



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



## 1260/1290 Infinity Series HPLC Site Preparation Checklist

Module	Instrument Description
G1379B	1260 Infinity Micro Degasser
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

- 1 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
G1330B	18.5	40.7	14.4	5.5	43.5	17	34.5	13.5



Instrument Description	Weight	Height	Depth	Width
G4227A	8.2	18.1	14.4	5.5
G1316A/C	11.2	22.5	14	5.5
G1314B/C/E/F	11	25	14	5.5
G1315C/D, G1365C/D	11.5	26	14	5.5
G1321B/C	11.5	25.4	14	5.5
G4212A/B	11.5	26	14	5.5
G1362A	17	38	18	7
G4260A/B	11	24.2	41.5	16.3
G4261A/B	13	28.6	41.5	16.3



## 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, G4220A, G4225A, G4226A	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
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:  $1 \text{ W} = 3.413 \text{ BTU/h}$

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



Instrument Description	Line Voltage & Frequency (V, Hz)	Maximum Power Consumption (VA)	Maximum Power Consumption (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
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



## 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>

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



## 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.

#### 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.

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.

**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.

#### Further requirements

The 1260 Infinity ELSD (G4260B) and the 1290 Infinity ELSD (G4261B) are both equipped with keypads to allow detector parameters to be adjusted and stored. Should PC control be required the 1260 Infinity ELSD (G4260B) requires an RS232C interface cable to be connected from the detector to the PC. The 1290 Infinity ELSD (G4261B) 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.

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

During normal operation the carrier solvent is evaporated as it passes through the instrument and must be extracted safely at the rear of the unit. The exhaust from the instrument (Tubing, PVC, 13 mm id) must be extracted to a fume hood or similar solvent disposal unit. 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.

## 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 11 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 <sup>1</sup> for 6520A/B, 6530, 6538, 6540	99.99 % pure or better and hydrocarbon free <sup>2</sup>	5.5 – 6.9 bar <sup>2</sup> (80 – 120 psi)	Up to 4 L/min (240 L/h)
High pressure air source <sup>1</sup> for 6550	99.99 % pure or better and hydrocarbon free <sup>2</sup>	5.5 – 6.9 bar <sup>2</sup> (80 – 120 psi)	Up to 10 L/min (600 L/h)

<sup>1</sup> Air source must be able to deliver air at a constant pressure.

<sup>2</sup> 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.



