE

Do not connect the exhaust vent directly to the detector. This might cause either positive pressure or negative back pressure, both of which will impact the quality of your measurement results.



1290 Infinity LC/1260 Infinity LC Site Preparation Checklist

The drain tube must be directed to a waste container supplied with the instrument. The user is responsible for decontamination or recycling of any residue, regarding to local environmental requirements.

Further requirements

The 1290 Infinity ELSD (G4261B) and 1260 Infinity ELSD (G4260 B) can be controlled either via RS232 or via LAN. If the RS232 interface is used for control, the ELSD must be installed close to the control PC unless special data transmission systems are used. The length of the straight female/female RS 232 cable supplied with both detectors is 2.9 m.



G4240A 1260 Chip LC

Gas Requirements

For HPLC Chip Cube installation, high purity air is required. The high purity air is used to reduce background ions in the spray chamber and to enhance spray stability. More details regarding the use of the Background Reduction Kit can be found in the installation manual for that kit.

Please see [Table 1](#) on page 12 for a summary of the air for Chip Cube requirements.

Table 1 Air for Chip Cube requirements

| | Purity | Gas Pressure | Flow |
|---|--|---|--------------------------|
| High pressure air source ¹ for 6520A/B, 6530, 6538, 6540 | 99.99 % pure or better and hydrocarbon free ² | 5.5 – 6.9 bar ² (80 – 120 psi) | Up to 4 L/min (240 L/h) |
| High pressure air source ¹ for 6550 | 99.99 % pure or better and hydrocarbon free ² | 5.5 – 6.9 bar ² (80 – 120 psi) | Up to 10 L/min (600 L/h) |

¹ Air source must be able to deliver air at a constant pressure.

² Inlet gas pressure for air must be slightly higher than the pressure used for the nitrogen gas supply pressure.

Exhaust Venting

Please refer to the Site Preparation Guide of your Agilent mass spectrometer for detailed specifications of the spray chamber exhaust vent.

Interface

Please plan for 15 cm (6 inch) free space between the LC stack and the HPLC-Chip Cube Interface. It is required for lifting the Chip Cube off the mass spectrometer. The LC and the mass spectrometer should be installed on the same table. This allows to remove the Chip Cube quickly without disconnecting capillaries for routine maintenance tasks.



