

Agilent 1290 Infinity II LC



System Manual and Quick
Reference



Agilent Technologies

Notices

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In This Book

This book describes the Agilent 1290 Infinity II LC.

1 Introduction

This chapter gives an introduction to the Agilent 1290 Infinity II LC, the underlying concepts and the features of the Agilent 1290 Infinity II LC.

2 Configuration Settings

This chapter describes how to configure the system.

3 Quick Start Guide

This chapter provides information on running an Agilent 1290 Infinity II LC.

4 Parts and Consumables

This chapter provides information on additional parts and consumables.

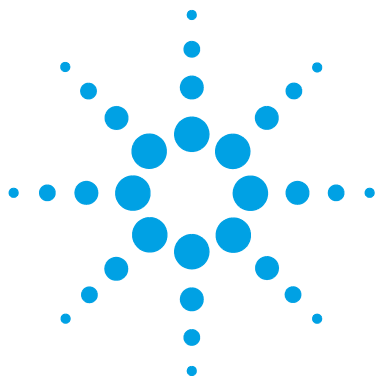
5 Appendix

This chapter provides addition information on safety, legal, and web.

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This chapter gives an introduction to the Agilent 1290 Infinity II LC, the underlying concepts and the features of the Agilent 1290 Infinity II LC.



Product Description

The Agilent 1290 Infinity II LC system has a high reliability and robustness, and improves analytical, instrument, and laboratory efficiency.

Its separation and detection performance delivers analysis data of high quality - the perfect front-end for high-end LC/MS systems.

Highest throughput for any application is achieved through high sample capacity and fast injection cycles, combined with new levels of usability.

Additionally, seamless integration in existing infrastructure and smooth method transfer from legacy equipment enable non-disruptive transition to highest productivity and lowest cost of ownership.

Features of the Agilent 1290 Infinity II LC

- More chromatographic resolution: specially designed components in the sample flow path achieve low system dispersion.
- Higher peak capacity for challenging separations: switch easily between single dimension UHPLC and 2D-LC.
- Lower carryover for uncompromised data quality: multiwash capabilities of the 1290 Infinity II Multisampler reduce carryover to less than 10 ppm even for challenging compounds such as chlorohexidine.
- Unique detection capabilities: combine low detection limits with an ultra-wide dynamic range by using the new 1290 Infinity II HDR-DAD or 1290 Infinity II ELSD.
- Faster injection cycles with dual needle injection for higher sample throughput.
- Higher sample capacity per bench space: up to 6144 samples within the footprint of a standard Agilent stack.
- Significantly better usability: dead-volume-free UHPLC fluidic connections can be easily achieved with the new InfinityLab Quick Connect fittings.
- Flexibility for all applications: due to the wide power, temperature and automatically scalable injection range, gradient options and intelligent system emulation technology.
- Seamless transfer of methods between LCs, regardless of the brand – facilitated by Intelligent System Emulation Technology (ISET) delivering unchanged retention time and peak resolution.
- Seamless integration in your chromatography data system: Agilent's Instrument Control Framework (ICF) enables smooth control of Agilent LC instrumentation through third-party chromatography data systems.

System Components

The Infinity II LC System can be set up with two different types of pumps: with the Flexible Pump, combining the performance of a high-pressure mixing UHPLC pump with the flexibility of a low-pressure mixing UHPLC pump, or with the High Speed Pump, allowing you to run fast gradients for high laboratory efficiency.

The Infinity II LC System consists of the following components:

- High Speed Pump or Flexible Pump
- Multisampler or Vialsampler
- Multicolumn Thermostat
- Diode Array Detector or Variable Wavelength Detector
- Solvent Cabinet

The Agilent 1290 Infinity II LC is described in more detail in the following sections. All modules are stackable, see [“One Stack Configuration”](#) on page 22 and [“Two Stack Configuration”](#) on page 25.

For specifications, please refer to the individual module user documentation.

Flexible Pump

The Agilent 1290 Infinity II Flexible Pump improves your efficiency by combining the performance of a high-pressure mixing UHPLC pump with the flexibility of a low-pressure mixing UHPLC pump.

The new 1290 Infinity II LC power range has a high instrument efficiency, allowing you to run any HPLC and UHPLC method. ISET enables you to transfer existing methods from different instrument modules - current Agilent systems as well as instruments from other manufacturers.

The Agilent Inlet Weaver mixer, active damping or the optional Agilent Jet Weaver mixers for additional mixing capacity achieve high analytical efficiency.

The established multipurpose valve enhances laboratory efficiency by adding useful functionalities, for example, mixer in/out switch, filter backflush or automatic purge, and BlendAssist software simplifies your workflow with accurate buffer/additive blending.

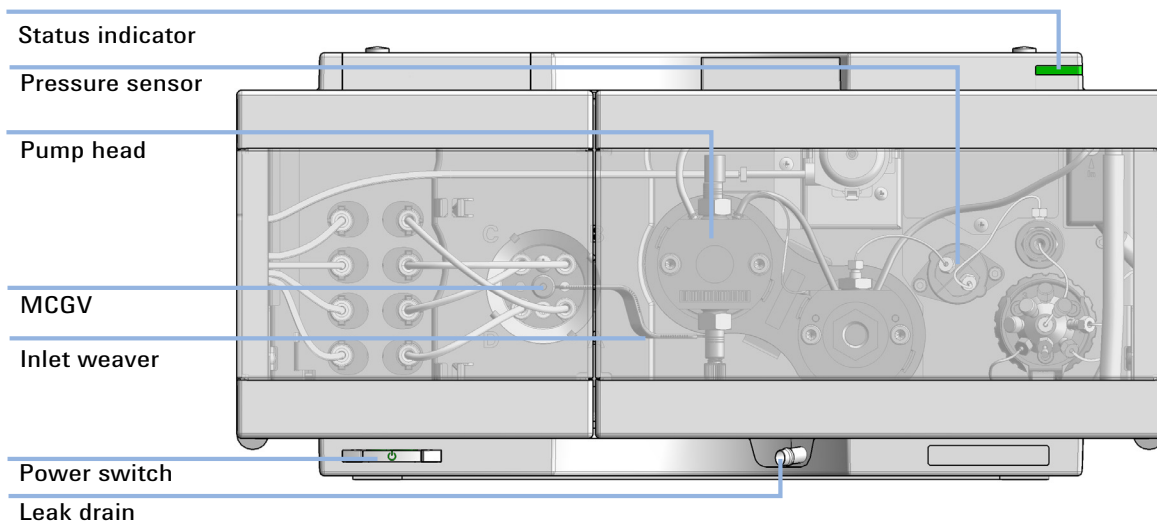


Figure 1 Overview of the Flexible Pump

High Speed Pump

The Agilent 1290 Infinity II High Speed Pump can enhance your efficiency through high speed and chromatographic performance.

A low-delay-volume mixer allows you to run fast gradients for narrow-bore applications for high laboratory efficiency.

The new 1290 Infinity II LC power range has a high instrument efficiency, allowing you to run any HPLC and UHPLC method.

The full ISET range enables you to transfer existing methods from different instruments, including current Agilent systems as well as instruments from other manufacturers.

Active damping, automatic purge valve, new ultralow dispersion kits or low delay-volume capability, combine to achieve high instrument and analytical efficiency.

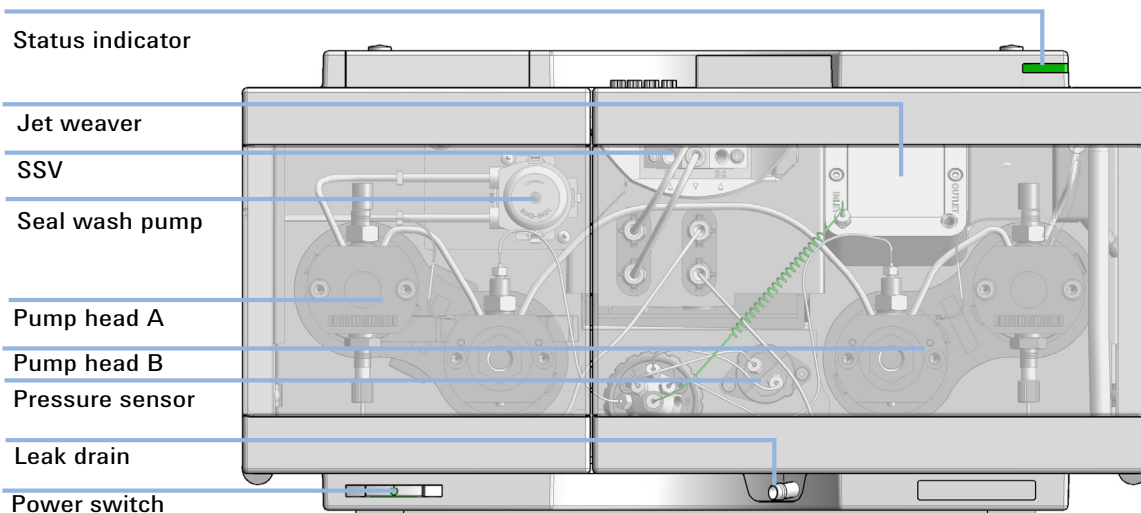


Figure 2 Overview of the High Speed Pump

Multisampler

The Agilent 1290 Infinity II Multisampler can handle both vials and microtiter plates with ease and efficiency up to 1300 bar system pressure, optimized on chromatographic performance.

In fact, this compact module has the capacity to house up to 6144 samples, all inside the Agilent stack footprint and the robotics to smoothly inject each into the chromatograph in turn.

With the multi-wash capability, you can reduce carryover to less than 9 parts per million.

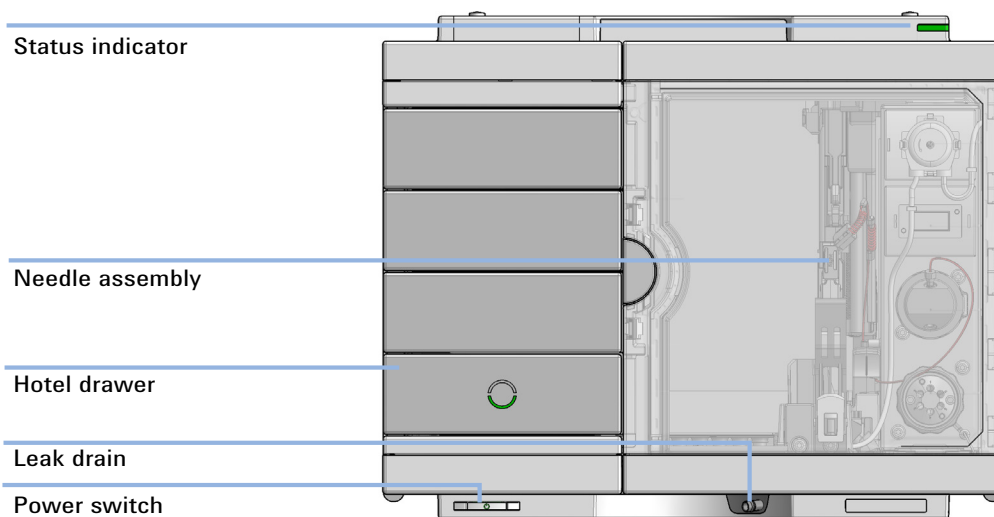


Figure 3 Overview of the Multisampler

Vialsampler

The Agilent 1290 Infinity II Vialsampler is designed for UHPLC applications up to 1300 bar. It provides the reliability, safety, and ease-of-use needed for routine pharmaceutical tasks and quality control, as well as for environmental and food analyses. It can house optionally the integrated column compartment for two LC columns with temperature control up to 80 °C as well as a sample cooler/sample thermostat for stable temperatures down to 4 °C or from 4 °C up to 40 °C, all within one module.

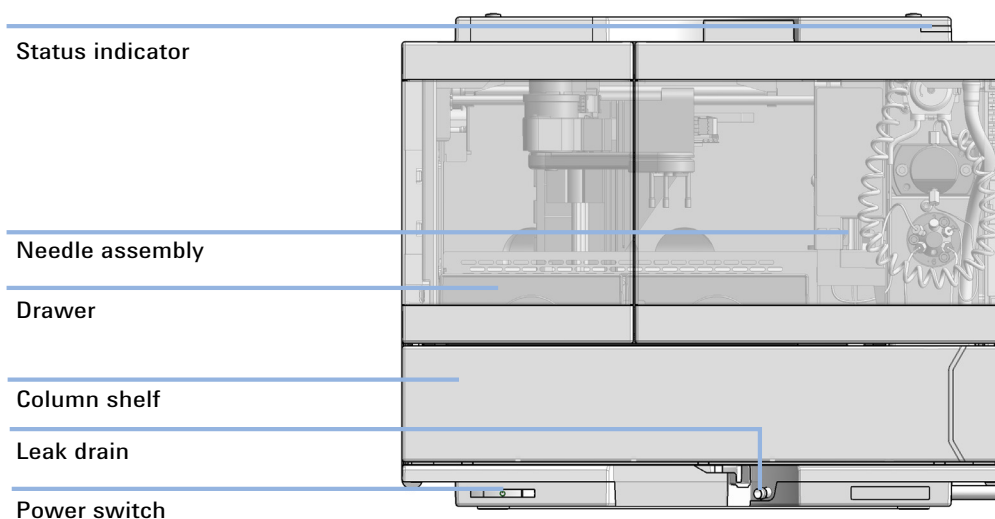


Figure 4 Overview of the Vialsampler

Multicolumn Thermostat

The Agilent 1290 Infinity II Multicolumn Thermostat (MCT) facilitates precise column thermostating over a broad temperature range with cooling down to 20 below ambient and heating up to 110 °C.

This capability provides high flexibility for optimized speed and enhanced selectivity of LC separations. Ultrahigh-pressure valves enable a wide range of applications such as column selection from eight columns in a single MCT, sample preparation for analyte enrichment or matrix removal, alternating column regeneration – and many more.

The MCT matches perfectly with all InfinityLab LC Series systems and can also be combined with previous 1260 and 1290 Infinity Series modules.