## G4277A 1290 HTS, G4278A 1290 HTC

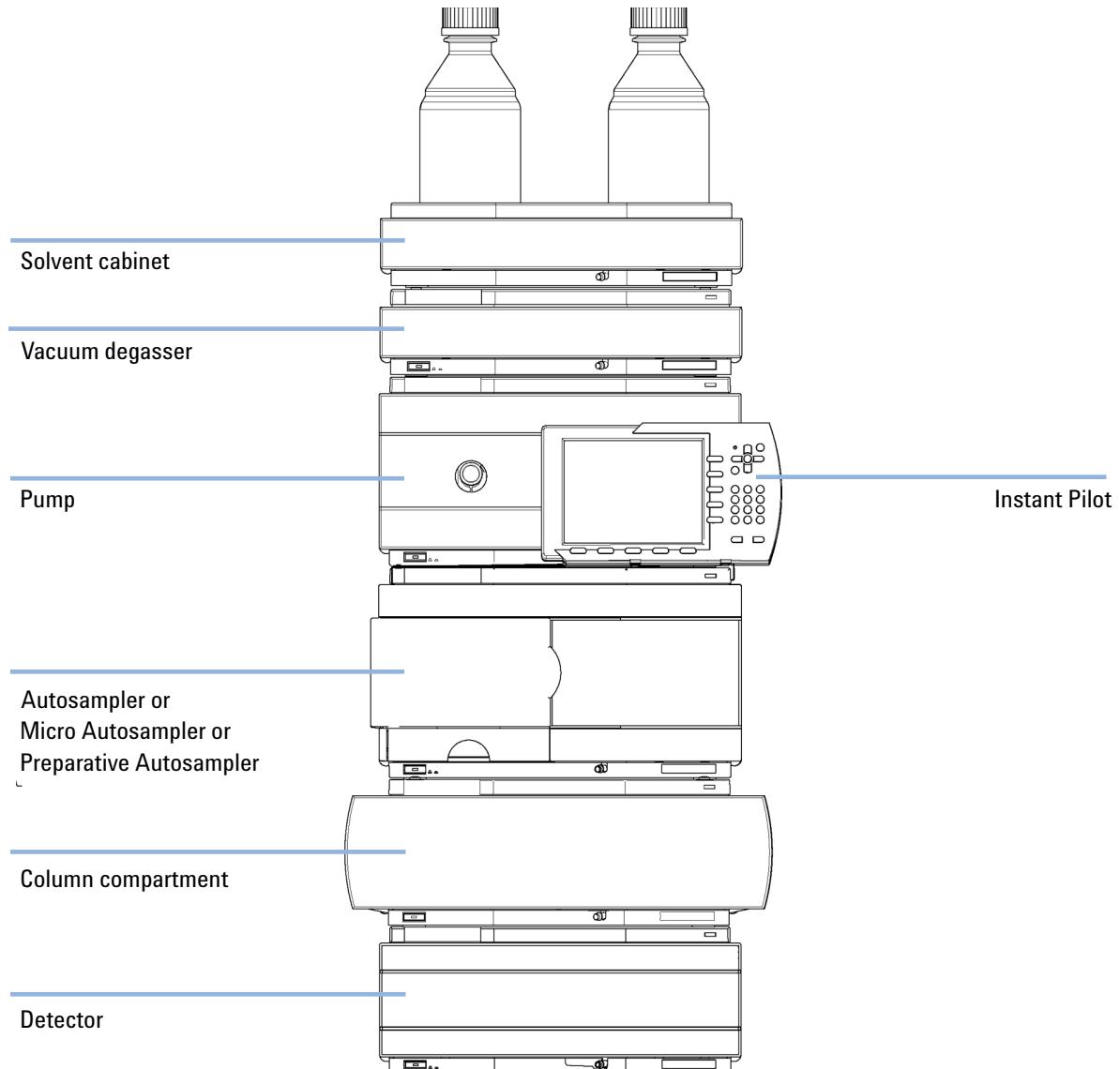
### Module Stacking

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

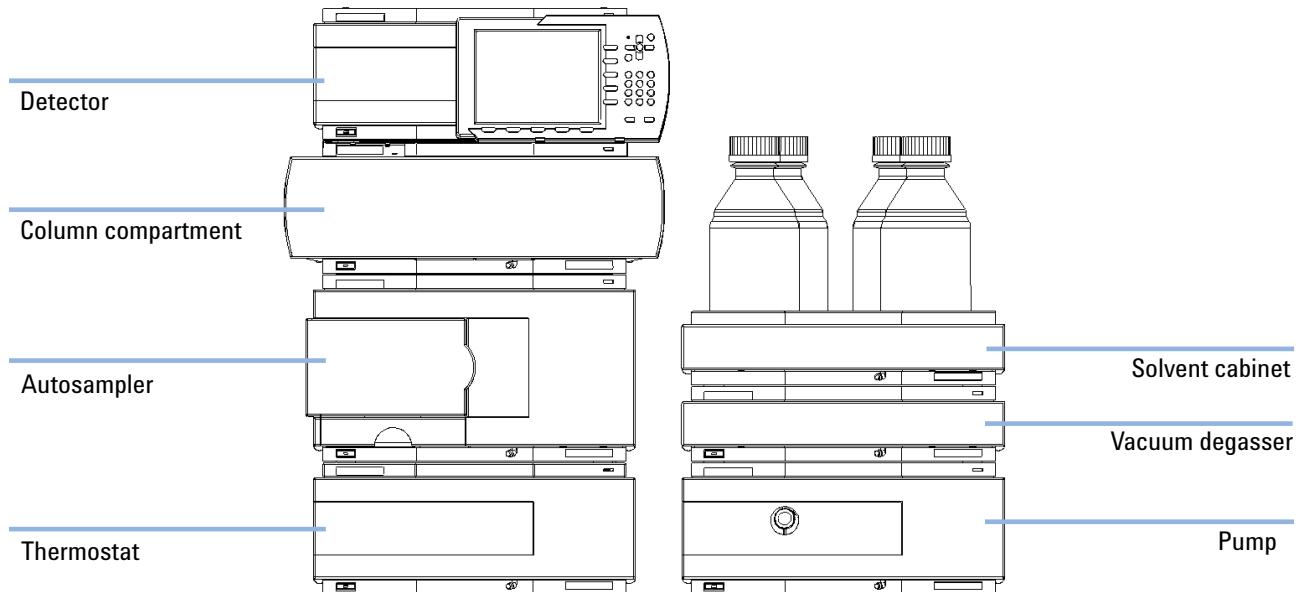
**To avoid excessive delay volumes from the pump to the injection valve and from the injection valve to the LC columns:**