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

Module Stacking

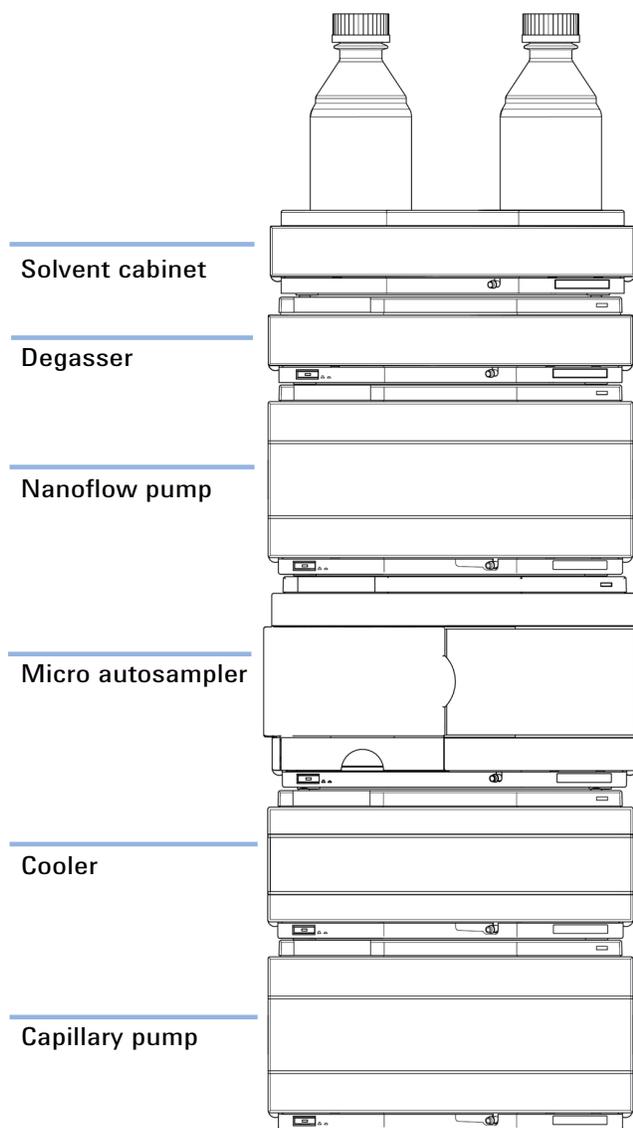


Figure 1 Recommended single stack configuration for HPLC-Chip MS



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

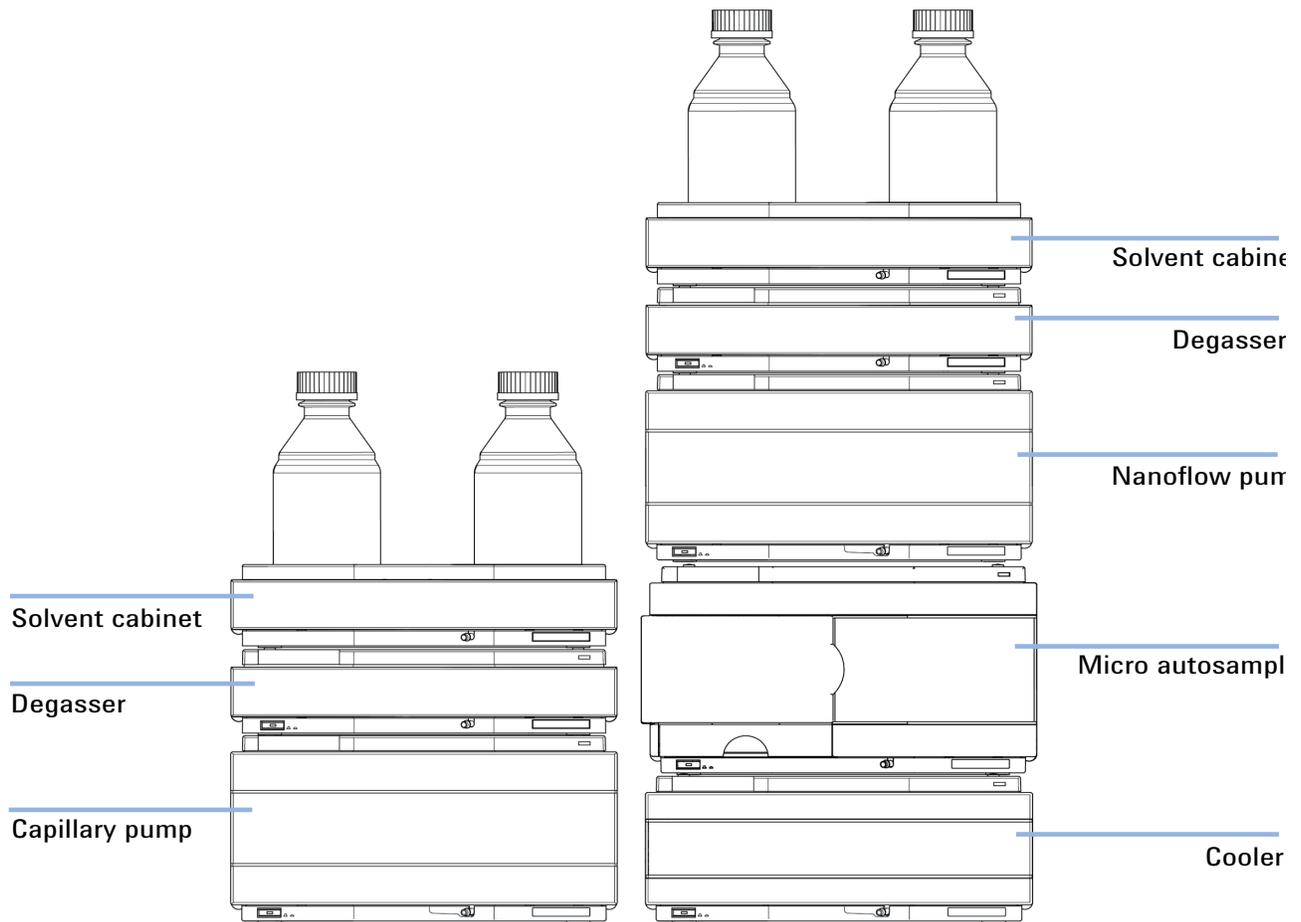


Figure 2 Recommended 2-stack configuration for HPLC-Chip MS



G4277A 1290 HTS, G4278A 1290 HTC

Module Stacking

The G4277A and G4278A have to be installed on free bench space next to the 1290 Infinity LC stack.

To avoid excessive delay volumes from the pump to the injection valve and from the injection valve to the LC columns:

- Install the LC Injector HTS/HTC as close as possible to the 1290 Infinity LC stack.
- Move the injection valve on the x-rail to the side, where the LC stack is installed.
- When using a two-stack configuration, the LC Injector HTS/HTC should be placed next to the stack that includes the 1290 Infinity Pump and the 1290 Infinity Thermostatted Column Compartment. Two 600 mm stainless steel capillaries are delivered with the LC Injector HTS/HTC. These should be used to connect the injection valve to the pump outlet and LC column.
- Peltier cooled stacks require at least 2.5 cm (1 in) clearance between the back of the stack and the wall for air circulation.



