

Agilent InfinityLab LC Series
1290 Infinity III LC System
System Manual



Notices

Document Information

The information in this document also applies to 1260 Infinity II and 1290 Infinity II modules.

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In This Book

This manual covers the Agilent 1290 Infinity III LC System.

The instrument may only be operated by appropriately qualified and trained personnel.

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

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Product Description of the 1290 Infinity III LC System

The Agilent 1290 Infinity III 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.

Designed for use with InfinityLab Assist, Level Sensing and Sample ID Reader.

Features of the 1290 Infinity III LC System

- 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 Multisampler reduce carryover to less than 9 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 III HDR-DAD or 1290 Infinity III 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.
- Equipped with InfinityLab Assist - adds an Intuitive User Interface, Automated Workflows, Predictive Maintenance and Assisted Troubleshooting.

System Components

The Agilent 1290 Infinity III LC System can be set up with two different types of pumps: with the G7104A 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 G7120A High-Speed Pump, allowing you to run fast gradients for high laboratory efficiency.

The Agilent 1290 Infinity III LC System consists of the following components:

- Flexible Pump (G7104A) or High-Speed Pump (G7120A)
- Multisampler (G7167B), Hybrid Multisampler (G7137B) or Vialsampler (G7129B)
- Multicolumn Thermostat (G7116B)
- Diode Array Detector (G7117B), Fluorescence Detector (G7123B) or Variable Wavelength Detector (G7114B)
- Solvent Cabinet or InfinityLab Level Sensing (G7175A)

The Agilent 1290 Infinity III LC System is described in more detail in the following sections. All modules are stackable, see [Optimizing the Stack Configuration](#) on page 21.

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

Product Description of the 1290 Infinity III Flexible Pump (G7104A)

The Agilent 1290 Infinity III 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 III 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.

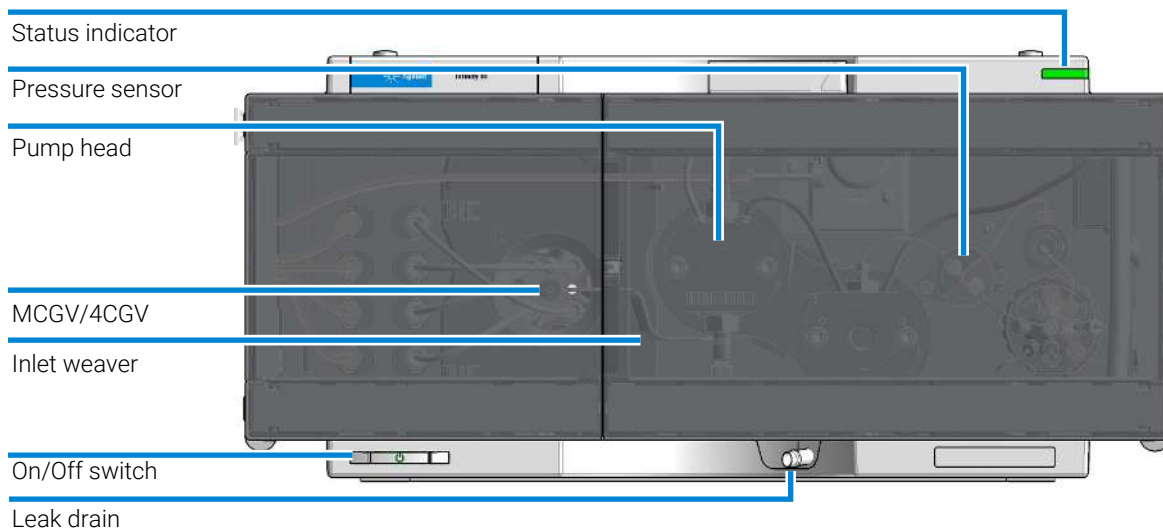


Figure 1: Overview of the Flexible Pump

Product Description of the 1290 Infinity III High-Speed Pump (G7120A)

The Agilent 1290 Infinity III High-Speed Pump can enhance your efficiency through high speed and chromatographic performance. This binary pump is designed for full flexibility when running HPLC and UHPLC applications using narrow-bore columns and sub-2 μm particles.