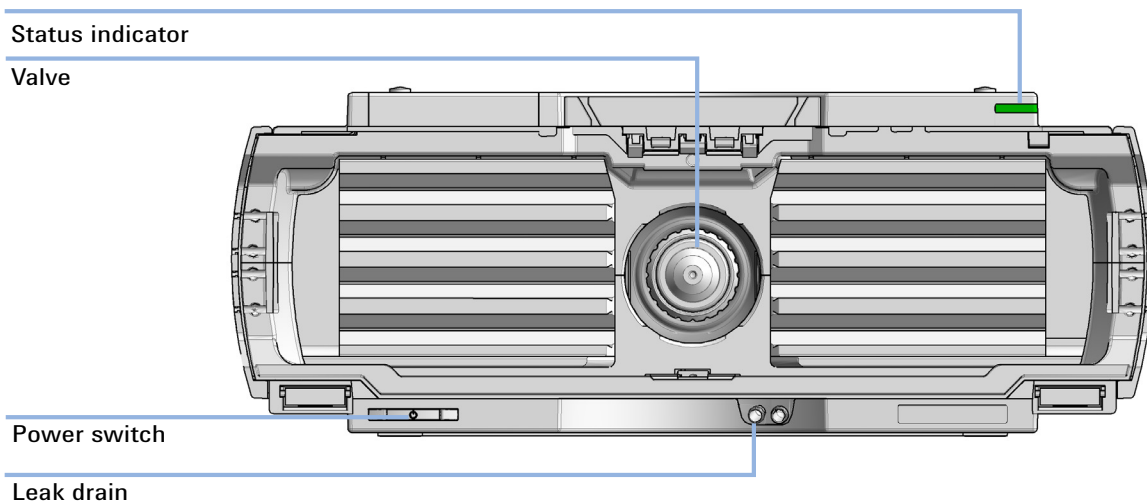


Figure 5 Overview of the Multicolumn Thermostat

Diode Array Detector (DAD)

The Agilent 1290 Infinity II Diode Array Detector (DAD) is based on the Agilent Max-Light cartridge cell with optofluidic waveguides that improve light transmission to near 100% efficiency without sacrificing resolution caused by cell dispersions effects.

With typical detector noise levels of $< \pm 0.6 \mu\text{AU}/\text{cm}$ the 60 mm flow cell gives up to 10 times higher sensitivity than detectors with conventional flow cells.

Any compromising refractive index and thermal effects are almost completely eliminated, resulting in significantly less baseline drift for more reliable and precise peak integration.

For fast separations, this detector has multiple wavelength and full spectral detection at sampling rates up to 240 Hz.

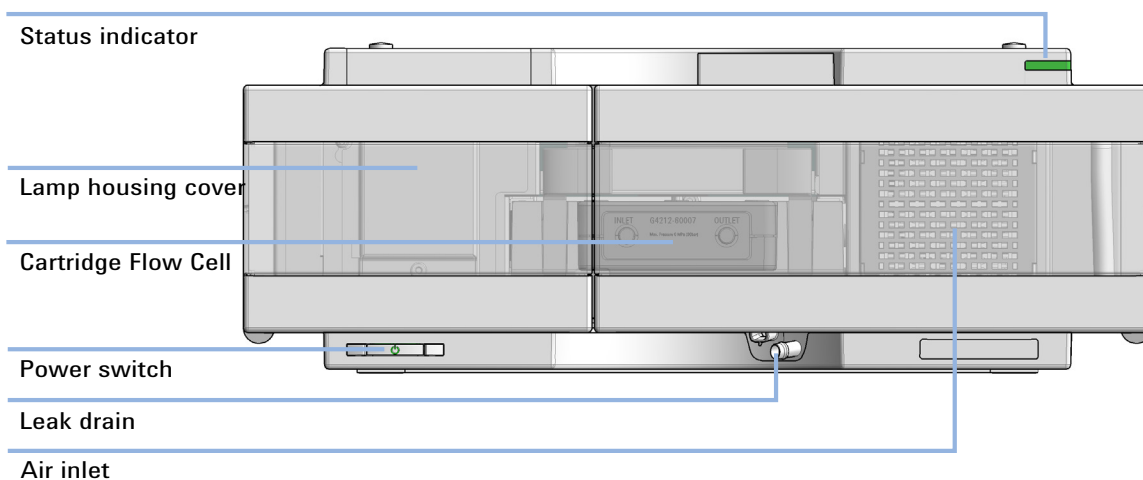


Figure 6 Overview of the detector

Variable Wavelength Detector (VWD)

The Agilent 1290 Infinity II Variable Wavelength Detector (VWD) is the most sensitive and fastest detector in its class.

Time-programmable wavelength switching provides sensitivity and selectivity for your applications.

More sample information can be acquired in the dual wavelength mode.

Low detector noise ($< \pm 1.5 \mu\text{AU}$) and baseline drift ($< 1 \cdot 10^{-4} \text{ AU/h}$) facilitates precise quantification of trace levels components.

High productivity can be achieved with fast analysis at up to 240 Hz data rates.

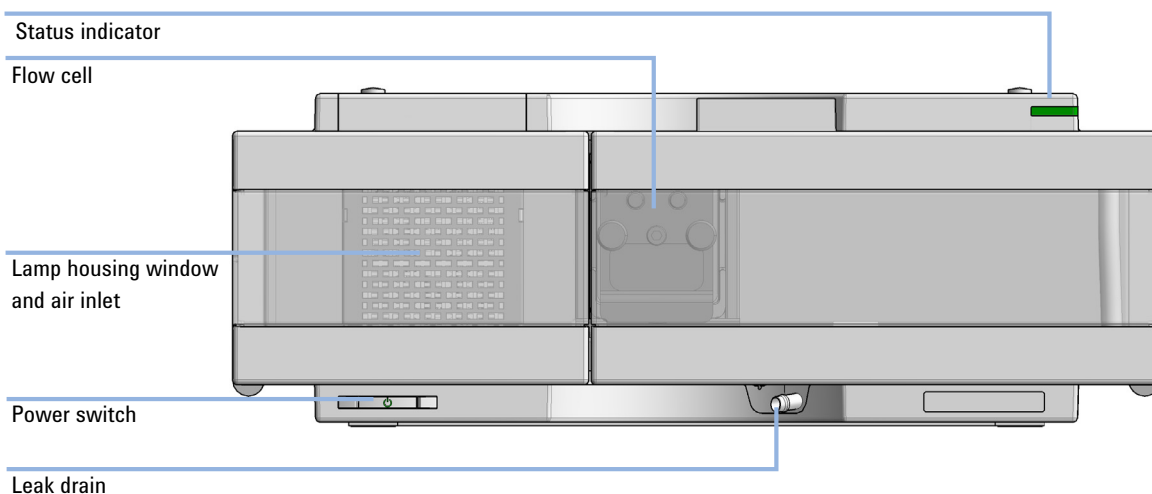


Figure 7 Overview of the detector

Solutions

2D-LC Solution

The Agilent 1290 Infinity II 2D-LC Solution matches separation performance with sample complexity. The solution offers intuitive software, completely pre-configured systems, and an easy starter kit.

Furthermore an easy switch between 1D-UHPLC and 2D-LC guarantees you highest usage of a single system.

The software is designed for fastest method setup in all available modes, whether it is heart-cutting 2D-LC, multiple heart-cutting 2D-LC or comprehensive 2D-LC.

Application areas are numerous and include pharmaceutical and biopharmaceutical (impurity) profiling, all -omics areas, analysis of food matrices, herbal medicine, polymer analysis, flavor analysis and many more.

High Dynamic Range DAD Solution

The Agilent 1290 Infinity II High Dynamic Range DAD Solution combines the signals from two diode array detectors (DAD). The DADs are assembled with different path length Max-Light flow cells. This combination offers a 30x wider linear UV-range.

The increased linear UV-range allows detection and quantification of all sample components in a single run, thus making it ideal for analysis of mixtures with widely different concentration levels.

Method Transfer Solution

The 1290 Infinity II Method Transfer Solution allows you to execute any legacy HPLC or latest UHPLC methods while achieving the same chromatographic results. It provides a seamless method transfer between LCs, regardless of brand.

The Intelligent System Emulation Technology (ISET) emulates the LC system on which the original method was developed, thus achieving the same retention times and peak resolution. Speed up your method development with UHPLC performance and then fine-tune your method by emulating the target system. Run your legacy methods with ISET while taking full advantage of the UHPLC speed, resolution, and sensitivity of the 1290 Infinity II LC.

Optimizing the Stack Configuration

You can ensure optimum performance by installing the system in one of the following configurations. These configurations optimize the system flow path, ensuring minimum delay volume.

Agilent InfinityLab Flex Bench

Agilent recommends to use the InfinityLab Flex Bench for all Agilent LC systems.

Main features:

- Increases flexibility in the lab
- Safe moving of LC
- Easy stack customization
- Included waste management

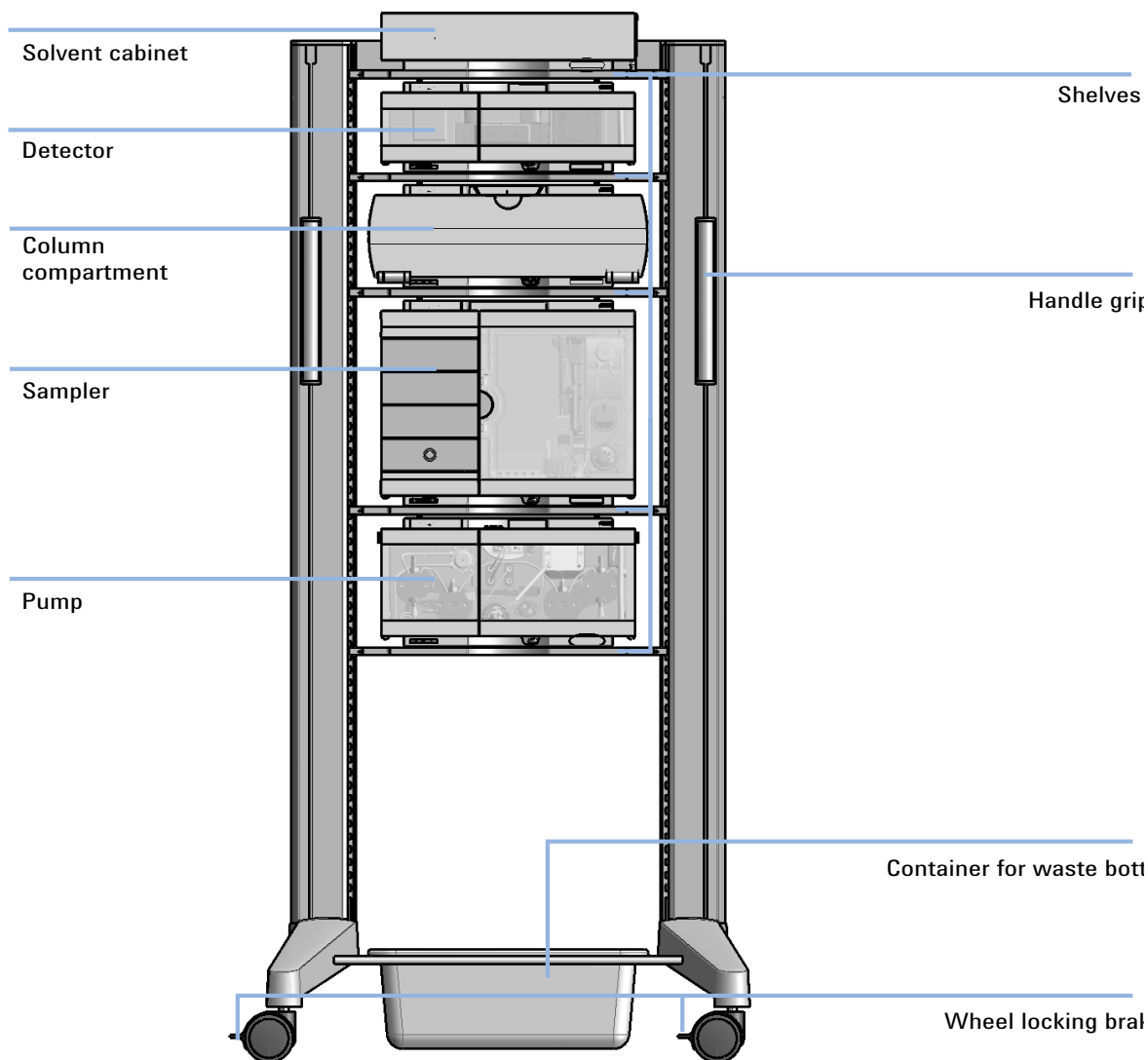


Figure 8 Agilent InfinityLab Flex Bench

One Stack Configuration

Ensure optimum performance by stacking the modules as shown exemplarily in [Figure 9](#) on page 22. This configuration optimizes the flow path for minimum delay volume and minimizes the bench space required.