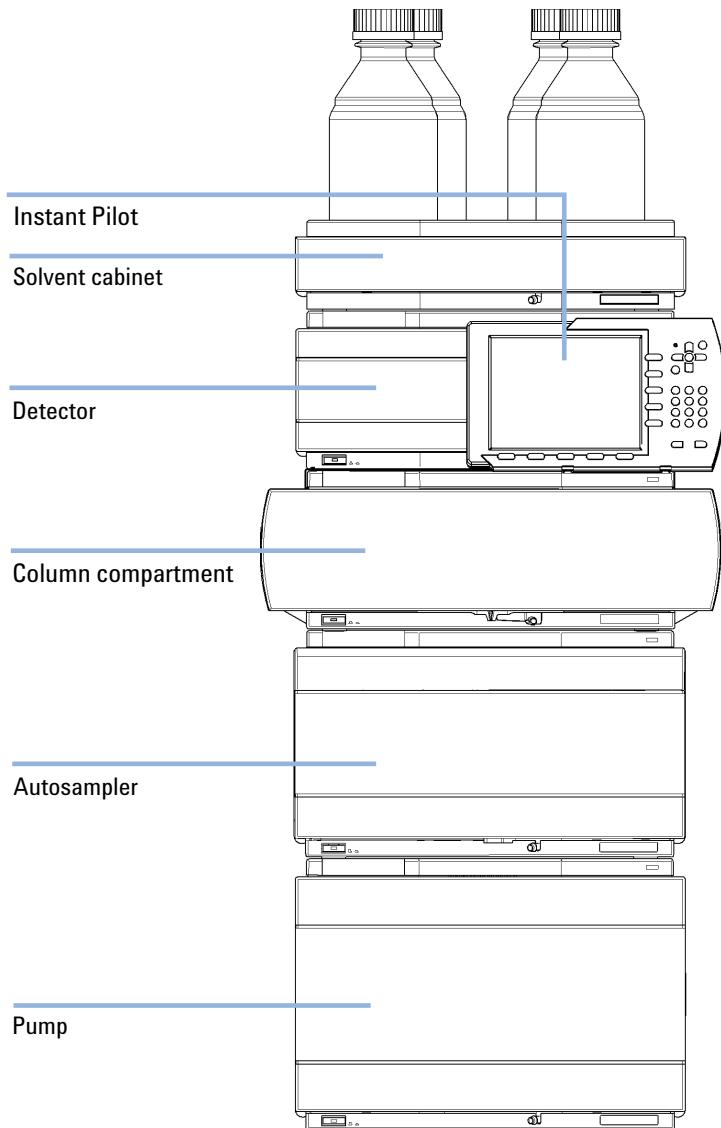
- Install the LC Injector HTS/HTC as close as possible to the 1290 Infinity LC stack.
- Move the injection valve on the x-rail to the side, where the LC stack is installed.
- When using a two-stack configuration, the LC Injector HTS/HTC should be placed next to the stack that includes the 1290 Infinity 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.

## Stack Configurations



**Figure 1** Recommended 1-Stack Configuration for 1260 Infinity (without Thermostat)

**1260/1290 Infinity Series HPLC  
Site Preparation Checklist****Figure 2** Recommended 2-Stack Configuration for 1260 Infinity (with Thermostat)