The 1290 Infinity III High-Speed Pump power range combines ultrahigh pressure up to 1300 bar and high analytical flow rates up to 5 mL/min for maximum UHPLC performance. Exceptionally low delay volumes down to 10 μL and high flow rates enable fast gradients over the entire composition range from 1 to 99% for shortest run times and maximum resolution.

Highest retention time reproducibility and accuracy are achieved through independently controlled high-definition pump drives and active pressure damping.

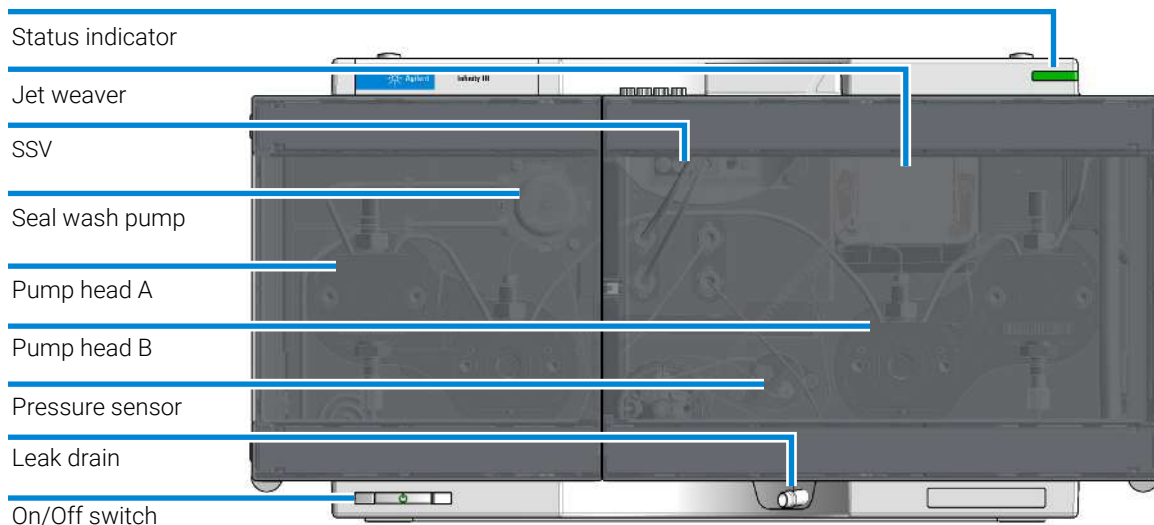


Figure 2: Overview of the High-Speed Pump

Product Description of the 1290 Infinity III Multisampler (G7167B)

The Agilent 1290 Infinity III 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.

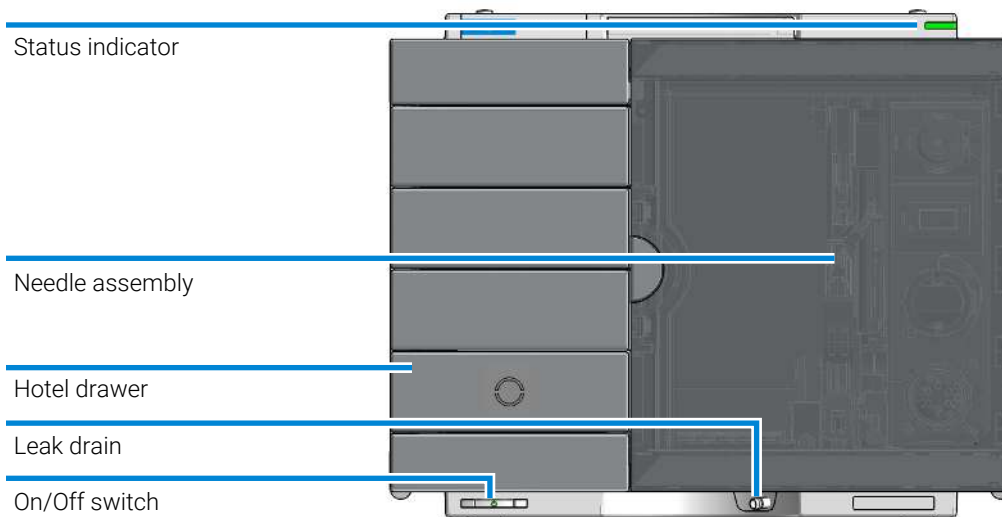


Figure 3: Overview of the Multisampler

Product Description of the 1290 Infinity III Hybrid Multisampler (G7137B)