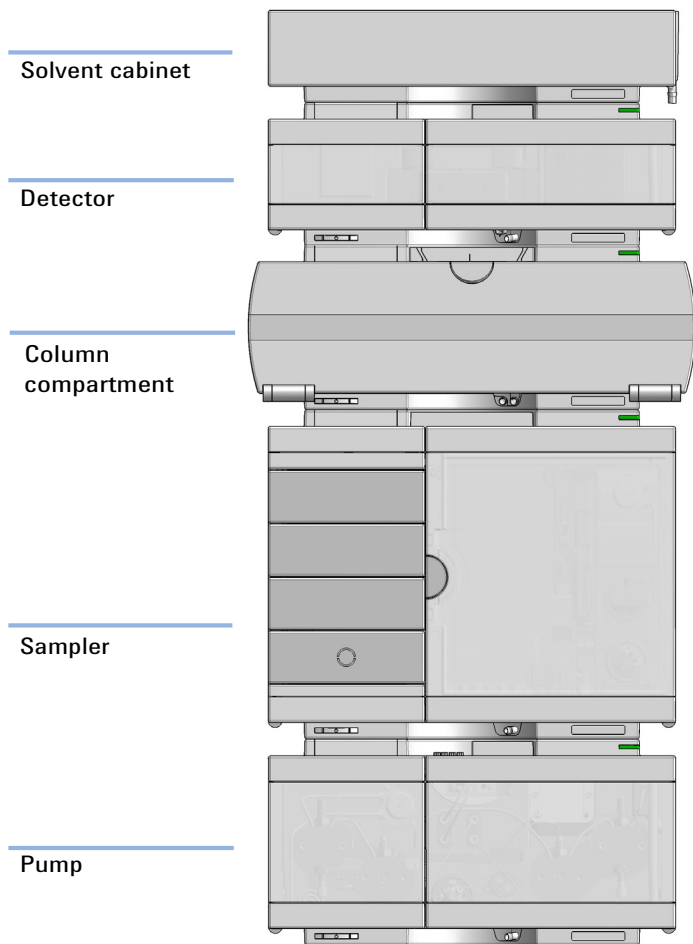


Figure 9 Single stack configuration (bench installation, example shows a multisampler)

Vialsampler stack configurations with integrated column compartment

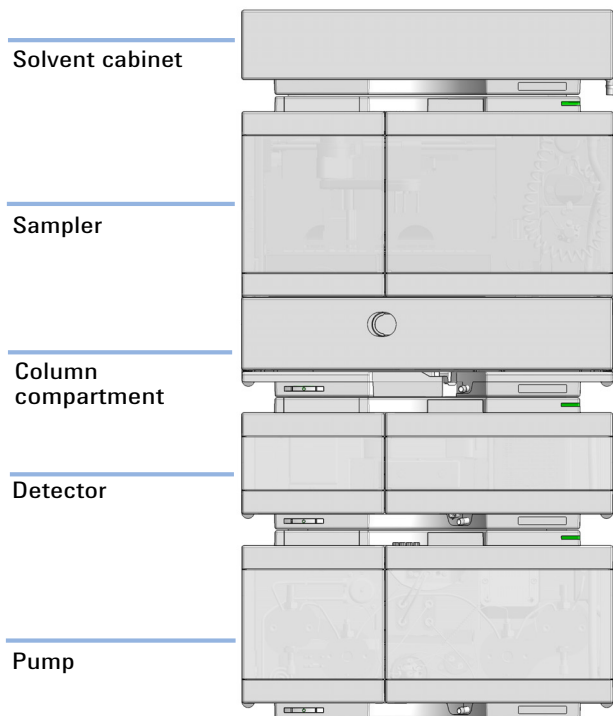


Figure 10 Single stack configuration (bench installation, example shows a vialsampler with optional ICC installed)

Vialsampler stack configurations

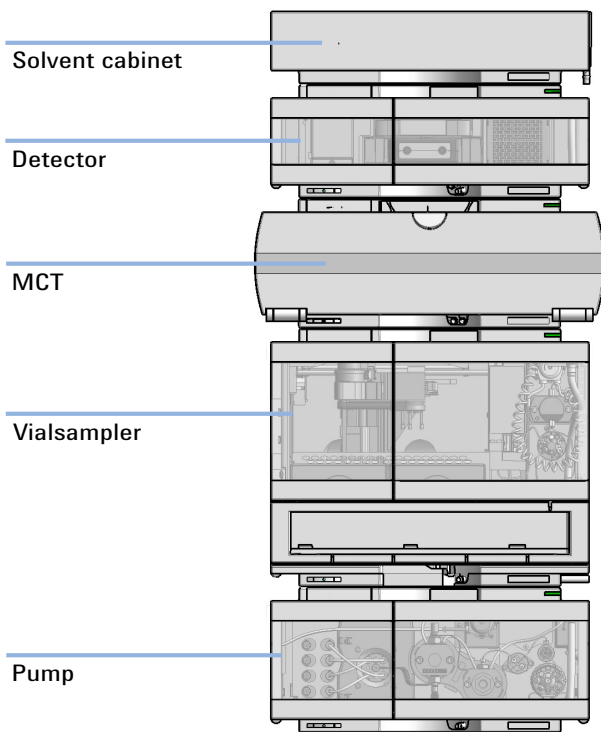


Figure 11 Stack Configuration with Vialsampler (column shelf installed)

Two Stack Configuration

To avoid excessive height of the stack (for example when using the system in combination with an additional detector) it is recommended to form two stacks.

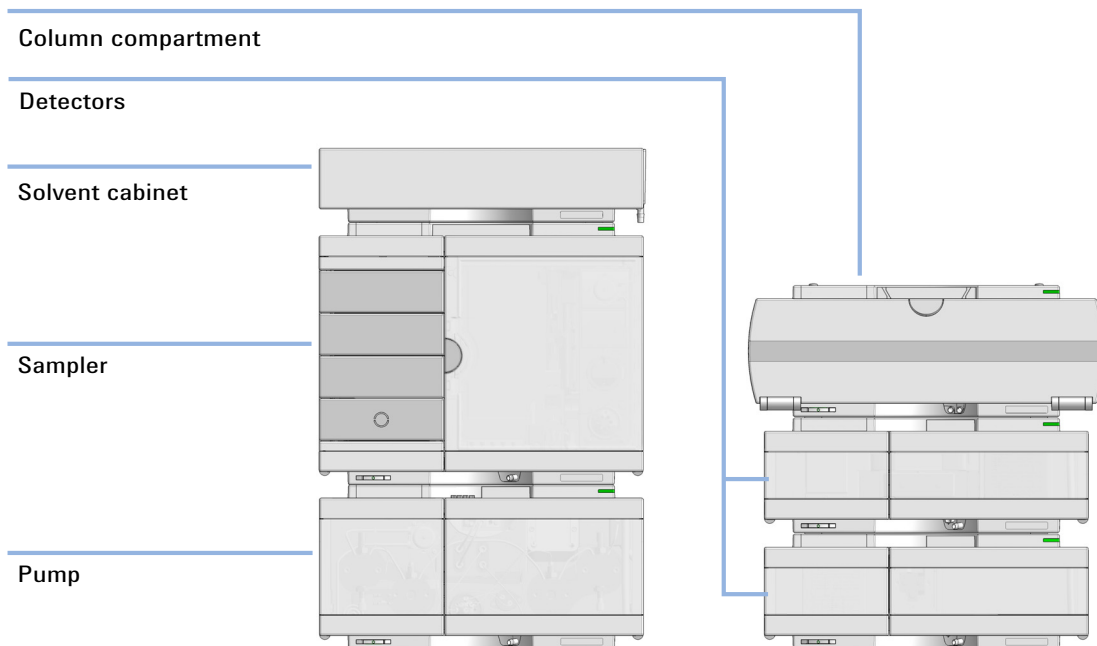


Figure 12 Two stack configuration (bench installation, example shows a multisampler)

Standard Capillary Setup

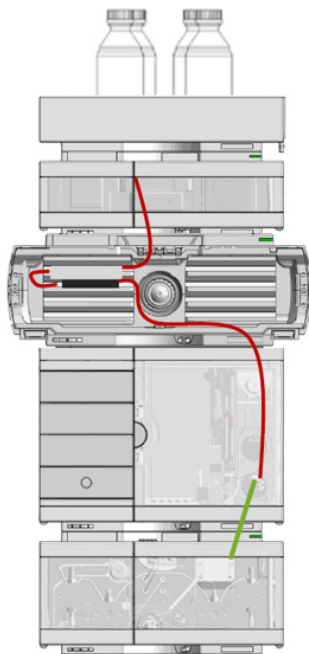


Figure 13 Standard capillary setup

Table 1 Capillary properties

Color	Inner diameter	$\mu\text{L per cm}$
Red	0.12 mm (0.005 inch)	0.113
Green	0.17 mm (0.007 inch)	0.227
Blue	0.25 mm (0.01 inch)	0.491
Orange	0.50 mm (0.02 inch)	

Leak and Waste Handling

The Agilent InfinityLab LC Series has been designed for safe leak and waste handling. It is important that all security concepts are understood and instructions are carefully followed.

The solvent cabinet is designed to store a maximum volume of 8 L solvent. The maximum volume for an individual bottle stored in the solvent cabinet should not exceed 2 L. For details, see the usage guideline for the Agilent Infinity II Solvent Cabinets (a printed copy of the guideline has been shipped with the solvent cabinet, electronic copies are available on the Internet).

All leak plane outlets are situated in a consistent position so that all Infinity and Infinity II modules can be stacked on top of each other. Waste tubes are guided through a channel on the right hand side of the instrument, keeping the front access clear from tubes.

The leak plane provides leak management by catching all internal liquid leaks, guiding them to the leak sensor for leak detection, and passing them on to the next module below, if the leak sensor fails. The leak sensor in the leak plane stops the running system as soon as the leak detection level is reached.

Solvent and condensate is guided through the waste channel into the waste container:

- from the detector's flow cell outlet
- from the Multisampler needle wash port
- from the Sample Cooler or Sample Thermostat (condensate)
- from the pump's Seal Wash Sensor (if applicable)
- from the pump's Purge Valve or Multipurpose Valve

1 Introduction

Leak and Waste Handling

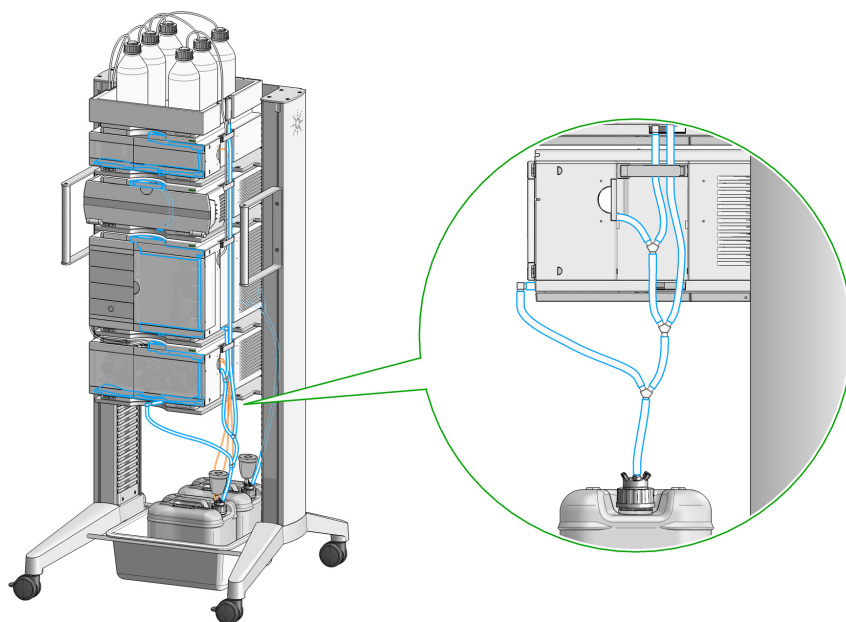


Figure 14 Infinity II Leak Waste Concept (Flex Bench installation)

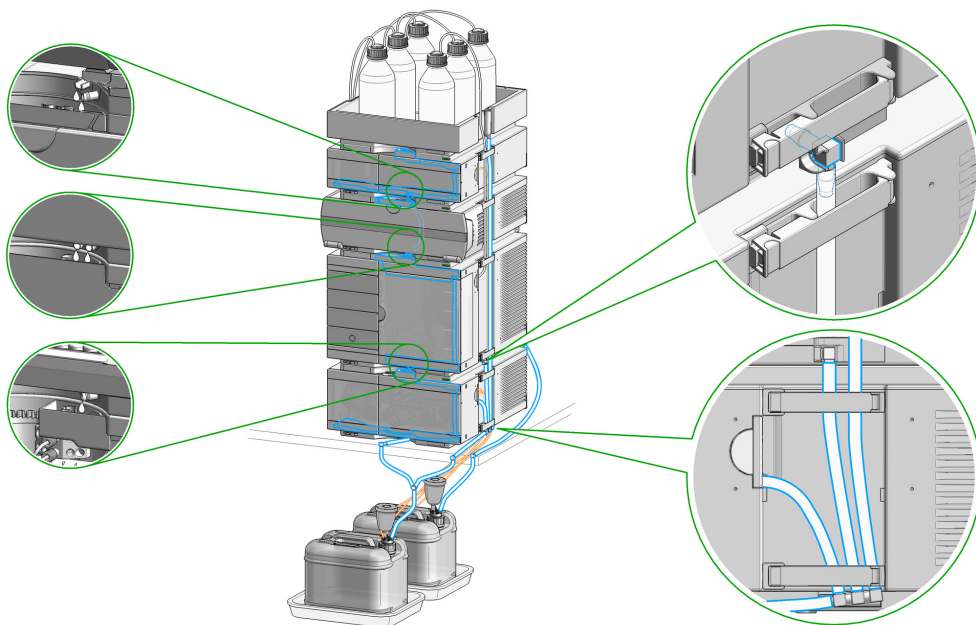


Figure 15 Infinity II Single Stack Leak Waste Concept (bench installation)

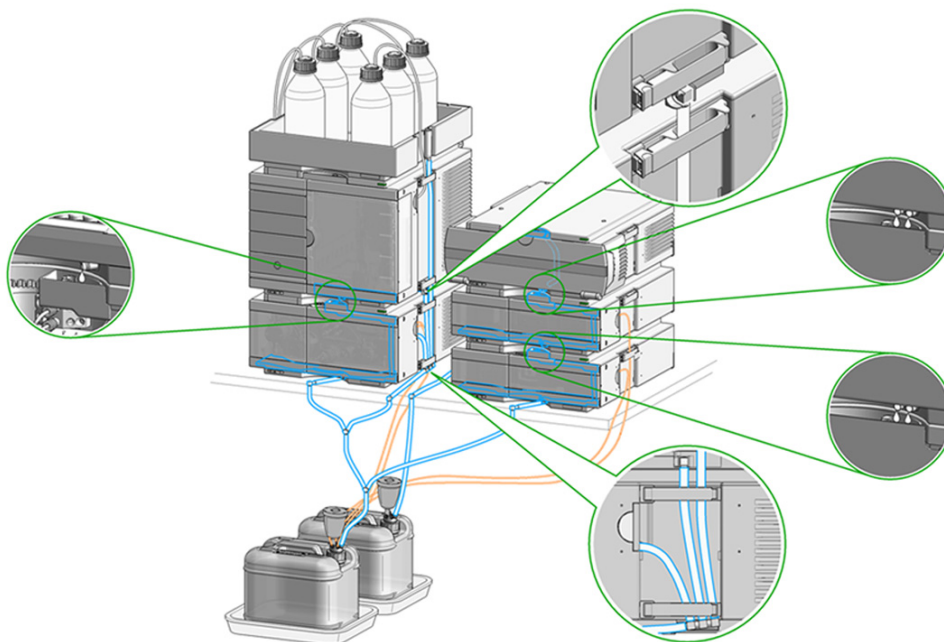
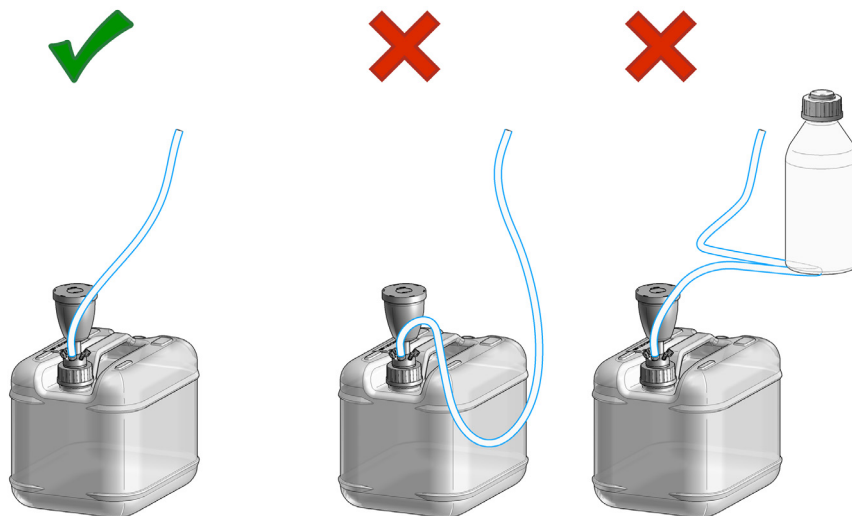


Figure 16 Infinity II Two Stack Leak Waste Concept (bench installation)

The waste tube connected to the leak pan outlet on each of the bottom instruments guides the solvent to a suitable waste container.