**Figure 3** Recommended stack configuration for 1290 Infinity with binary pump (front view)

1260/1290 Infinity Series HPLC  
Site Preparation Checklist

Instant Pilot

Detector

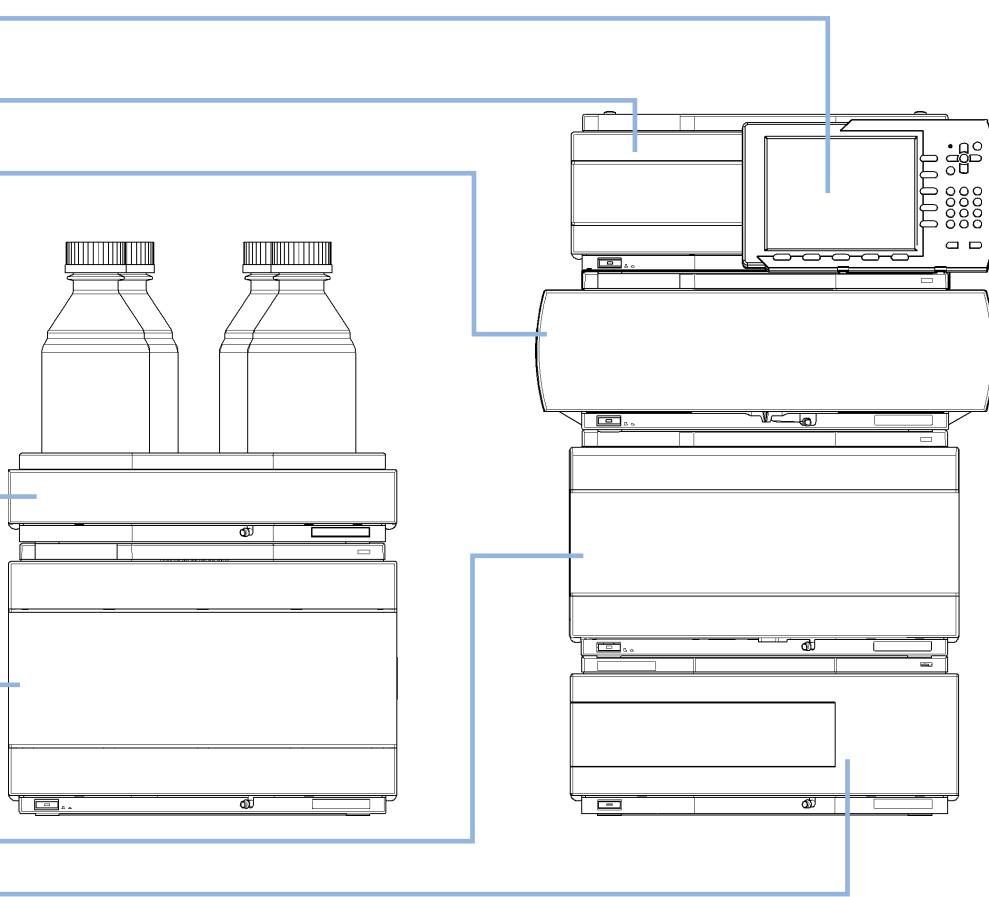
Column compartment

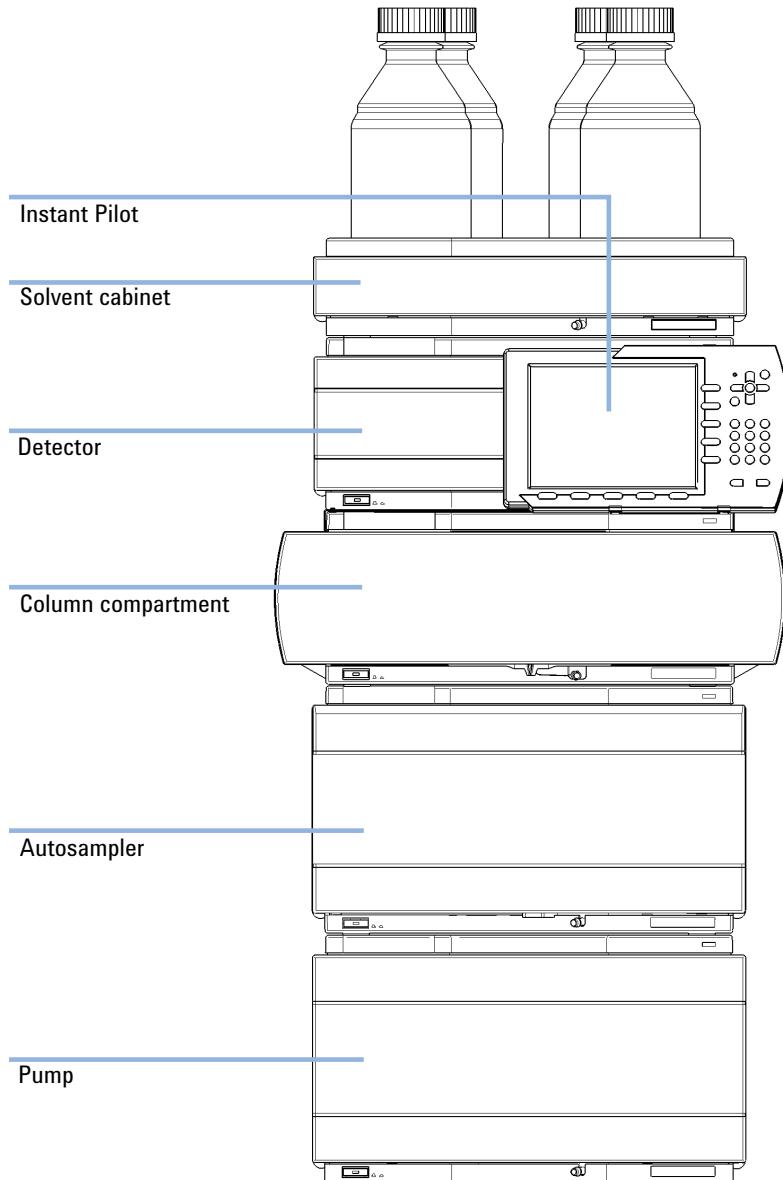
Solvent cabinet

Pump

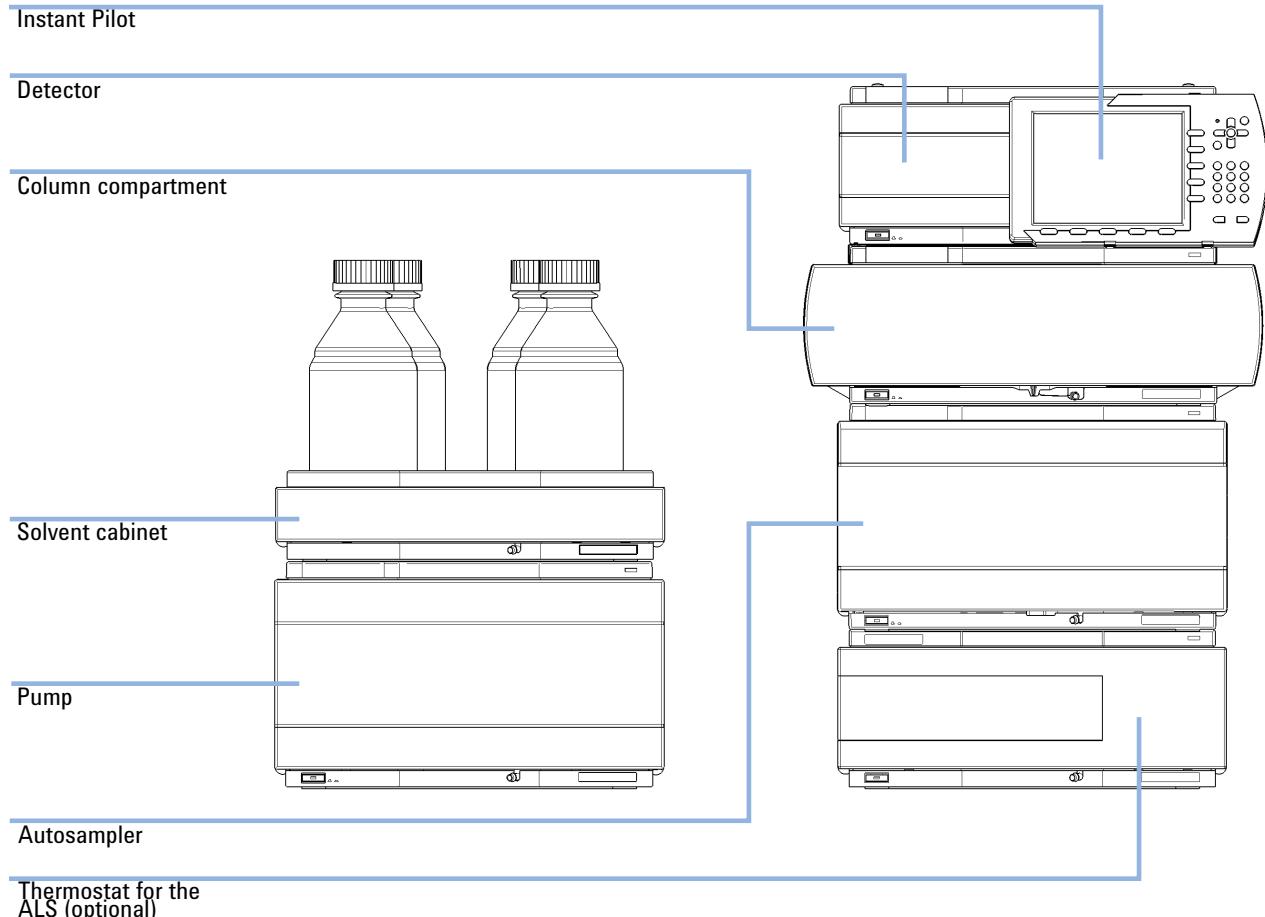
Autosampler

Thermostat for the ALS (optional)