The Agilent 1290 Infinity III Hybrid Multisampler offers both standard flow-through and Agilent Feed Injection modes. For temperature-sensitive samples, a compressor-based thermostating device can be added. It can handle both vials and microplates with ease and efficiency up to 1300 bar system pressure, being optimized for high flexibility. This compact module can house up to 6144 samples, all inside the Agilent stack footprint and with the robotics to inject each into the chromatograph in turn. Its biocompatible sample flow path minimizes unwanted surface interaction of the sample.

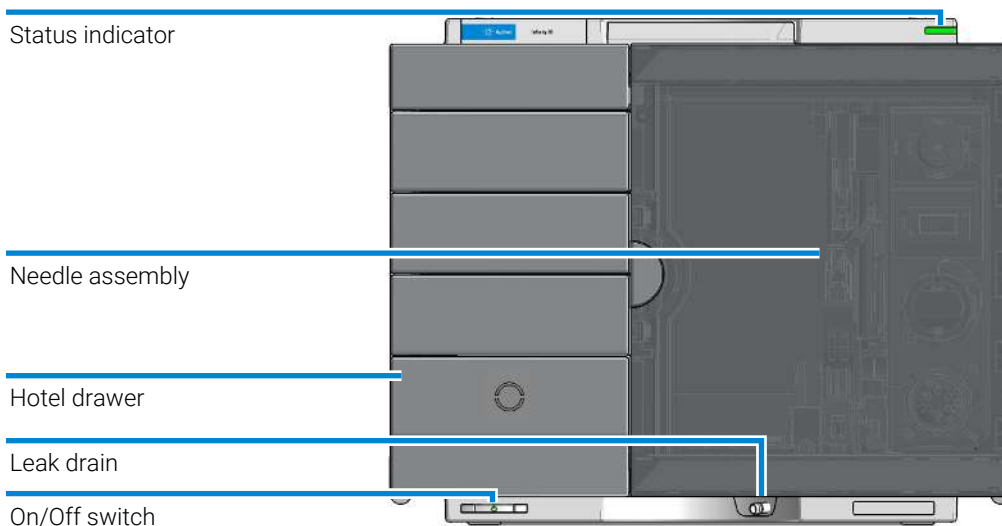


Figure 4: Overview of the Hybrid Multisampler

Product Description of the 1290 Infinity III Vialsampler (G7129B)

The Agilent 1290 Infinity III Vialsampler is an autosampler 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 thermostat for stable temperatures from 4 °C to 40 °C, all within one module.

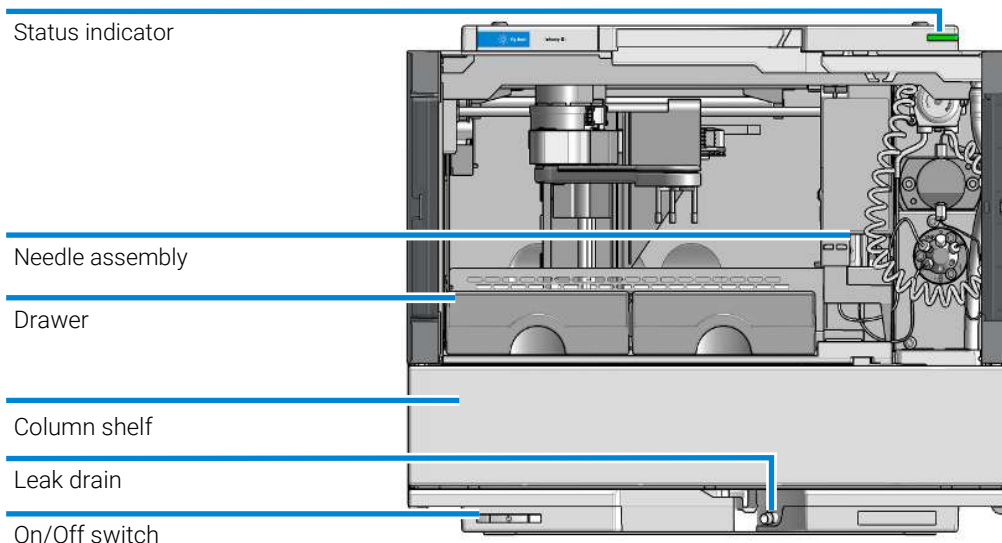


Figure 5: Overview of the Vialsampler

Product Description of the 1290 Infinity III Multicolumn Thermostat (G7116B)

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

This capability provides high flexibility for optimized speed and enhanced selectivity of LC separations. Exchangeable ultra-high-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.