Waste Guidance



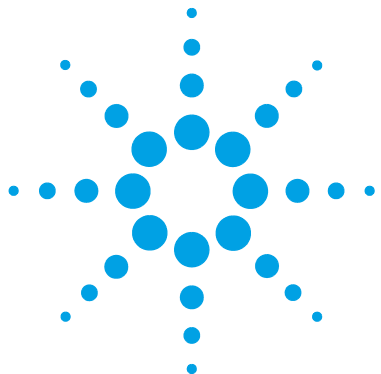
NOTE

The waste drainage must go straight into the waste containers. The waste flow must not be restricted at bends or joints.

Waste Concept

- 1 Agilent recommends using the 6 L waste can with 1 Stay Safe cap GL45 with 4 ports (5043-1221) for optimal and safe waste disposal. If you decide to use your own waste solution, make sure that the tubes don't immerse in the liquid.





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This chapter describes how to configure the system.



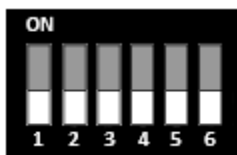
General Information on LAN Configuration

LAN configuration is executed from the module with direct LAN connection to the controller software. This must be the module (usually the detector) with the highest data rate.

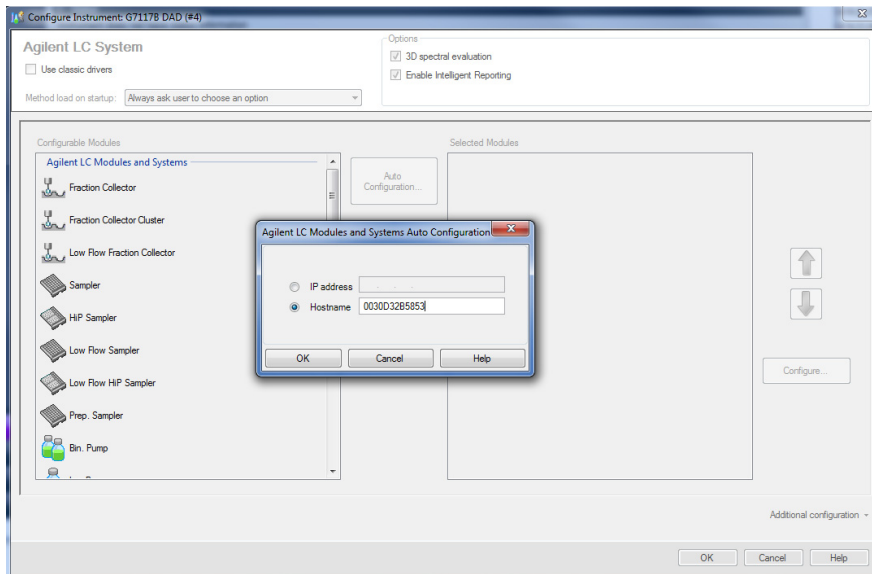
Instrument Configuration

Example shows an instrument configuration with a Diode Array Detector.

- 1** Set the switches of the Configuration switch at the rear of the module:
 - a** All switches DOWN: module uses the default IP address 192.168.254.11.



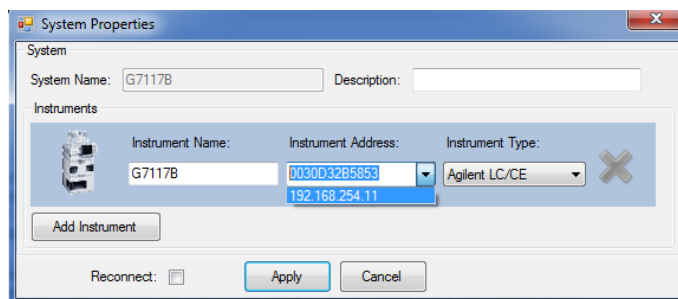
- b** Switch 4 UP and others DOWN: module uses DHCP.
 - c** Switch 5 UP and others DOWN: modules uses STORED address
- 2** Enter the setup information (MAC / IP address and/or Instrument Name).
 - a** Agilent OpenLab ChemStation (Configure Instrument):



2 Configuration Settings

Instrument Configuration

b Lab Advisor (Instrument Overview - Add Instrument):

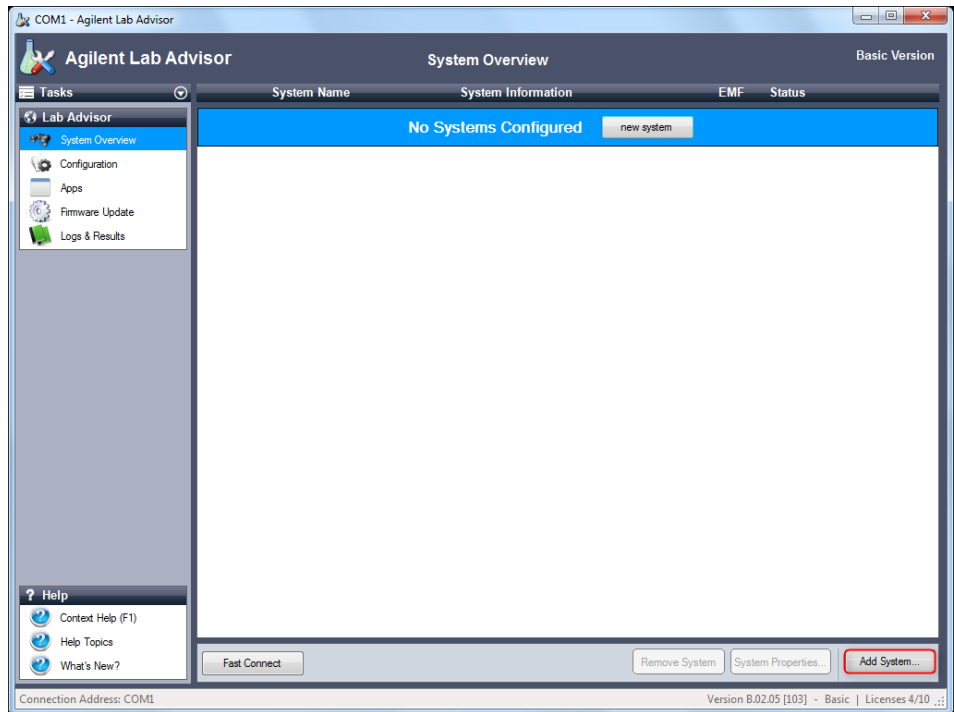


The screenshot shows the 'System Properties' dialog box with the 'Instruments' tab selected. The 'System' section at the top has a 'System Name' field containing 'G7117B' and an empty 'Description' field. Below this, the 'Instruments' section contains a table with three columns: 'Instrument Name', 'Instrument Address', and 'Instrument Type'. The first row of the table has 'G7117B' in the 'Instrument Name' column, '192.168.254.11' in the 'Instrument Address' column, and 'Agilent LC/CE' in the 'Instrument Type' column. There is a small icon of a laboratory instrument to the left of the first row. Below the table is an 'Add Instrument' button. At the bottom of the dialog box, there is a 'Reconnect' checkbox (unchecked), an 'Apply' button, and a 'Cancel' button.

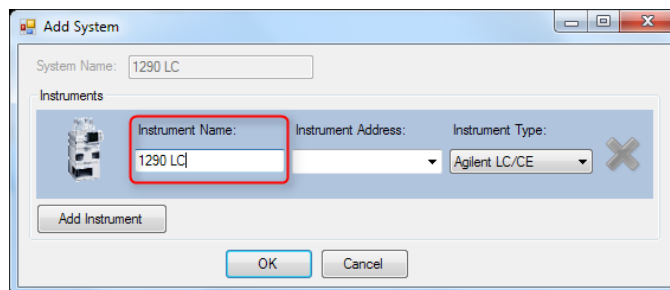
Instrument Name	Instrument Address	Instrument Type
G7117B	192.168.254.11	Agilent LC/CE

Lab Advisor

- 1 In the Action Panel of the **System Overview**, click **Add System**.



The **Add System** dialog box is displayed.



2 Configuration Settings

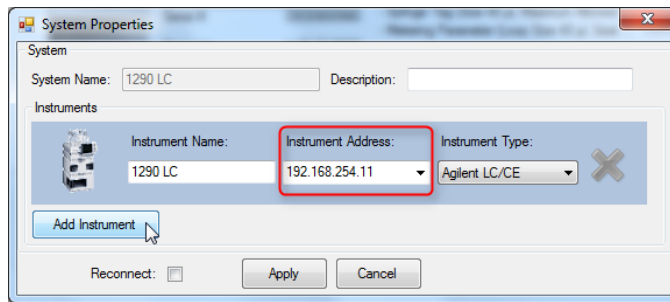
Lab Advisor

2 Enter a name in the **Instrument Name** field.

NOTE

If your system comprises just one instrument, the **Instrument Name** is copied to the **System Name** field.

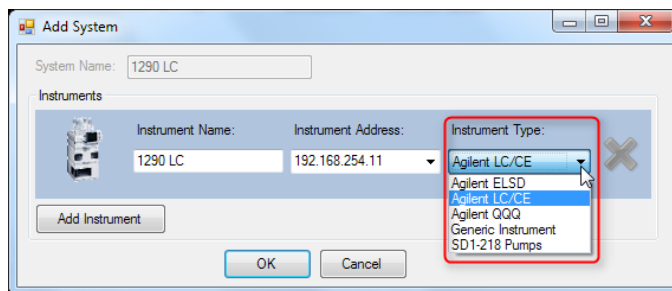
3 Enter the connection details in the **Instrument Address** field.



NOTE

The **Instrument Address** can be an IP address, the host name or, if you are connecting using a serial cable, the COM port.

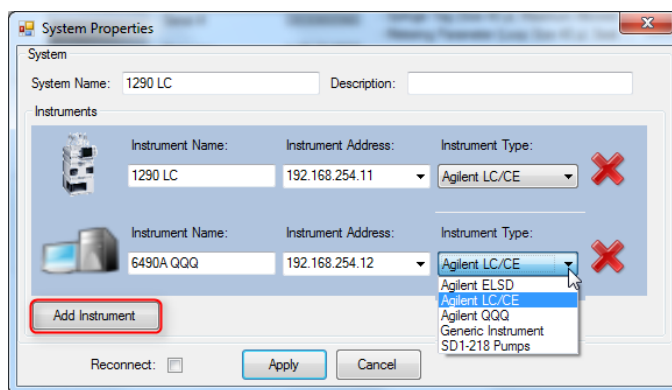
- 4 Click the **Instrument Type** down-arrow and select the type of instrument you are adding from the list. The default setting is **Agilent LC/CE**. Additional instrument types become available when the respective add-ons are installed.



NOTE

By default, the **Instrument Type** drop-down list contains only the entry **Agilent LC/CE**. Additional instrument types can be added by installing the respective add-ons (see [“Installing Add-ons”](#) on page 41).

- 5 If your system comprises more than one instrument, click **Add Instrument** and complete the details as above.



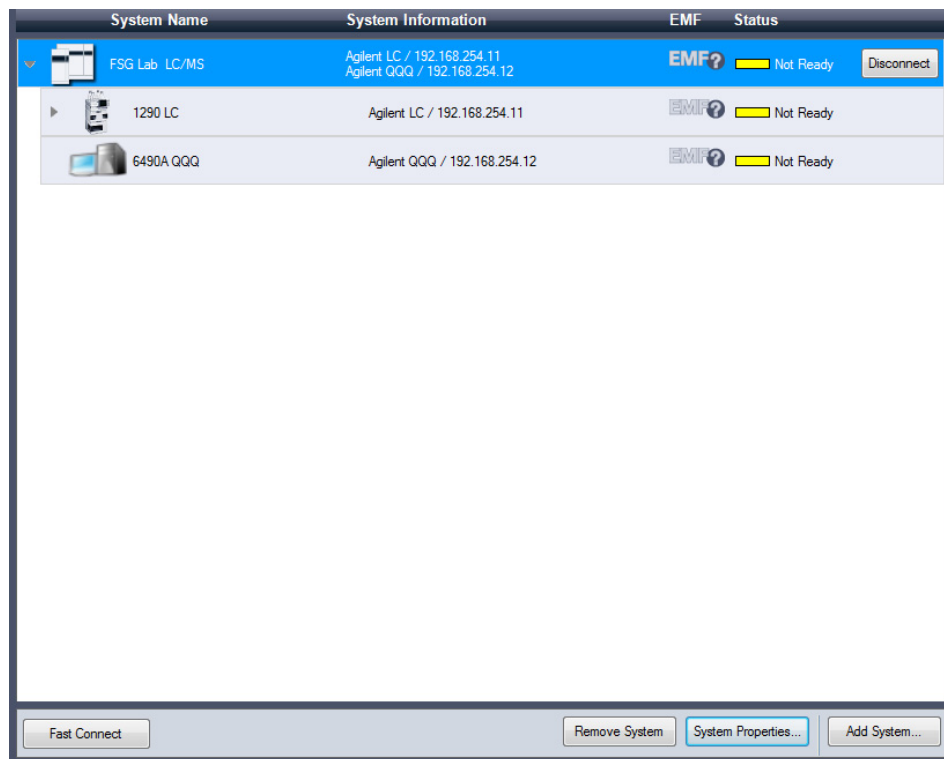
NOTE

As soon as you add a second instrument, the **System Name** field is activated to allow you to edit the system name.