Figure 3 Recommended stack configuration for 1290 Infinity LC Injectors HTS/HTC



Stack Configurations

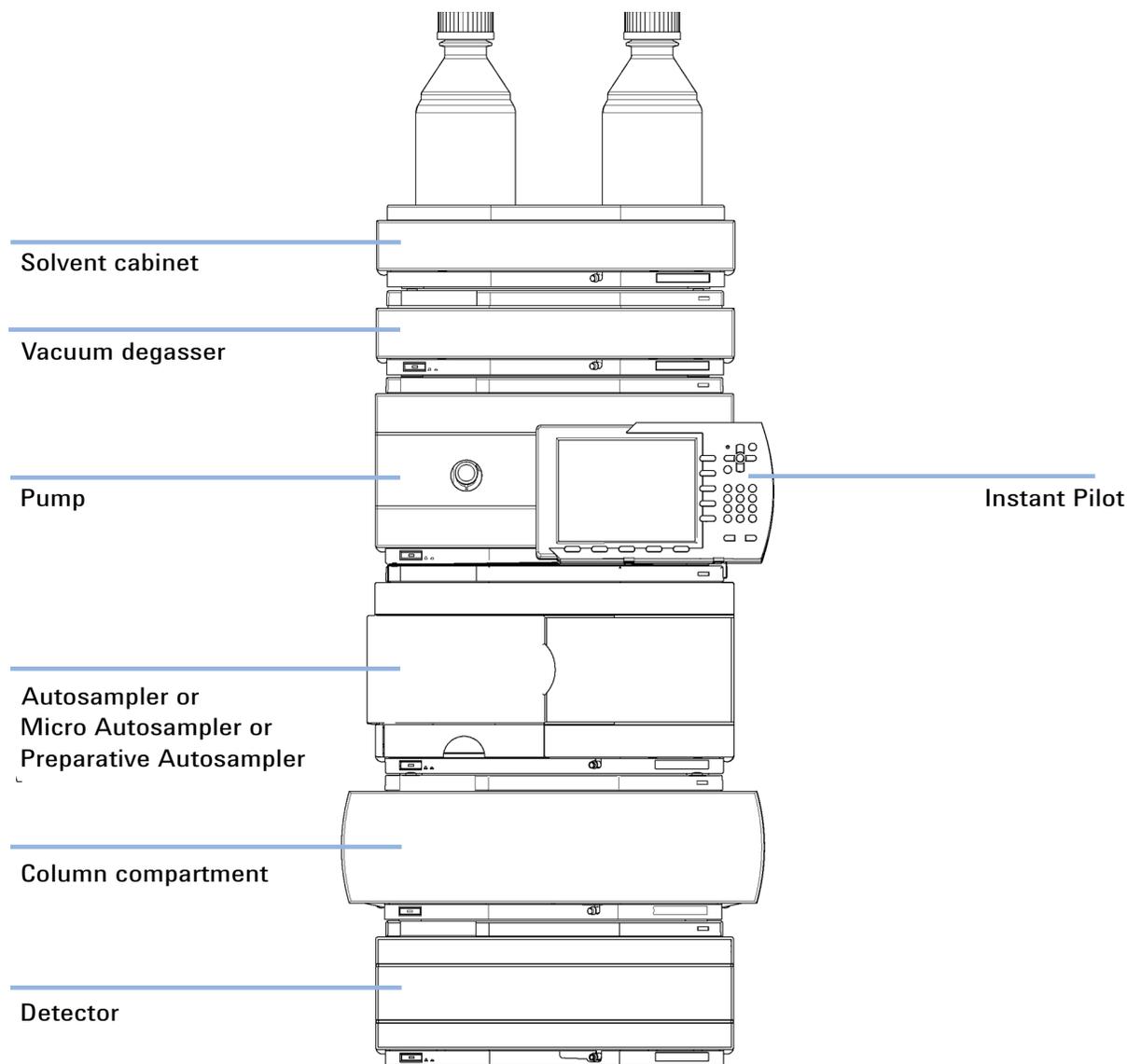


Figure 4 Recommended 1-Stack Configuration for 1260 Infinity (without Thermostat, analytical scale)