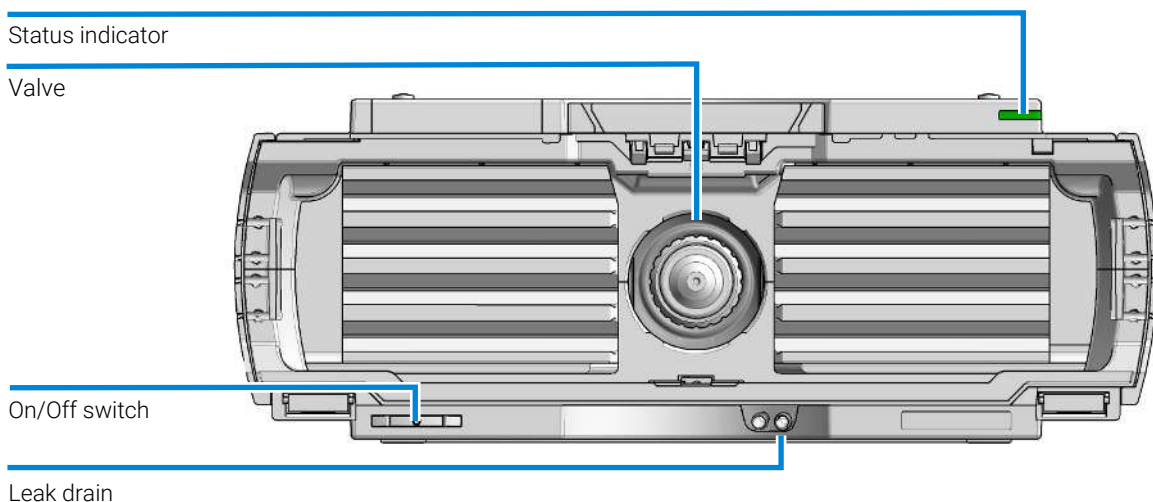


Figure 6: Overview of the Multicolumn Thermostat

Product Description of the 1290 Infinity III Diode Array Detector (G7117B)

The Agilent 1290 Infinity III Diode Array Detector (with variable slit) 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.

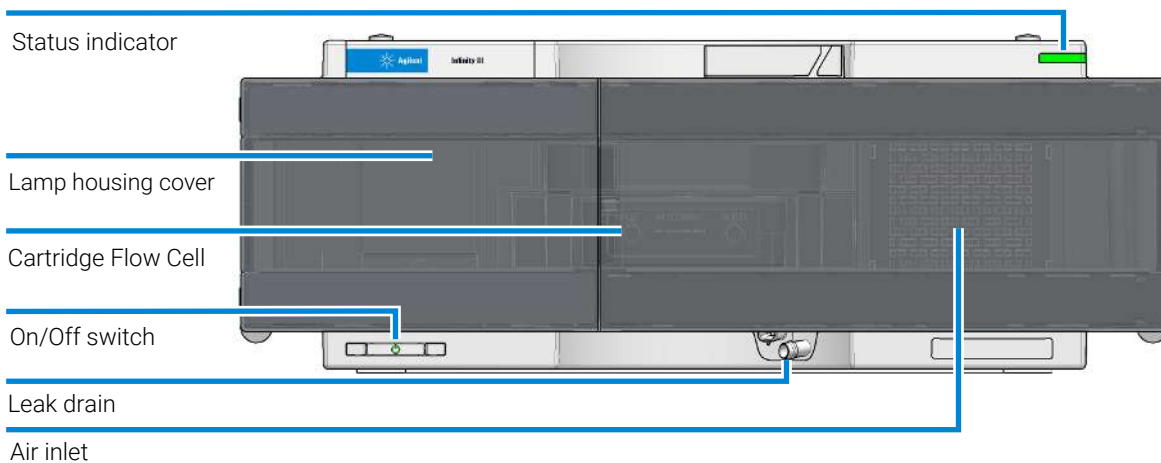


Figure 7: Overview of the G7117B Detector

Product Description of the 1290 Infinity III Variable Wavelength Detector (G7114B)

The Agilent 1290 Infinity III 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 ($\leq \pm 1.5 \mu\text{AU}$) 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.