2 Configuration Settings

Lab Advisor

- Click **OK** to finish adding the system and close the **Add System** dialog box.
The system becomes visible in the **System Overview**, and Lab Advisor tries to connect to it.



Installing Add-ons

Add-ons are installed from the **Configuration** screen, using a Lab Advisor Extension file with the extension .LAX.

NOTE

You need Administrator rights in order to install Add-ons.

- 1 In the Global Tasks section of the Navigation Panel, click **Configuration**.
The **Configuration** screen is displayed.
- 2 Click **Add-ons** to navigate to the **Configuration - Add-ons** screen.

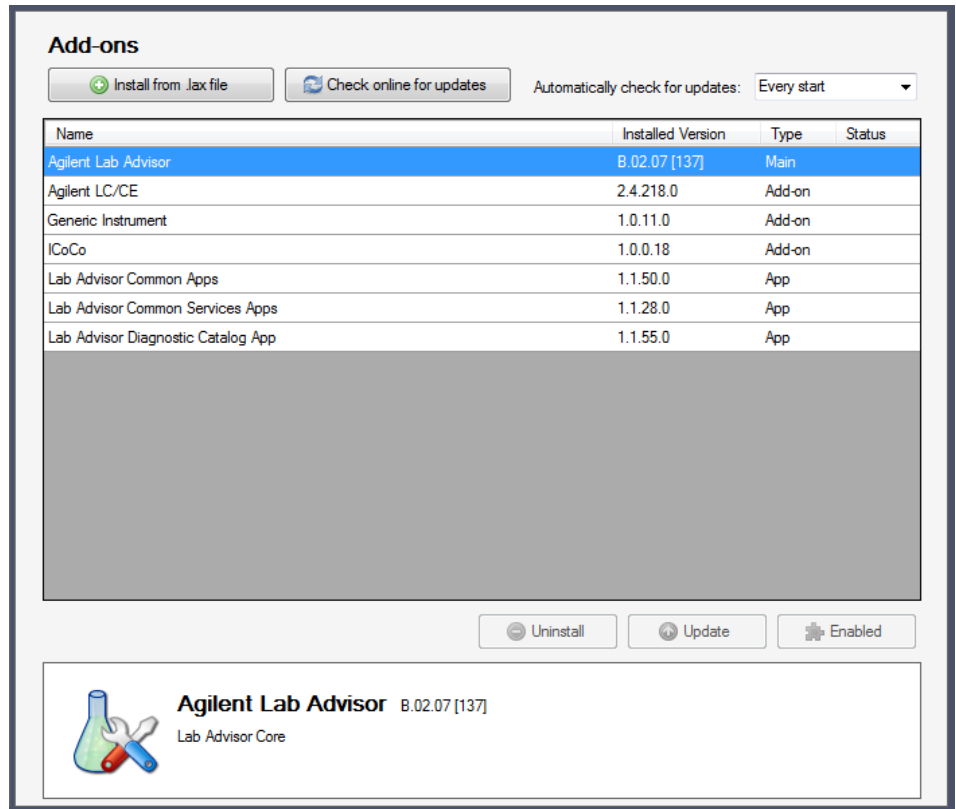


Figure 17 Add-ons in Configuration

2 Configuration Settings

Lab Advisor

The **Configuration - Add-ons** screen contains a table listing all the Add-ons that are already installed.

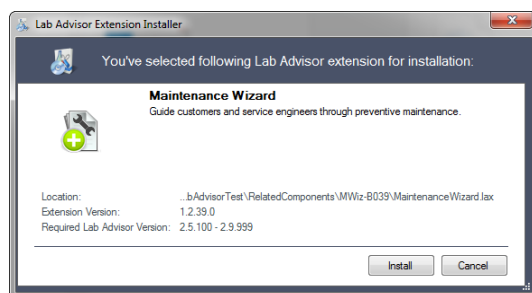
3 Click **Install from .lax file**.

A file selection dialog box is displayed to allow you to select the App or Add-on to install.

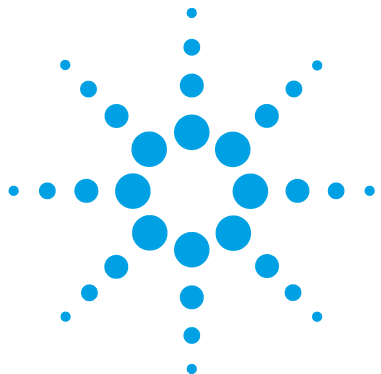
4 Navigate to the folder containing the Add-on files, select the .lax file and click **Open** to install the Add-on.

5 Click **Yes** when the request to shut down Lab Advisor appears.

Lab Advisor shuts down and the Add-on installation is started.



When the installation is finished, the newly installed Add-on is included in the table in the **Configuration - Add-ons** screen.



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This chapter provides information on running an Agilent 1290 Infinity II LC.



Best Practices

Daily / Weekly tasks

Daily tasks

- Replace solvents and solvent bottles for mobile phases based on water/buffer.
- Replace solvents and solvent bottles for organic mobile phase latest every second day.
- Check presence of seal wash solvent.
- Purge each channel with fresh solvent at 2.5 – 3 mL/min for 5 min.
- Equilibrate your system with composition of your application for 15 min. Use conditioning for 1290 Infinity II Pumps and G7104C.

Weekly tasks

- Change seal wash solvent (10 % / 90 % isopropanol/water) and bottle.
- Flush all channels with water at 2.5 – 3 mL/min for 5 min to remove salt deposits if buffer applications were used.
- Inspect solvent filters for dirt or blockages. Clean or exchange if no flow is coming out of the solvent line when removed from the degasser inlet.

Power up / Shut-down the pump

Power up the pump

- Use new or different mobile phase (as required).
- Purge each channel with 2.5 – 3 mL/min for 5 min. Open the manual purge valve or use the purge command.
- Equilibrate your system with composition of your application for 15 min. Use conditioning for 1290 Infinity II Pumps and G7104C.

Long-term shut-down of the system

- Flush system with water to remove buffer.
- Remove all samples from the sampler and store according to good laboratory practice.
- Use recommended solvents to store the system.
- Power off the system.

Prepare the pump

Purge

Use the Purge function to:

- fill the pump,
- exchange a solvent,
- remove air bubbles in tubes and pump heads.

Condition

Use the Conditioning function:

- daily when starting the pump,
- to minimize pressure ripple by dissolving air bubbles in pump heads.

NOTE

Condition your complete system with solvents and composition of your application (for example 50 %/50 % A/B at 0.5 mL/min).

Seal wash

Seal Wash guarantees a maximum seal life time. Use Seal Wash:

- When using buffers with elevated salt concentrations
- When using volatile solvents with non-volatile additives

CAUTION

Contaminated seal wash solvent

- Do not recycle seal wash solvent to avoid contamination.
 - Weekly exchange seal wash solvent.
-

How to deal with solvents

- Use clean bottles only.
- Exchange water-based solvents daily.
- Select solvent volume to be used up within 1 – 2 days.
- Use only HPLC-grade solvents and water filtered through 0.2 µm filters.
- Label bottles correctly with bottle content, and filling date / expiry date.
- Use solvent inlet filters.
- Reduce risk of algae growth: use brown bottles for aqueous solvents, avoid direct sunlight.

Select channels for Multi-Channel Gradient Valve (MCGV)

- Use lower channels (A and/or D) for buffer solutions.
- Regularly flush all MCGV channels with water to remove possible salt deposits.
- Check compatibility of buffers and organic solvents to avoid precipitation.

Optional Inline Filter

The pump can be equipped with an additional inline filter (Inline Filter Assembly (5067-5407)) with a nominal filter pore size of 0.3 μ L.

Advantages of the inline filter:

- Very small internal volume
- Specified for working at high pressures
- Possibility of back-flushing the filter

Using the inline filter is recommended:

- to protect the downstream system from blockages,
- for solvent combinations that can form precipitation after mixing,
- for applications running with buffers.

General hints for effective usage of the inline filter:

- filter solvents before usage,
- follow best practices,
- back-flush the filter weekly,
- exchange the filter frit on a regular basis.

CAUTION

Damage to the valve

→ Use the filter flush mode only if the optional inline filter is installed.

See Technote G7167-90130 for further reference.

Prepare a Run

This procedure exemplarily shows how to prepare a run. Parameters as shown in the screenshots may vary, depending on the system installed.

WARNING

Toxic, flammable and hazardous solvents, samples and reagents

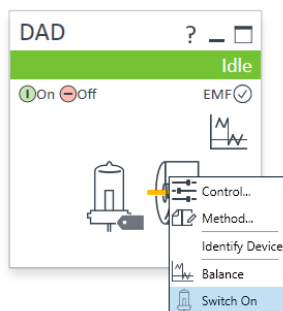
The handling of solvents, samples and reagents can hold health and safety risks.

- When working with these substances observe appropriate safety procedures (for example by wearing goggles, safety gloves and protective clothing) as described in the material handling and safety data sheet supplied by the vendor, and follow good laboratory practice.
 - Do not use solvents with an auto-ignition temperature below 200 °C (392 °F). Do not use solvents with a boiling point below 56 °C (133 °F).
 - Avoid high vapor concentrations. Always keep the temperature in the sample compartment at least 25 K below the boiling point of the solvent used.
 - Do not operate the instrument in an explosive atmosphere.
 - Do not use solvents of ignition Class IIC according IEC 60079-20-1 (for example, carbon disulfide).
 - Reduce the volume of substances to the minimum required for the analysis.
 - Never exceed the maximum permissible volume of solvents (8 L) in the solvent cabinet. Do not use bottles that exceed the maximum permissible volume as specified in the usage guideline for solvent cabinet.
 - Ground the waste container.
 - Regularly check the filling level of the waste container. The residual free volume in the waste container must be large enough to collect the waste liquid.
 - To achieve maximal safety, regularly check the tubing for correct installation.
-

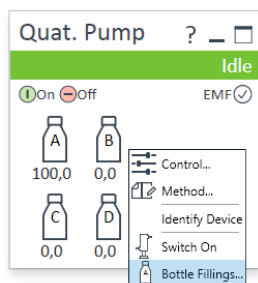
3 Quick Start Guide

Prepare a Run

- 1 Switch on the detector.



- 2 Fill the solvent bottles with adequate solvents for your application.
- 3 Place solvent tubings with bottle head assemblies into the solvent bottles.
- 4 Place solvent bottles into the solvent cabinet.
- 5 Solvent bottle filling dialog (in the software).



Solvent Bottle				
Fillings				
	Actual Volume		Total Volume	
A:	0.80	liter	1.00	liter
B:	0.92	liter	1.00	liter
C:	0.78	liter	1.00	liter
D:	0.81	liter	1.00	liter

Actions	
<input checked="" type="checkbox"/> Prevent analysis if level falls below	0.05 liter
<input type="checkbox"/> Turn pump off if running out of solvent	

Ok Cancel Help

6 Purge the pump (in normal usage scenario).

OR


Prime the pump (after installation of the system).

NOTE

For details on priming and purging, refer to the technical note *Best Practices for Using an Agilent LC System*.

7 Change solvent (if necessary).

Quat. Pump
VWD
Sampler
DAD
Column Comp.

Quat. Pump (G7111B)


Flow
0.800 mL/min

Solvents
A: 60.0 % Water
B: ☒ 40.0 % Acetonitrile
C: ☐ 0.0 %
D: ☐ 0.0 %

Pressure Limits
Min: 0.00 bar Max: 600.00 bar

Stoptime **Posttime**
☐ As Injector/No Limit ☒ Off
☒ 10.00 min ☐ 1.00 min

Import Timetable...

Advanced
Minimum Stroke
☒ Automatic
☐ 20 µL
Compressibility
☒ 95 $\times 10^{-6}$ / bar
☐ No compensation
Maximum Flow Gradient
100.000 mL/min²
Primary Channel
Automatic

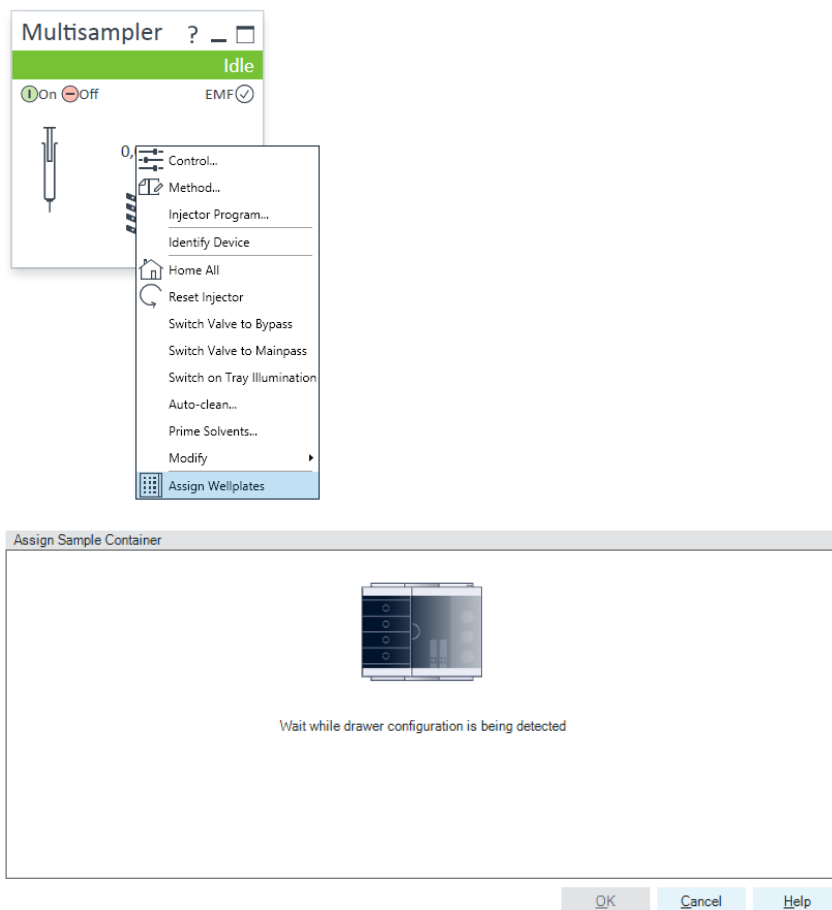
Tt

▶ Timetable (1/100 events)