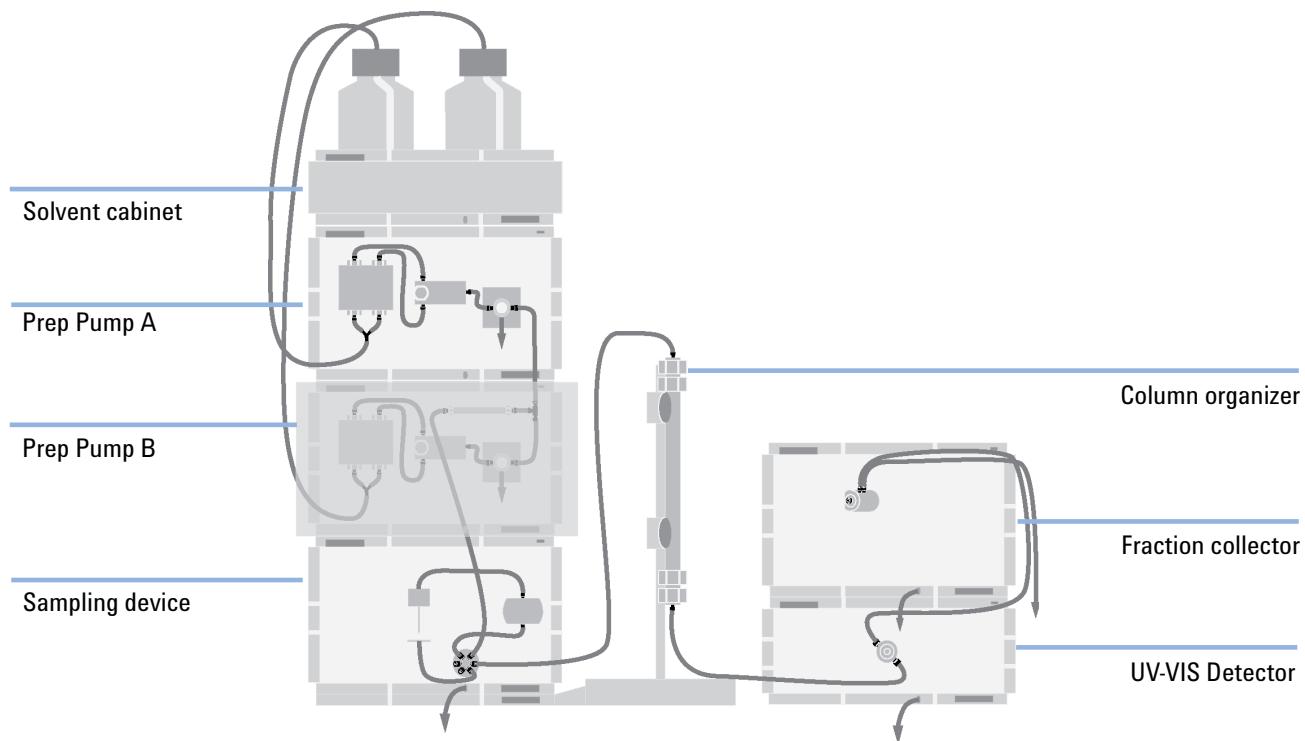
**Figure 4** Recommended two stack configuration for 1290 Infinity with binary pump (front view)