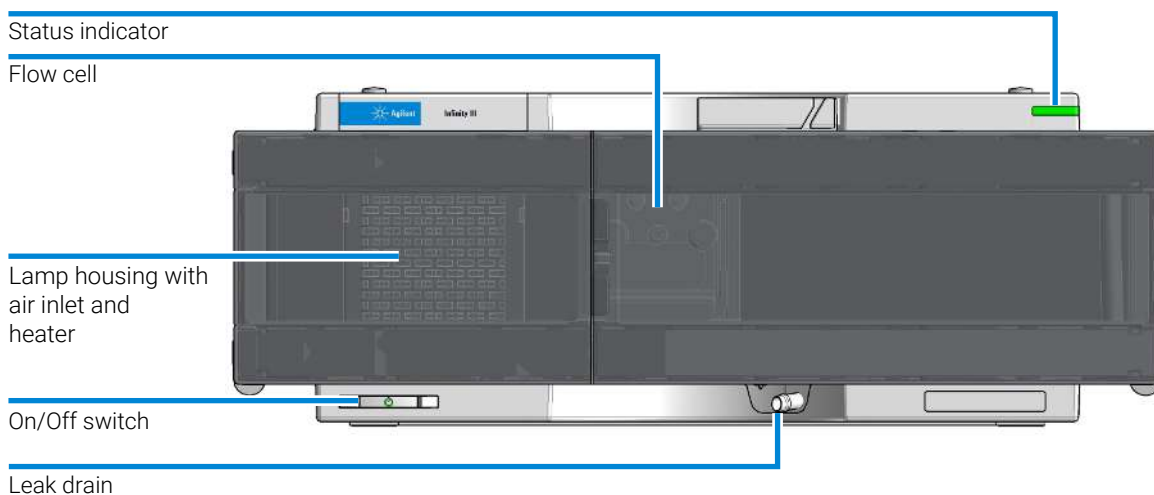


Figure 8: Overview of the G7114B Detector

Product Description of the 1290 Infinity III Fluorescence Detector (G7123B)

The Agilent 1290 Infinity III Fluorescence Detector is a low noise, highly sensitive fluorescence detector that introduces minimal peak dispersion and has been specifically designed for UHPLC applications. Fast switching of both excitation and emission wavelengths is possible, and the detector offers spectral data in either the excitation or emission dimensions for ensuring optimal performance.