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

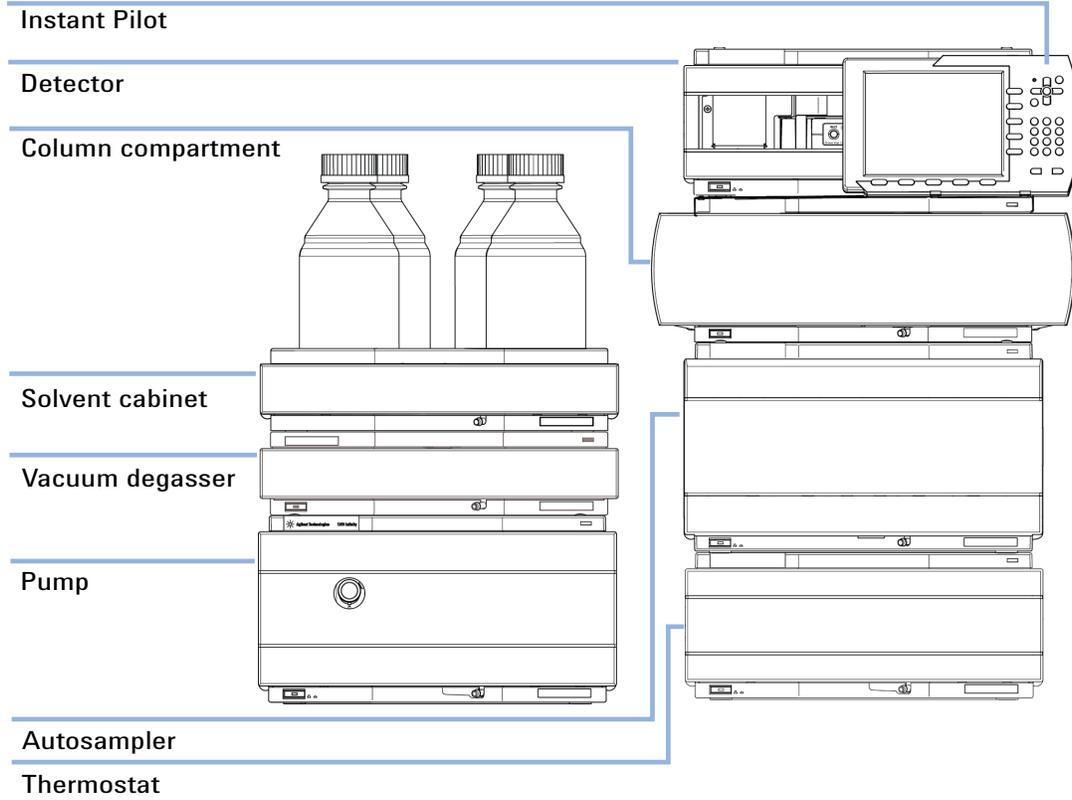


Figure 5 Recommended 2-Stack Configuration for 1260 Infinity (with Thermostat, analytical scale)



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

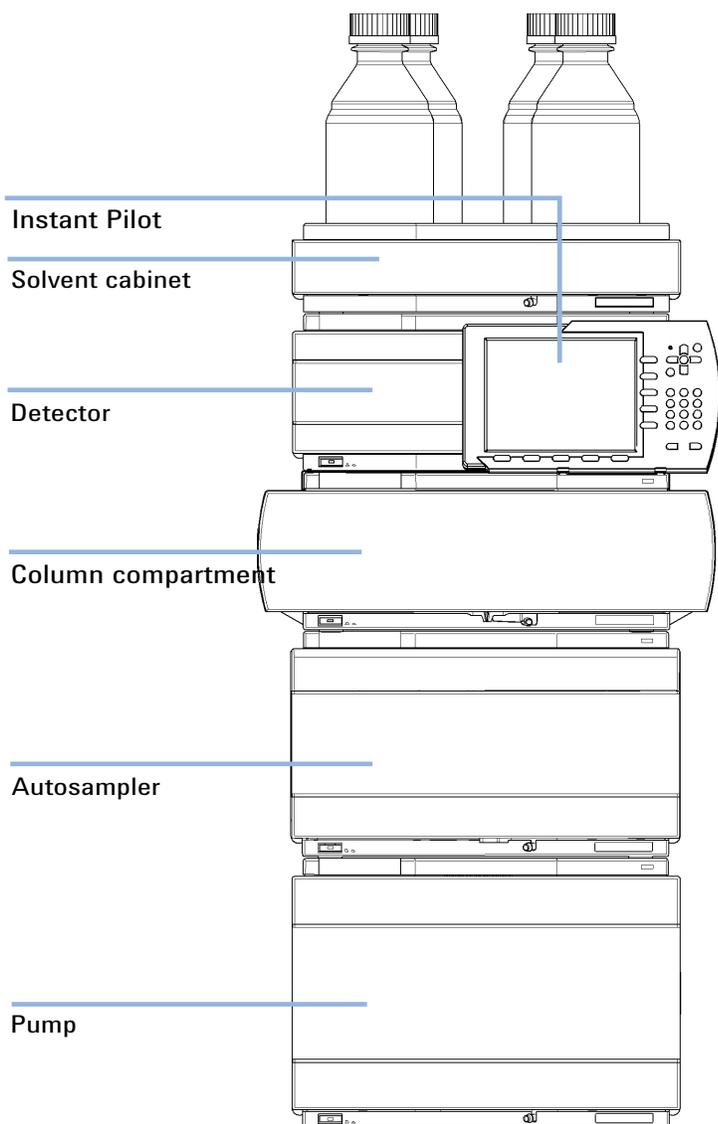


Figure 6 Recommended stack configuration for 1290 Infinity (front view)



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

Instant Pilot

Detector

Column compartment

Solvent cabinet

Pump

Autosampler

Thermostat for the ALS (optional)