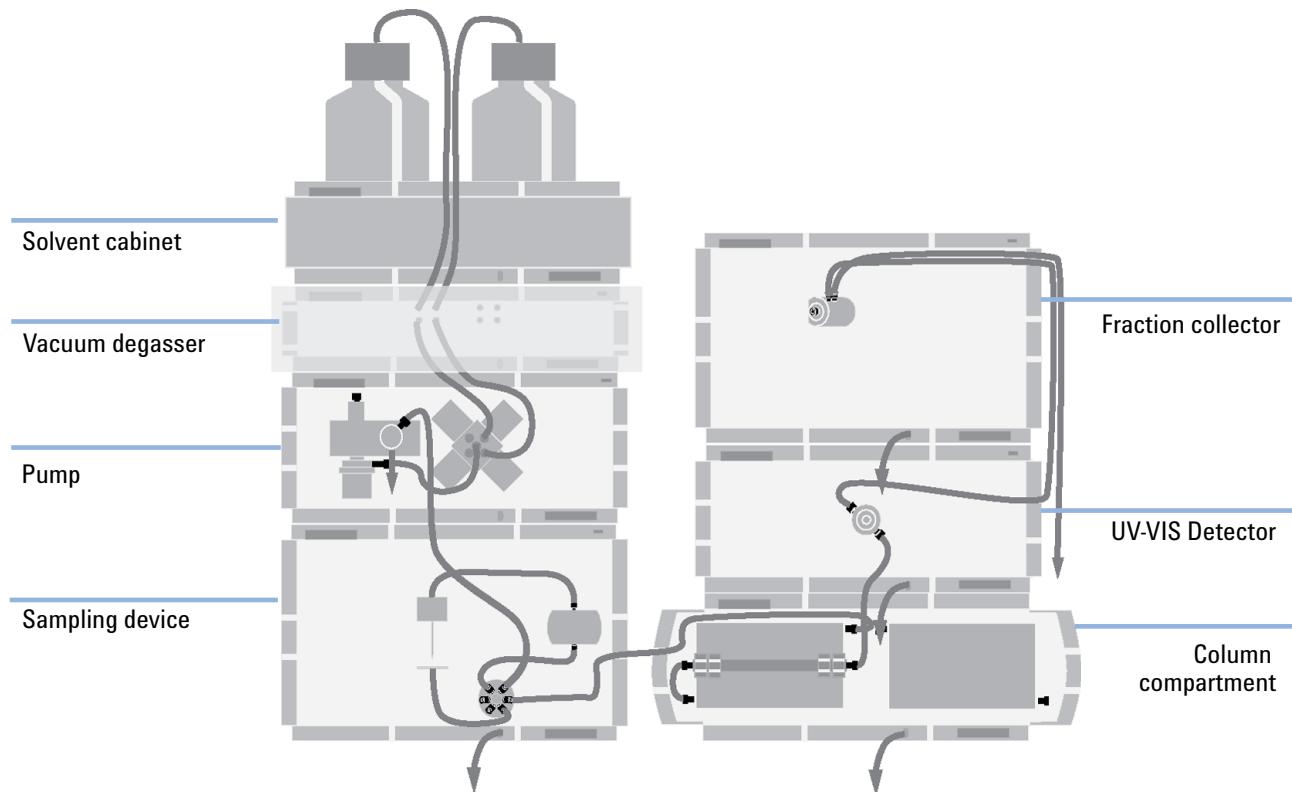
**Figure 5** Recommended stack configuration for 1290 Infinity with quaternary pump (front view)



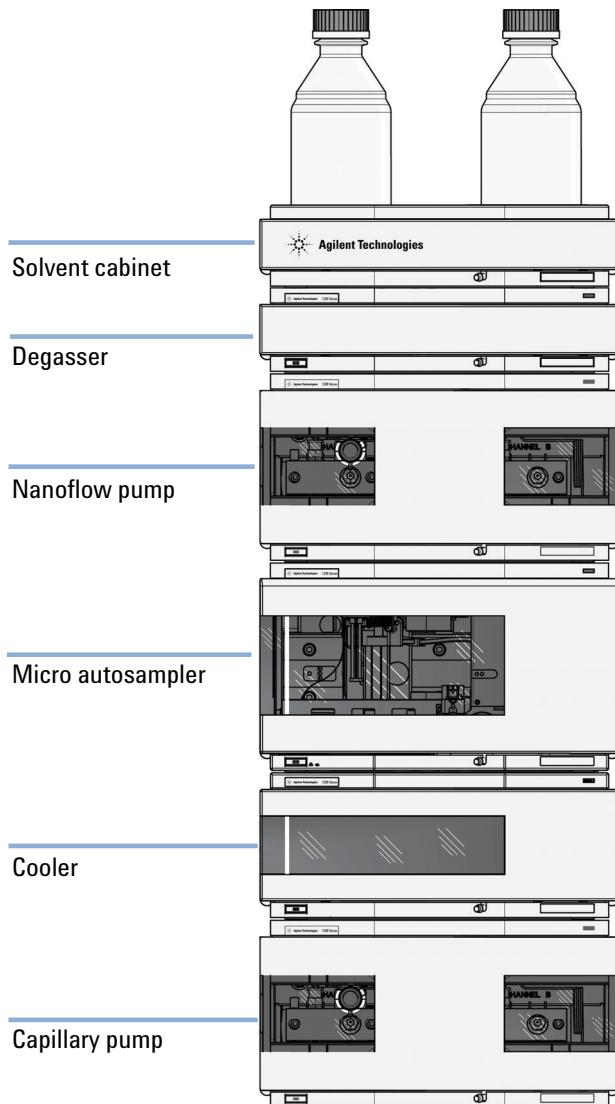
**Figure 6** Recommended two stack configuration for 1290 Infinity with quaternary pump (front view)