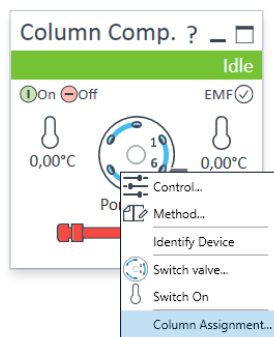
3 Quick Start Guide

Prepare a Run

8 Choose the tray format of the sampler.



9 Add a new column.



10 Enter the column information.

Plumbing

Valve Position	Location
1	Left 1
2	Left 2

Visualization

Valve Type: 2-pos/6-port valve 600 bar (5067-4137)

Column Tag Information

>>

Location	Color Code	Description	Length [mm]	Diameter [mm]	Particle Size [µm]	Max. Pressure [bar]	Injections
Left 1	Red		0	0,0	0,0	0	0
▶ Left 2	Blue		0	0,0	0,0	0	0
Left 3	None		0	0,0	0,0	0	0
Left 4	None		0	0,0	0,0	0	0
Right 1	None		0	0,0	0,0	0	0
Right 2	None		0	0,0	0,0	0	0
Right 3	None		0	0,0	0,0	0	0
Right 4	None		0	0,0	0,0	0	0

Ok/Write Tag

Cancel

Help

11 Select the column position.

Temperature

Left:

☐ Not Controlled
☒ 40.0 °C
☐ As Detector Cell
☐ Unchanged


Right:

☐ Not Controlled
☐ 25.0 °C
☐ As Detector Cell
☐ Unchanged
☒ Combined

Valve Position/Column

☐ Use Current Column / Position
☒ Use Selected Column / Position

Position 1



☐ Enforce column for run

Stoptime

☒ As Pump/Injector
☐ 1.00 min

Posttime

☒ Off
☐ 1.00 min

Advanced

Enable Analysis

☒ when front door open

Left:

☐ With any temperature
☒ When temperature is within

± 0.8 °C for

0.0 min

Right:

☐ With any temperature
☒ When temperature is within

± 0.8 °C for

0.0 min

Valve Position/Column After Run

☒ Do not switch
☐ Switch to position / column at beginning of run
☐ Increase valve position / column
☐ Use valve position / column

Position 1

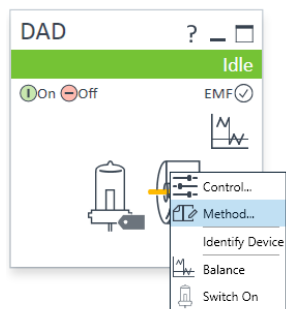
Timetable (empty)

Ok

Apply

Cancel

12 Set the detector according to the needs of your method.



Quat. Pump | VWD | Sampler | **DAD** | Column Comp.

DAD (G7115A)

Signals

	Acquire	Wave length	Band width	Reference Wavelength	Reference Bandwidth	
Signal A	<input checked="" type="checkbox"/>	254	4	<input checked="" type="checkbox"/>	360	100 nm
Signal B	<input type="checkbox"/>	254	4	<input type="checkbox"/>	360	100 nm
Signal C	<input type="checkbox"/>	210	4	<input type="checkbox"/>	360	100 nm
Signal D	<input type="checkbox"/>	230	4	<input type="checkbox"/>	360	100 nm
Signal E	<input type="checkbox"/>	280	4	<input type="checkbox"/>	360	100 nm
Signal F	<input type="checkbox"/>	260	4	<input type="checkbox"/>	360	100 nm
Signal G	<input type="checkbox"/>	270	4	<input type="checkbox"/>	360	100 nm
Signal H	<input type="checkbox"/>	290	4	<input type="checkbox"/>	360	100 nm

Peakwidth
> 0.0063 min (0.13 s response time) (40 Hz)

StoptimePosttime

☒ As Pump/Injector

☐ 1.00 min

☒ Off

☐ 1.00 min

Advanced

Spectrum

Store : None

Range from: 190 to 400 nm

Step: 2.0 nm

Analog Output

Zero Offset: 5 %

Attenuation: 1000 mAU

Margin for negative Absorbance

100 mAU

Slit

4 nm

Autobalance

☒ Prerun

☐ Postrun

Lamps on required for acquisition

☒ UV Lamp

☐ Vis Lamp

Timetable (empty)

NOTE

For details on running a method, see “Setup the Checkout Method” on page 59 as an example.

Check Out the System

Checkout Method

This is the checkout method for the Infinity II LC.

Exemplary configuration:

- High Speed Pump G7120A
- Multisampler G7167B
- Multicolumn Thermostat G7116B
- Diode Array Detector G7117B

The RRLC checkout sample (5188-6529) contains 100 ng/μL each of nine components dissolved in water / acetonitrile (65/35). The nine components are:

- Acetanilide
- Acetophenone
- Propiophenone
- Butyrophenone
- Benzophenone
- Valerophenone
- Hexanophenone
- Heptanophenone
- Octanophenone

The checkout sample is run on the checkout column: InfinityLab Poroshell 120 1.9 μm EC-C18, 2.1 x 50 mm, 1300 bar (699675-902).

NOTE

Find the correct settings for the individual modules here:

- Checkout method parameter settings (G7104A/G7120A)([Table 2](#) on page 57)
- Checkout method parameter settings (G7167B/G7129B)([Table 3](#) on page 57)
- Checkout method parameter settings (G7116B)([Table 4](#) on page 57)
- Checkout method parameter settings (G7117A/B)([Table 5](#) on page 58)
- Checkout method parameter settings (G7114B)([Table 6](#) on page 58)

Table 2 Checkout method parameter settings (G7104A/G7120A)

Parameter	Value
Flow	0.8 mL/min
Solvent A	Water
Solvent B	ACN
Compressibility	Use solvent types
Composition	40 %B (ACN)
Composition	60 %A (Water)
Stoptime	5 min
Pressure Limit	800 bar
Minimum Stroke	Automatic
Timetable	2.5 min80 %B

Table 3 Checkout method parameter settings (G7167B/G7129B)

Parameter	Value
Injection	1 µL
Stoptime	as pump
Draw speed	100 µL/min

Table 4 Checkout method parameter settings (G7116B)

Parameter	Value
Temperature (left)	40 °C
Temperature (right)	combined
Stoptime	as pump

Table 5 Checkout method parameter settings (G7117A/B)

Parameter	Value
Signal A	254/4 nm
Ref A	360/100 nm
Peakwidth	40 Hz
Stoptime	as pump
Spectrum	None
Autobalance	Prerun

Table 6 Checkout method parameter settings (G7114B)

Parameter	Value
Wavelength	254 nm
Peakwidth	40 Hz
Stoptime	as pump
Autobalance	Prerun

Setup the Checkout Method

- 1 Load the the default method DEF_LC.M
- 2 Change the method settings for the pump (G7120A).

Flow

0.800 mL/min

Solvents

A:

60.00 %

1

☒ 100.0 % Water V.03

2

☐ 100.0 % Water V.03

B:

☒ 40.00 %

1

☒ 100.0 % Acetonitrile V.03

2

☐ 100.0 % Acetonitrile V.03

Pressure Limits

Min: 0.00 bar

Max: 1,300.00 bar

Stoptime

☐ As Injector/No Limit

☒ 10.00 min

☐ Off

☐ 1.00 min

Advanced

Minimum Stroke

Channel A:

☒ Automatic

☐ 20.00 µL

Channel B:

☐ Automatic

☐ 20.00 µL

☒ Synchronized

Compressibility

☒ Use Solvent Types

Maximum Flow Gradient

Flow ramp up: 100,000 mL/min²

Flow ramp down: 100,000 mL/min²

Required Mixer

No check

Timetable (1/100 events)

Figure 18 Advanced method settings (G7120A)

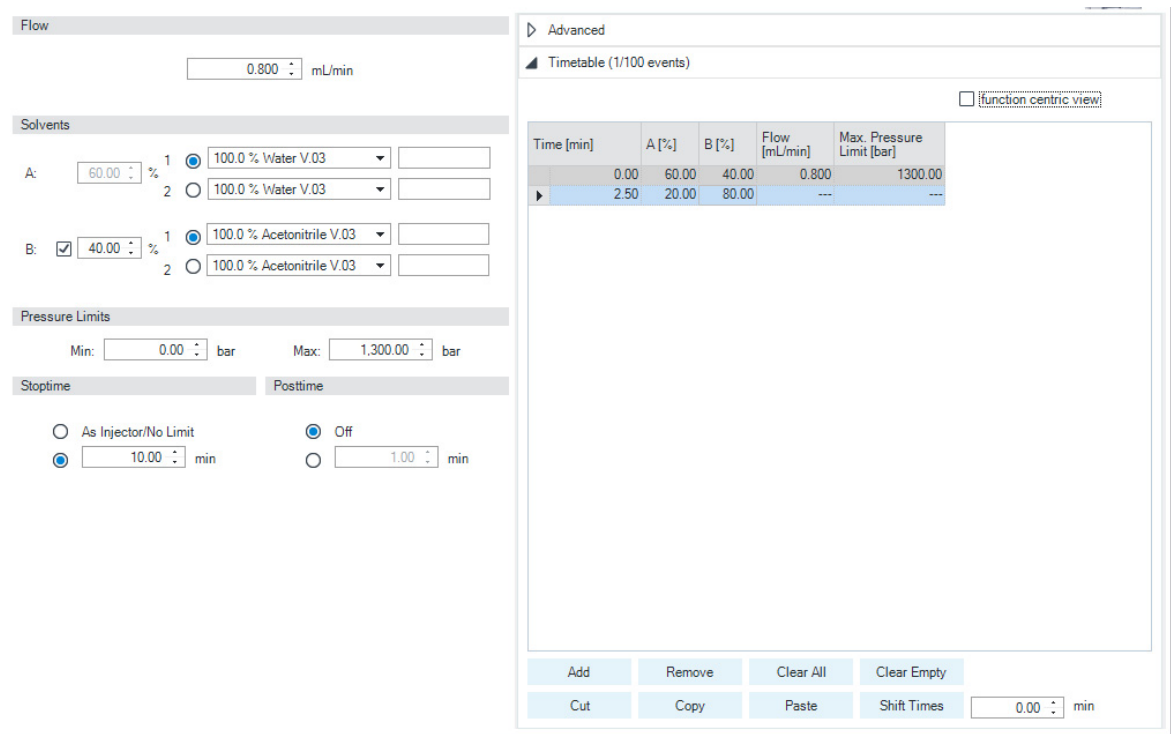


Figure 19 Timetable settings (G7120A)

3 Change the method settings for the Multisampler (G7167B).

Injection

Injection volume: 2.00 µL

Needle Wash

Standard Wash

Stoptime **Posttime**

☒ As Pump/No Limit ☒ Off

☐ 1.00 min ☐ 1.00 min

Advanced

Sampling Speed

Draw Speed: 100.0 µL/min

Eject Speed: 200.0 µL/min

Wait Time After Draw: 2.0 s

Needle Height Position

Offset: 0.0 mm

☐ Use Vial/Well Bottom Sensing

High Throughput

Sample Flush-Out Factor: 5.0

☐ Injection Valve to Bypass for Delay Volume Reduction

☐ Enable Overlapped Injection

☐ When Sample is Flushed Out

☒ After Period of Time

0.00 minutes after injection

Injection Path Cleaning

Ok Apply Cancel

Figure 20 Method setting (G7167B)

3 Quick Start Guide

Check Out the System

Injection

Injection volume: μL

Needle Wash

Stoptime

☐ As Pump/No Limit
☐ min

Posttime

☐ Off
☐ min

Advanced

Injection Path Cleaning

Standard Wash

Mode:

Time: s

Location:

Repeat:

Multi-wash

Step	Solvent	Time [s]	Seat Back Flush	Needle Wash	Comment
1	Off		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
2	Off		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
3	Off		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Start Cond.	S1		<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Ok

Apply

Cancel

Figure 21 Method setting (G7167B) - Injection Path Cleaning

4 Change the method settings for the Multicolumn Thermostat (G7116B).

Temperature

Left:

☐ Not Controlled
☒ 40,0 °C
☐ As Detector Cell
☐ Unchanged


Right:

☐ Not Controlled
☐ 20,0 °C
☐ As Detector Cell
☐ Unchanged
☒ Combined

Valve Position/Column

☐ Use Current Column / Position
☒ Use Selected Column / Position

Position 1



☐ Enforce column for run

Stoptime

☒ As Pump/Injector
☐ 1,00 min

Posttime

☒ Off
☐ 1,00 min

Advanced

Enable Analysis

☐ when front door open

Left:

☐ With any temperature
☒ When temperature is within

± 0,8 °C for

0,0 min

Right:

☐ With any temperature
☒ When temperature is within

± 0,8 °C for

0,0 min

Valve Position/Column After Run

☒ Do not switch
☐ Switch to position / column at beginning of run
☐ Increase valve position / column
☐ Use valve position / column

Position 1

Timetable (empty)

Ok

Apply

Cancel

Figure 22 Method settings (G7116B)

Agilent 1290 Infinity II LC System Manual and Quick Reference

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5 Change the method settings for the detector (G7117B).