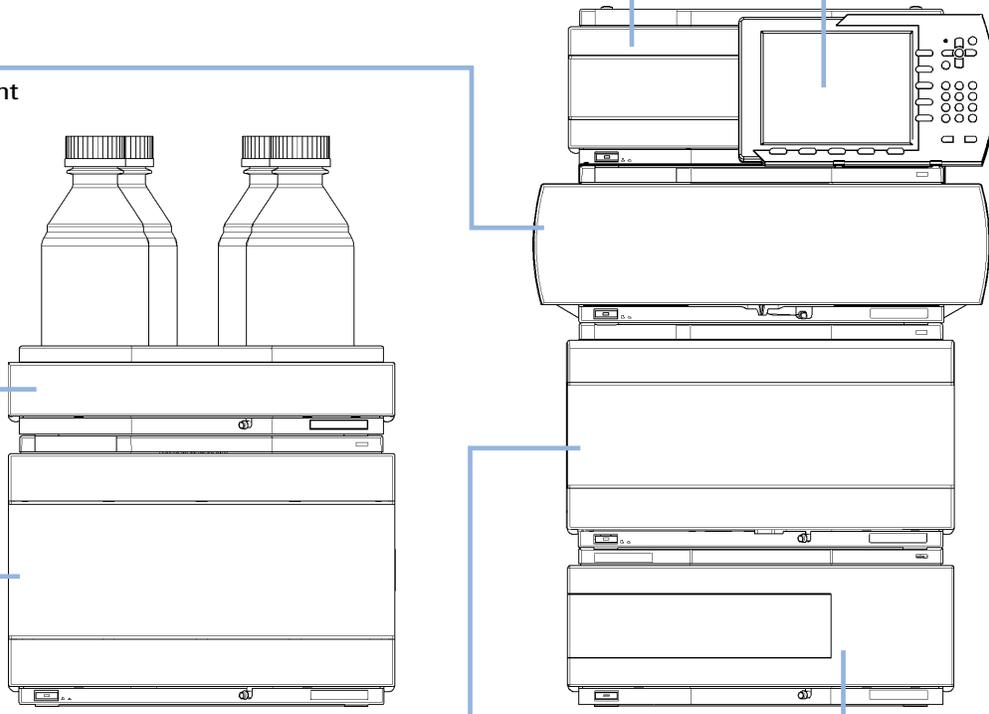


Figure 7 Recommended two stack configuration for 1290 Infinity (front view) [.]



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

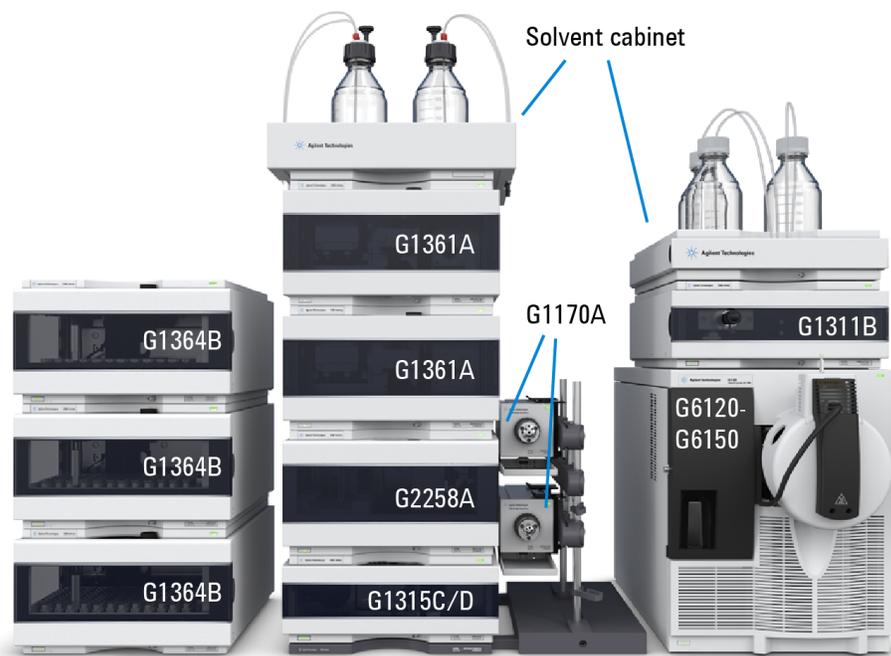


Figure 8 Stack configuration for Agilent 1260 Infinity Purification Solution, combined system with UV- and MS-Detection