**Figure 7** Recommended 2-Stack configuration with fraction collector (preparative scale system)

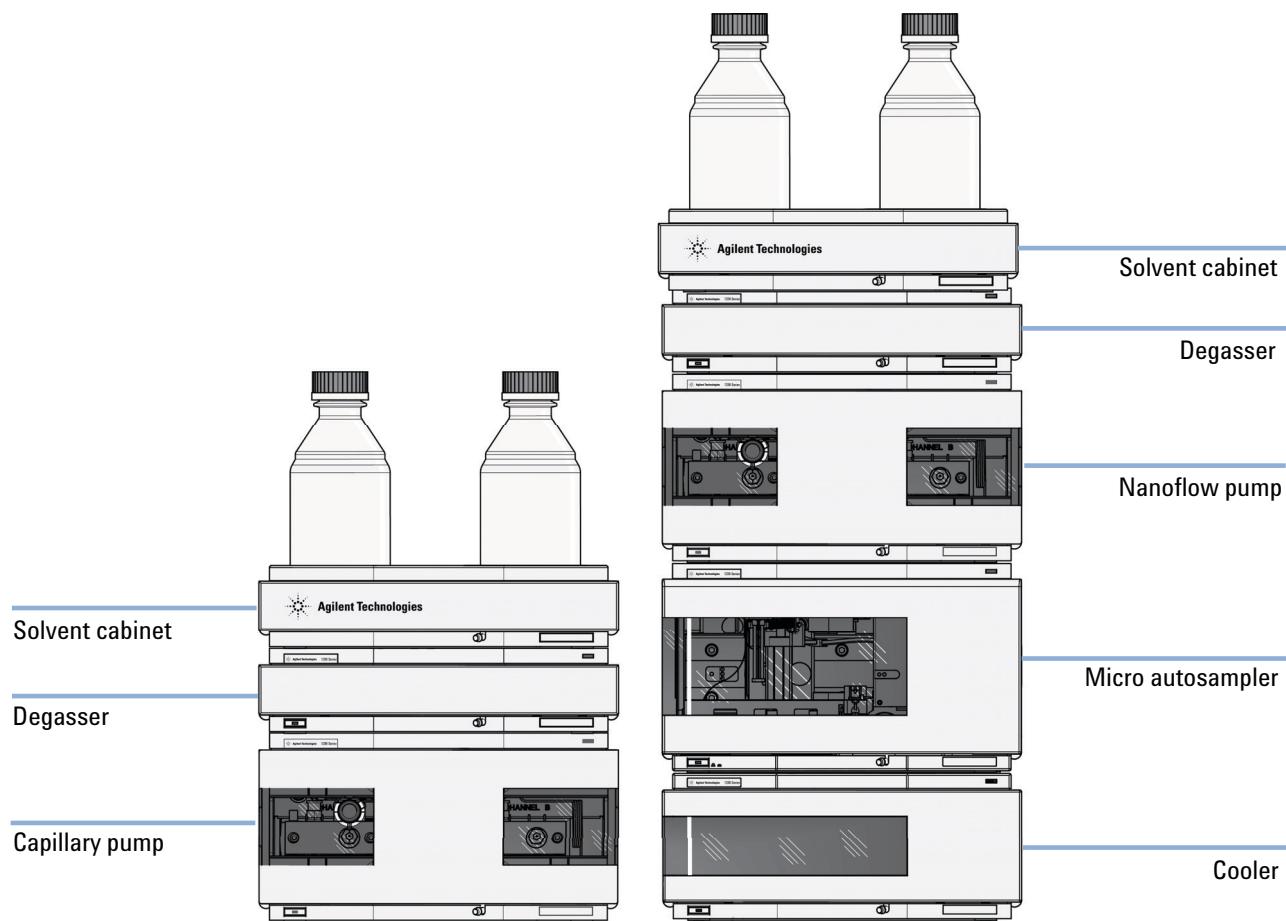


**Figure 8** Recommended 2-Stack configuration with fraction collector (analytical scale system)

1260/1290 Infinity Series HPLC  
Site Preparation Checklist

**Figure 9** Recommended single stack configuration for HPLC-Chip MS

## 1260/1290 Infinity Series HPLC Site Preparation Checklist



**Figure 10** Recommended 2-stack configuration for HPLC-Chip MS



**Figure 11** Recommended stack configuration for 1290 Infinity LC Injectors HTS/HTC

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