Signals

	Acquire	Wave length	Band width	Reference Wavelength	Reference Bandwidth	
Signal A	<input checked="" type="checkbox"/>	254.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm
Signal B	<input type="checkbox"/>	210.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm
Signal C	<input type="checkbox"/>	214.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm
Signal D	<input type="checkbox"/>	230.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm
Signal E	<input type="checkbox"/>	260.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm
Signal F	<input type="checkbox"/>	273.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm
Signal G	<input type="checkbox"/>	280.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm
Signal H	<input type="checkbox"/>	250.0	4.0	<input checked="" type="checkbox"/> 360.0	100.0	nm

Peakwidth

> 0.0063 min (0.13 s response time) (40 Hz)

Stoptime **Posttime**

☒ As Pump/Injector ☒ Off

☐ 1.00 min ☐ 1.00 min

Advanced

Spectrum

Store: All

Range from: 190.0 to 400.0 nm

Step: 2.0 nm

Analog Output

Output 1:

Zero Offset: 5 %

Attenuation: 1000 mAU

Margin for negative Absorbance **Slit**

100 mAU 4 nm

Autobalance **Lamps on required for acquisition**

☒ Prerun ☒ UV Lamp

☐ Postrun

Timetable (empty)

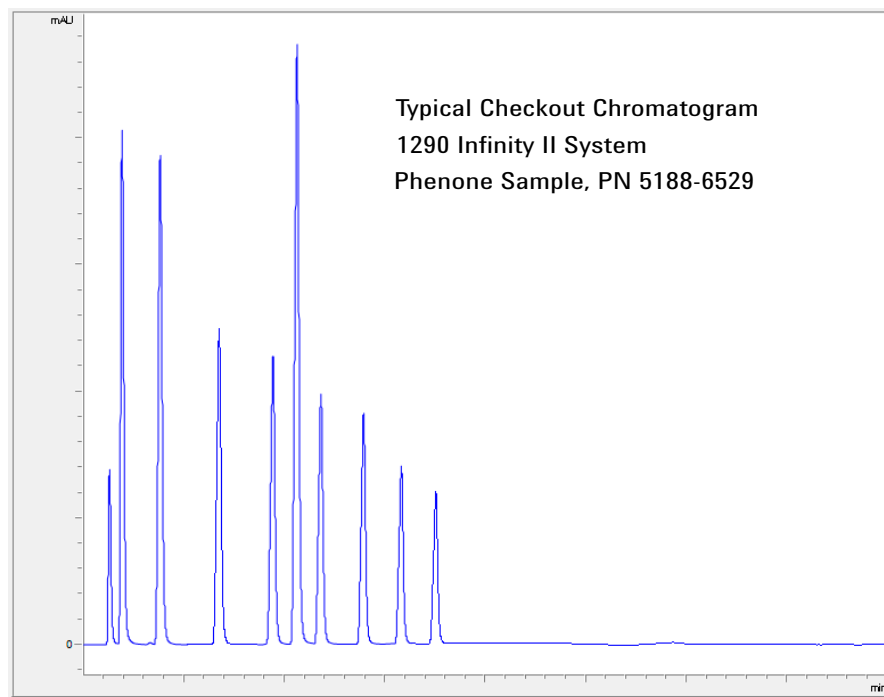
Ok Apply Cancel

Figure 23 Method settings (G7117B)

6 Save the method as GRAD-1.M

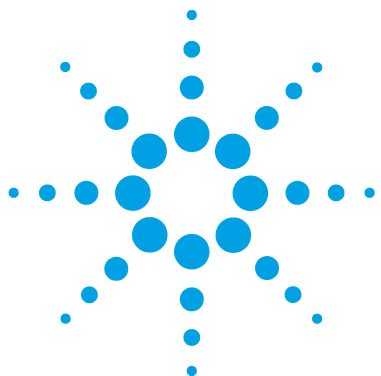
7 Equilibrate the system for 10 min under checkout conditions

8 Run and evaluate the checkout method



3 Quick Start Guide

Check Out the System



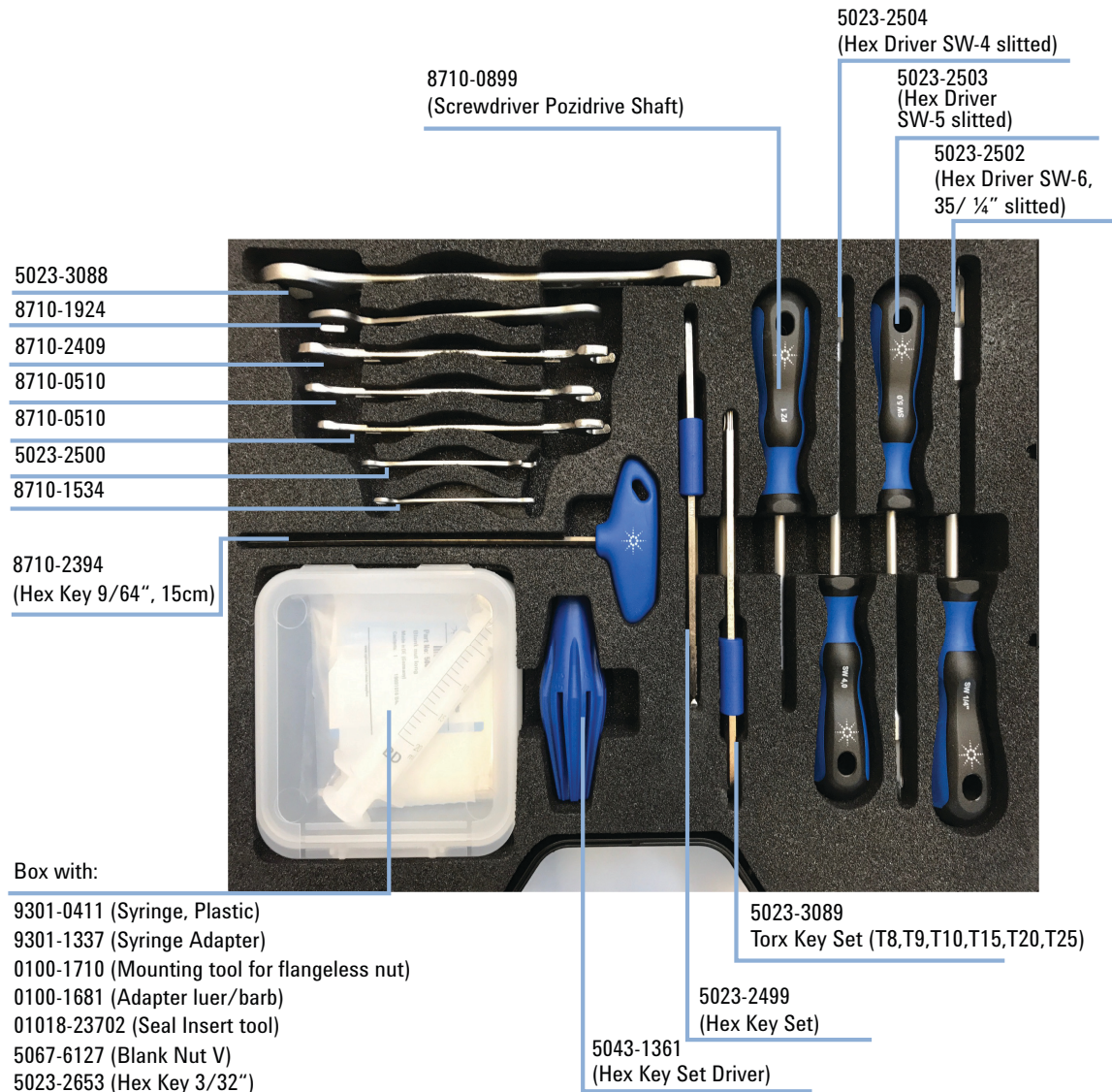
4 Parts and Consumables

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This chapter provides information on additional parts and consumables.



Tool Kit G7120-68708



InfinityLab Quick Connect and Quick Turn Fittings

InfinityLab Quick Connect Fittings

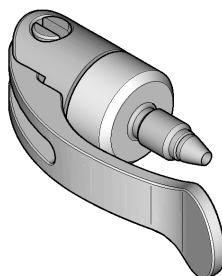


Figure 24 InfinityLab Quick Connect Fitting

p/n	Description
5067-5965	InfinityLab Quick Connect LC fitting (fitting without pre-installed capillary)
5043-0924	Front Ferrule
5067-5961	InfinityLab Quick Connect Assy ST 0.075 mm x 105 mm
5067-6163	InfinityLab Quick Connect Assy ST 0.075 mm x 150 mm
5067-6164	InfinityLab Quick Connect Assy ST 0.075 mm x 220 mm
5067-6165	InfinityLab Quick Connect Assy ST 0.075 mm x 280 mm (fitting without pre-installed capillary)
5067-5957	InfinityLab Quick Connect Assy ST 0.12 mm x 105 mm
5067-5958	InfinityLab Quick Connect Assy ST 0.12 mm x 150 mm
5067-5959	InfinityLab Quick Connect Assy ST 0.12 mm x 220 mm
5067-5960	InfinityLab Quick Connect Assy ST 0.12 mm x 280 mm
5067-6166	InfinityLab Quick Connect Assy ST 0.17 mm x 105 mm
5067-6167	InfinityLab Quick Connect Assy ST 0.17 mm x 150 mm
5067-6168	InfinityLab Quick Connect Assy ST 0.17 mm x 220 mm
5067-6169	InfinityLab Quick Connect Assy ST 0.17 mm x 280 mm

InfinityLab Quick Connect Fitting Replacement Capillaries

p/n	Description
5500-1174	InfinityLab Capillary ST 0.075 mm x 105 mm
5500-1175	InfinityLab Capillary ST 0.075 mm x 150 mm
5500-1176	InfinityLab Capillary ST 0.075 mm x 220 mm
5500-1177	InfinityLab Capillary ST 0.075 mm x 250 mm
5500-1178	InfinityLab Capillary ST 0.075 mm x 280 mm
5500-1173	InfinityLab Capillary ST 0.12 mm x 105 mm
5500-1172	InfinityLab Capillary ST 0.12 mm x 150 mm
5500-1171	InfinityLab Capillary ST 0.12 mm x 220 mm
5500-1170	InfinityLab Capillary ST 0.12 mm x 280 mm
5500-1179	InfinityLab Capillary ST 0.12 mm x 400 mm
5500-1180	InfinityLab Capillary ST 0.12 mm x 500 mm
5500-1181	InfinityLab Capillary ST 0.17 mm x 105 mm
5500-1182	InfinityLab Capillary ST 0.17 mm x 150 mm
5500-1183	InfinityLab Capillary ST 0.17 mm x 220 mm
5500-1230	InfinityLab Capillary ST 0.17 mm x 280 mm
5500-1231	InfinityLab Capillary ST 0.17 mm x 500 mm
5500-1259	InfinityLab Capillary ST 0.25 mm x 150 mm
5500-1260	InfinityLab Capillary ST 0.25 mm x 400 mm

InfinityLab Quick Turn Fitting

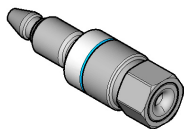


Figure 25 InfinityLab Quick Turn Fitting

p/n	Description
5067-5966	InfinityLab Quick Turn Fitting
5043-0924	Front Ferrule

Capillaries for use with the InfinityLab Quick Turn Fitting

p/n	Description
5500-1198	Capillary ST 0.075 mm x 105 mm, long socket
5500-1232	Capillary ST 0.075 mm x 150 mm, long socket
5500-1206	Capillary ST 0.075 mm x 250 mm
5500-1205	Capillary ST 0.075 mm x 500 mm
5500-1188	Capillary ST 0.12 mm x 105 mm, long socket
5500-1189	Capillary ST 0.12 x 150 mm, long socket
5500-1233	Capillary ST 0.12 mm x 180 mm, long socket
5500-1190	Capillary ST 0.12 mm x 200 mm, long socket
5500-1191	Capillary ST 0.12 mm x 280 mm, long socket
5500-1192	Capillary ST 0.12 mm x 500 mm, long socket
5500-1193	Capillary ST 0.17 mm x 105 mm, long socket
5500-1194	Capillary ST 0.17 mm x 150 mm, long socket
5500-1234	Capillary ST 0.17 mm x 180 mm, long socket
5500-1195	Capillary ST 0.17 mm x 200 mm, long socket
5500-1196	Capillary ST 0.17 mm x 280 mm, long socket
5500-1235	Capillary ST 0.17 mm x 380 mm, long socket
5500-1236	Capillary ST 0.17 mm x 400 mm, long socket
5500-1197	Capillary ST 0.17 mm x 500 mm, long socket
5500-1237	Capillary ST 0.17 mm x 700 mm
5500-1262	Capillary ST 0.25 mm x 150 mm
5500-1263	Capillary ST 0.25 mm x 400 mm
5500-1200	Capillary ST 0.12 mm x 130 mm SL/M
5500-1288	Capillary ST 0.12 mm x 150 mm
5500-1290	Capillary ST 0.17 mm x 150 mm

Safety Caps and Solvent Bottles

Stay Safe Caps

Table 7 Stay Safe Caps

Part No.	Description	Fittings	Vent Ports	Filter Ports	Waste Ports
5043-1217	GL45 with 1 port 1 vent valve with time strip	1 x 3.2 mm	1		
5043-1218	GL45 with 2 ports 1 vent valve with time strip	2 x 3.2 mm	1		
5043-1219	GL45 with 3 ports 1 vent valve with time strip	3 x 3.2 mm	1		
5043-1220	GL45 with 4 ports 1 leak hose	4 (2 x 3.2 mm, 1 x 2.3 mm, 1 x 1.6 mm)		1	1

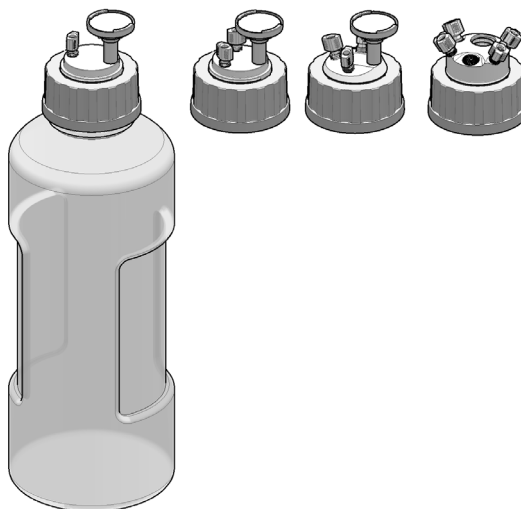


Figure 26 Solvent bottle with different types of Stay Safe caps

4 Parts and Consumables

Safety Caps and Solvent Bottles

Kits

p/n	Description
5043-1221	6 L waste can with 1 Stay Safe cap GL45 with 4 ports



Figure 27 Kit: Waste can with Stay Safe cap

Solvent Bottles

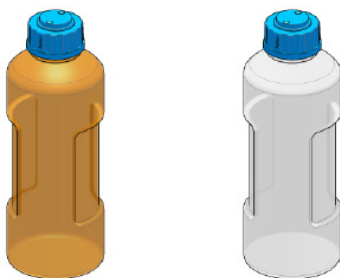


Figure 28 Solvent bottles

p/n	Description
9301-6523	Solvent bottle, clear, 500 mL with cap
9301-6524	Solvent bottle, clear, 1000 mL
9301-6525	Solvent bottle, amber, 500 mL with cap
9301-6526	Solvent bottle, amber, 1000 mL
9301-6527	Solvent bottle, clear, 125 mL
9301-6528	Solvent bottle, clear, 1000 mL with cap
9301-6529	Identification Silicone ring (8/pk with 4 different colors)
9301-6530	Sticker for solvent bottles (100/pk)

Additional Parts

For fitting ports:

p/n	Description
5043-1216	Fitting for 3.2 mm tubing, PFA, 2/pk
5043-1215	Fitting for 2.3 mm tubing, PFA, 2/pk
5043-1214	Fitting for 1.6 mm tubing, PFA, 2/pk
5043-1198	Screw plug 1/8 in, PTFE, 2/pk

For vent port:

p/n	Description
5043-1190	Venting valve with time strip, PTFE, 1 µm

For filter port:

p/n	Description
5043-1193	Charcoal filter with time strip (58 g) for waste container

For waste port:

p/n	Description
5043-1207	2-ports waste collector, PTFE

Miscellaneous:

p/n	Description
5043-1191	Thread adapter PTFE GL45 (M) - GL40 (F)
5043-1192	Thread adapter PTFE GL45 (M) - GPI 38-430 (F)

InfinityLab Flex Bench Family

InfinityLab Flex Bench

p/n	Description
5043-1252	InfinityLab Flex Bench
5043-1759	InfinityLab Flex Bench with pre-assembled power strip

The Flex Bench includes the framework, four shelf assemblies, and one waste bin.