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

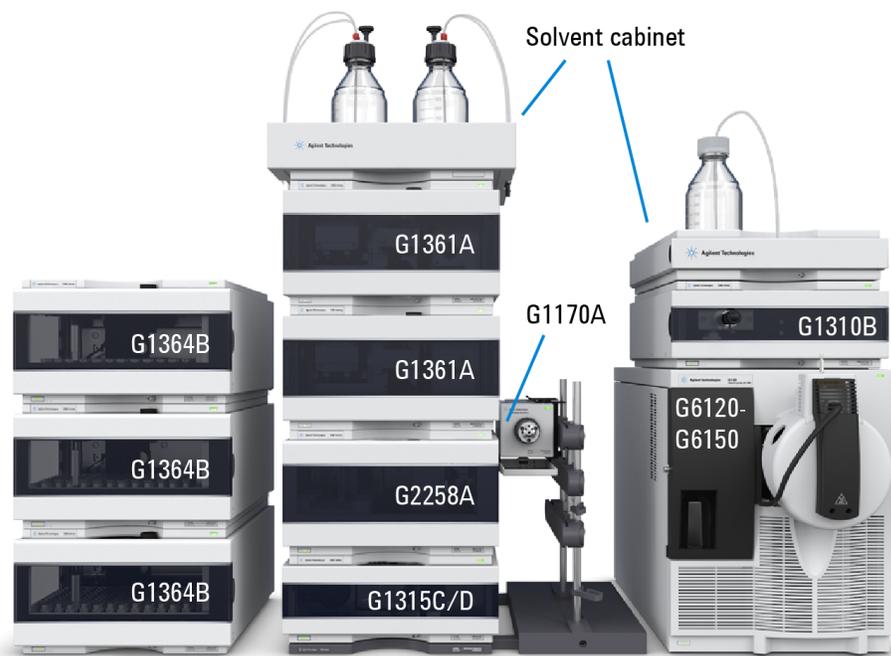


Figure 9 Stack configuration for Agilent 1260 Infinity Purification Solution with UV and MS detection



1290 Infinity LC/1260 Infinity LC
Site Preparation Checklist

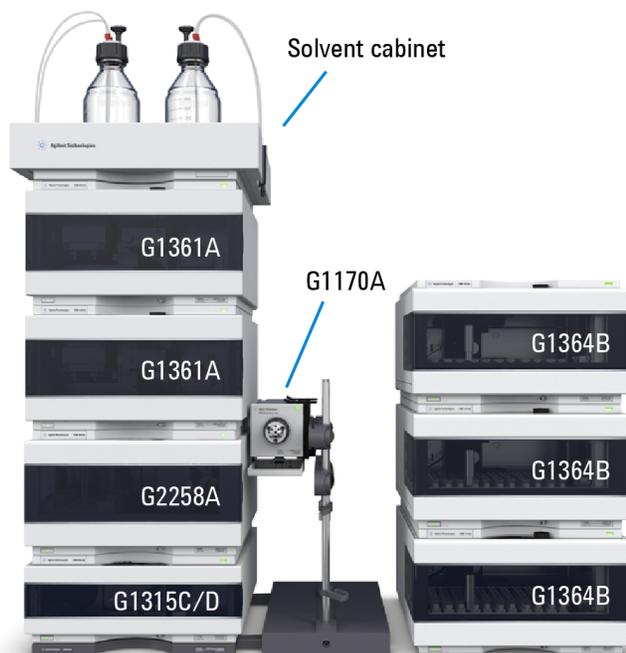


Figure 10 Stack configuration for Agilent 1260 Infinity Purification Solution with UV detections

NOTE

The Agilent 1260 Infinity Purification Solution requires special stack configurations. For details, refer to the *Agilent 1260 Infinity Purification Solution - System User Guide* and the *Agilent 1260 Infinity Purification Solution - Installation Checklist*.

Separate recommendations may be required for ELSD and Method Development Solution.