Accessories:

p/n	Description
5043-1287	Shelf assembly
8121-1245	Valve shelf assembly
5043-1278	Waste bin
8121-2258	Power cord
5043-1289	InfinityLab Flex Bench Replacement Kit (spare parts: screws and casters)

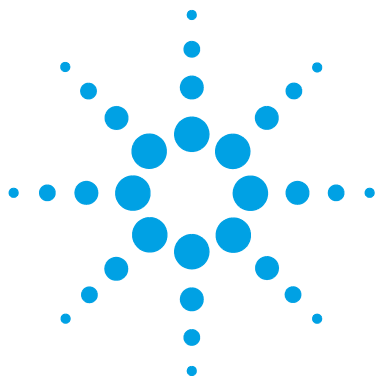
InfinityLab Benchtop

p/n	Description
5043-1711	InfinityLab Benchtop
5043-1740	InfinityLab Benchtop with pre-assembled power strip

The Benchtop includes the framework and three shelf assemblies.

Accessories:

p/n	Description
5043-1750	Shelf assembly
8121-1245	Valve shelf assembly
8121-2258	Power cord
5043-1289	InfinityLab Flex Bench Replacement Kit (spare parts: screws and casters)



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This chapter provides addition information on safety, legal, and web.



Safety

General Safety Information

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. Agilent Technologies assumes no liability for the customer's failure to comply with these requirements.

WARNING

Ensure the proper usage of the equipment.

The protection provided by the equipment may be impaired.

→ The operator of this instrument is advised to use the equipment in a manner as specified in this manual.

Safety Standards

This is a Safety Class I instrument (provided with terminal for protective earthing) and has been manufactured and tested according to international safety standards.

General

Do not use this product in any manner not specified by the manufacturer. The protective features of this product may be impaired if it is used in a manner not specified in the operation instructions.

Before Applying Power

WARNING**Wrong voltage range, frequency or cabling****Personal injury or damage to the instrument**

- Verify that the voltage range and frequency of your power distribution matches to the power specification of the individual instrument.
 - Never use cables other than the ones supplied by Agilent Technologies to ensure proper functionality and compliance with safety or EMC regulations.
 - Make all connections to the unit before applying power.
-

NOTE

Note the instrument's external markings described under “[Symbols](#)” on page 84.

Ground the Instrument

WARNING**Missing electrical ground****Electrical shock**

- If your product is provided with a grounding type power plug, the instrument chassis and cover must be connected to an electrical ground to minimize shock hazard.
 - The ground pin must be firmly connected to an electrical ground (safety ground) terminal at the power outlet. Any interruption of the protective (grounding) conductor or disconnection of the protective earth terminal will cause a potential shock hazard that could result in personal injury.
-

Do Not Operate in an Explosive Atmosphere

WARNING

Presence of flammable gases or fumes

Explosion hazard

- Do not operate the instrument in the presence of flammable gases or fumes.
-

Do Not Remove the Instrument Cover

WARNING

Instrument covers removed

Electrical shock

- Do Not Remove the Instrument Cover
 - Only Agilent authorized personnel are allowed to remove instrument covers. Always disconnect the power cables and any external circuits before removing the instrument cover.
-

Do Not Modify the Instrument

Do not install substitute parts or perform any unauthorized modification to the product. Return the product to an Agilent Sales and Service Office for service and repair to ensure that safety features are maintained.

In Case of Damage

WARNING

Damage to the module

Personal injury (for example electrical shock, intoxication)

- Instruments that appear damaged or defective should be made inoperative and secured against unintended operation until they can be repaired by qualified service personnel.
-

Solvents

WARNING

Toxic, flammable and hazardous solvents, samples and reagents

The handling of solvents, samples and reagents can hold health and safety risks.

- When working with these substances observe appropriate safety procedures (for example by wearing goggles, safety gloves and protective clothing) as described in the material handling and safety data sheet supplied by the vendor, and follow good laboratory practice.
- Do not use solvents with an auto-ignition temperature below 200 °C (392 °F). Do not use solvents with a boiling point below 56 °C (133 °F).
- Avoid high vapor concentrations. Always keep the temperature in the sample compartment at least 25 K below the boiling point of the solvent used.
- Do not operate the instrument in an explosive atmosphere.
- Do not use solvents of ignition Class IIC according IEC 60079-20-1 (for example, carbon disulfide).
- Reduce the volume of substances to the minimum required for the analysis.
- Never exceed the maximum permissible volume of solvents (8 L) in the solvent cabinet. Do not use bottles that exceed the maximum permissible volume as specified in the usage guideline for solvent cabinet.
- Ground the waste container.
- Regularly check the filling level of the waste container. The residual free volume in the waste container must be large enough to collect the waste liquid.
- To achieve maximal safety, regularly check the tubing for correct installation.

NOTE

For details, see the usage guideline for the solvent cabinet. A printed copy of the guideline has been shipped with the solvent cabinet, electronic copies are available in the Agilent Information Center or via the Internet.

Symbols

Table 8 Symbols














	The apparatus is marked with this symbol when the user should refer to the instruction manual in order to protect risk of harm to the operator and to protect the apparatus against damage.
	Indicates dangerous voltages.
	Indicates a protected ground terminal.
	The apparatus is marked with this symbol when hot surfaces are available and the user should not touch it when heated up.
	Sample Cooler 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.
	Flammable Material For Sample Thermostat which uses flammable refrigerant consult Agilent Information Center / User Manual before attempting to install or service this equipment. All safety precautions must be followed.
	Confirms that a manufactured product complies with all applicable European Community directives. The European Declaration of Conformity is available at: http://regulations.corporate.agilent.com/DoC/search.htm
	Manufacturing date.
	Power symbol indicates On/Off. The apparatus is not completely disconnected from the mains supply when the power switch is in the Off position

Table 8 Symbols

	<p>Pacemaker</p> <p>Magnets could affect the functioning of pacemakers and implanted heart defibrillators.</p> <p>A pacemaker could switch into test mode and cause illness. A heart defibrillator may stop working. If you wear these devices keep at least 55 mm distance to magnets. Warn others who wear these devices from getting too close to magnets.</p>
	<p>Magnetic field</p> <p>Magnets produce a far-reaching, strong magnetic field. They could damage TVs and laptops, computer hard drives, credit and ATM cards, data storage media, mechanical watches, hearing aids and speakers. Keep magnets at least 25 mm away from devices and objects that could be damaged by strong magnetic fields.</p>
	<p>Indicates a pinching or crushing hazard</p>
	<p>Indicates a piercing or cutting hazard.</p>

WARNING**A WARNING**

alerts you to situations that could cause physical injury or death.

- Do not proceed beyond a warning until you have fully understood and met the indicated conditions.

CAUTION**A CAUTION**

alerts you to situations that could cause loss of data, or damage of equipment.

- Do not proceed beyond a caution until you have fully understood and met the indicated conditions.

Waste Electrical and Electronic Equipment Directive

This product complies with the European WEEE Directive marking requirements. The affixed label indicates that you must not discard this electrical/electronic product in domestic household waste.



NOTE

Do not dispose of in domestic household waste

To return unwanted products, contact your local Agilent office, or see <http://www.agilent.com> for more information.

Lithium Batteries Information

WARNING

Lithium batteries may not be disposed-off into the domestic waste. Transportation of discharged Lithium batteries through carriers regulated by IATA/ICAO, ADR, RID, IMDG is not allowed.

Danger of explosion if battery is incorrectly replaced.

- Discharged Lithium batteries shall be disposed off locally according to national waste disposal regulations for batteries.
 - Replace only with the same or equivalent type recommended by the equipment manufacturer.
-



WARNING

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering.

Udskiftning må kun ske med batteri af samme fabrikat og type.

- Lever det brugte batteri tilbage til leverandøren.
-

WARNING

Lithiumbatteri - Eksplosionsfare.

Ved udskiftning benyttes kun batteri som anbefalt av apparatfabrikanten.

- Brukt batteri returneres apparatleverandøren.
-

NOTE

Bij dit apparaat zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

Radio Interference

Cables supplied by Agilent Technologies are screened to provide optimized protection against radio interference. All cables are in compliance with safety or EMC regulations.

Test and Measurement

If test and measurement equipment is operated with unscreened cables, or used for measurements on open set-ups, the user has to assure that under operating conditions the radio interference limits are still met within the premises.

Sound Emission

Manufacturer's Declaration

This statement is provided to comply with the requirements of the German Sound Emission Directive of 18 January 1991.

This product has a sound pressure emission (at the operator position) < 70 dB.

- Sound Pressure $L_p < 70$ dB (A)
- At Operator Position
- Normal Operation
- According to ISO 7779:1988/EN 27779/1991 (Type Test)

Solvent Information

Flow Cell

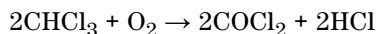
To protect optimal functionality of your flow-cell:

- Avoid the use of alkaline solutions (pH > 9.5) which can attack quartz and thus impair the optical properties of the flow cell.

Use of Solvents

Observe the following recommendations on the use of solvents.

- Brown glass ware can avoid growth of algae.
- Avoid the use of the following steel-corrosive solvents:
 - solutions of alkali halides and their respective acids (for example, lithium iodide, potassium chloride, and so on),
 - high concentrations of inorganic acids like sulfuric acid and nitric acid, especially at higher temperatures (if your chromatography method allows, replace by phosphoric acid or phosphate buffer which are less corrosive against stainless steel),
 - halogenated solvents or mixtures which form radicals and/or acids, for example:



This reaction, in which stainless steel probably acts as a catalyst, occurs quickly with dried chloroform if the drying process removes the stabilizing alcohol,

- chromatographic grade ethers, which can contain peroxides (for example, THF, dioxane, diisopropyl ether) should be filtered through dry aluminium oxide which adsorbs the peroxides,
- solvents containing strong complexing agents (e.g. EDTA),
- mixtures of carbon tetrachloride with 2-propanol or THF.
- Avoid the use of dimethyl formamide (DMF). Polyvinylidene fluoride (PVDF), which is used in leak sensors, is not resistant to DMF.

UV Radiation

Emissions of ultraviolet radiation (200 – 315 nm) from this product is limited such that radiant exposure incident upon the unprotected skin or eye of operator or service personnel is limited to the following TLVs (Threshold Limit Values) according to the American Conference of Governmental Industrial Hygienists:

Table 9 UV radiation limits





Exposure/day	Effective irradiance
8 h	0.1 $\mu\text{W}/\text{cm}^2$
10 min	5.0 $\mu\text{W}/\text{cm}^2$

Typically the radiation values are much smaller than these limits:

Table 10 UV radiation typical values

Position	Effective irradiance
Lamp installed, 50 cm distance	average 0.016 $\mu\text{W}/\text{cm}^2$
Lamp installed, 50 cm distance	maximum 0.14 $\mu\text{W}/\text{cm}^2$

Declaration of Conformity for HOX2 Filter

Declaration of Conformity				
We herewith inform you that the				
Holmium Oxide Glass Filter				
used in Agilent's absorbance detectors listed in the table below meets the requirements of National Institute of Standards and Technology (NIST) to be applied as certified wavelength standard.				
According to the publication of NIST in J. Res. Natl. Inst. Stand. Technol. 112, 303-306 (2007) the holmium oxide glass filters are inherently stable with respect to the wavelength scale and need no recertification. The expanded uncertainty of the certified wavelength values is 0.2 nm.				
Agilent Technologies guarantees, as required by NIST, that the material of the filters is holmium oxide glass representing the inherently existent holmium oxide absorption bands.				
Test wavelengths:				
Where "x" can be any alphanumeric character				
Product Number	Series	Measured Wavelength *	Wavelength Accuracy	Optical Bandwidth
G1315x, G1365x	1100, 1200, 1260	361.0 nm 418.9 nm 453.7 nm 536.7 nm	+/- 1 nm	2 nm
G7115x, G7165x	1260			
G1600x, G7100x	CE			
G1314x	1100, 1200, 1260, 1290	360.8nm 418.5nm 536.4nm	+/- 1 nm	6 nm
G7114x	1260, 1290			
G4286x,..., 94x	1120, 1220			
*) The variation in Measured Wavelength depends on the different Optical Bandwidth.				
28-Oct-2014 (Date)				
 (R&D Manager)		 (Quality Manager)		
P/N 89550-90501 	Revision: G Effective by: 28-Oct-2014			

Agilent Technologies on Internet

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<http://www.agilent.com>

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In This Book

This manual contains technical reference information about the Agilent 1290 Infinity II LC.

The manual describes the following:

- introduction,
- product description,
- best practices,
- system optimization,
- quick start guide.

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