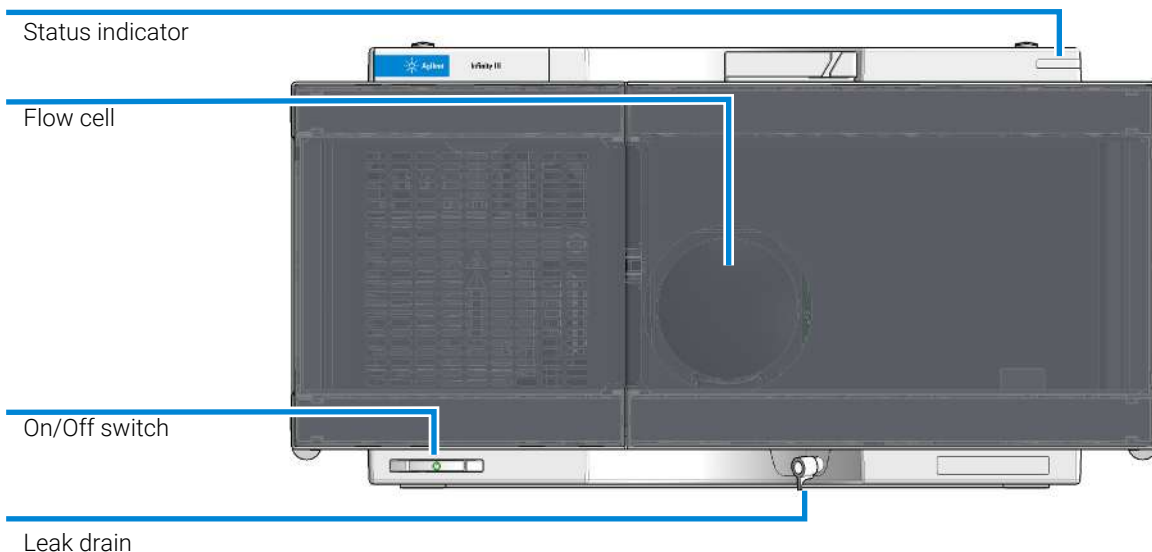


Figure 9: Overview of the G7123B Detector

Product Description of the InfinityLab Level Sensing (G7175A)

The Agilent InfinityLab Level Sensing prevents HPLC instrument or column damage, and time-consuming re-analysis because the mobile phase has run dry. This easy, straightforward system, when used together with OpenLab CDS, also offers a solvent prediction. This feature predicts your HPLC solvent consumption for a complete sequence and warns you before you start so that the injections complete successfully.

The InfinityLab Level Sensing module simplifies the process of LC system preparation and control during analysis. Accurate monitoring of solvent levels ensures optimal productivity.

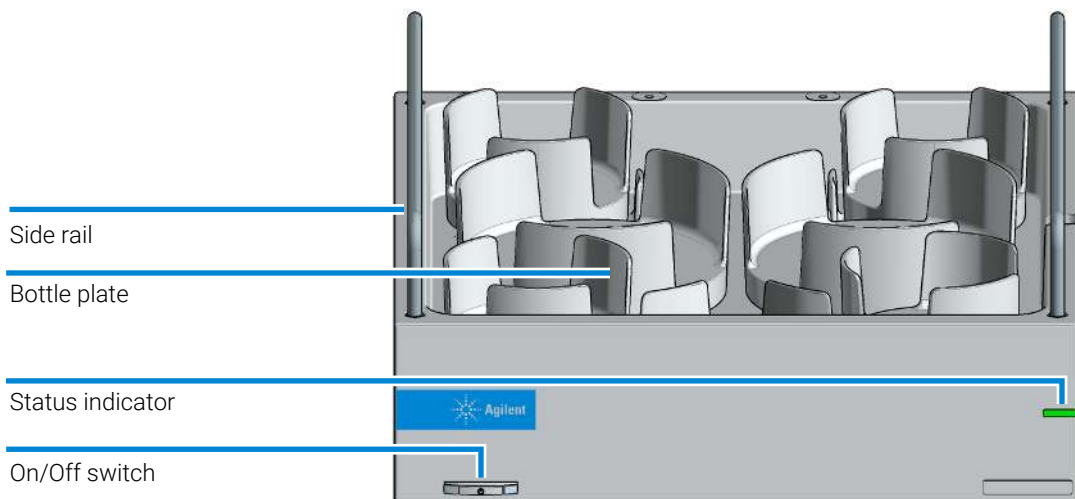


Figure 10: Overview of the Level Sensing module



2 Installation

This chapter provides information on unpacking, checking on completeness, stack considerations and installation of the module.

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Installing the System Modules

For details of installation procedures for the modules, refer to the individual module manuals. These manuals also contain information on specifications, maintenance and parts.

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.

The following configurations are possible:

- InfinityLab Flex Bench
- Single Stack (maximal 4 modules, in a bench rack or directly on the bench)
- InfinityLab Benchtop, providing more flexibility
- Two Stacks (in a bench rack or directly on the bench)

The table below summarizes the advantages of the different prescribed configurations.

Table 1: Overview on pros and cons of different stack configurations

Modules in a stack	InfinityLab Flex Bench Configuration	Single Stack Configuration	Two Stacks Configuration
fewer than 5	Pros • no bench required • mobile • optimal access to the modules, solvent bottles, pumps, columns, and accessories • integrated waste concept	Pros • minimal bench space required Cons • high stack	Pros • lower stacks • flexible combinations Cons • maximum bench space required
5 and more	+ possible	- not possible	+ possible

Agilent InfinityLab Flex Bench

Agilent recommends using 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

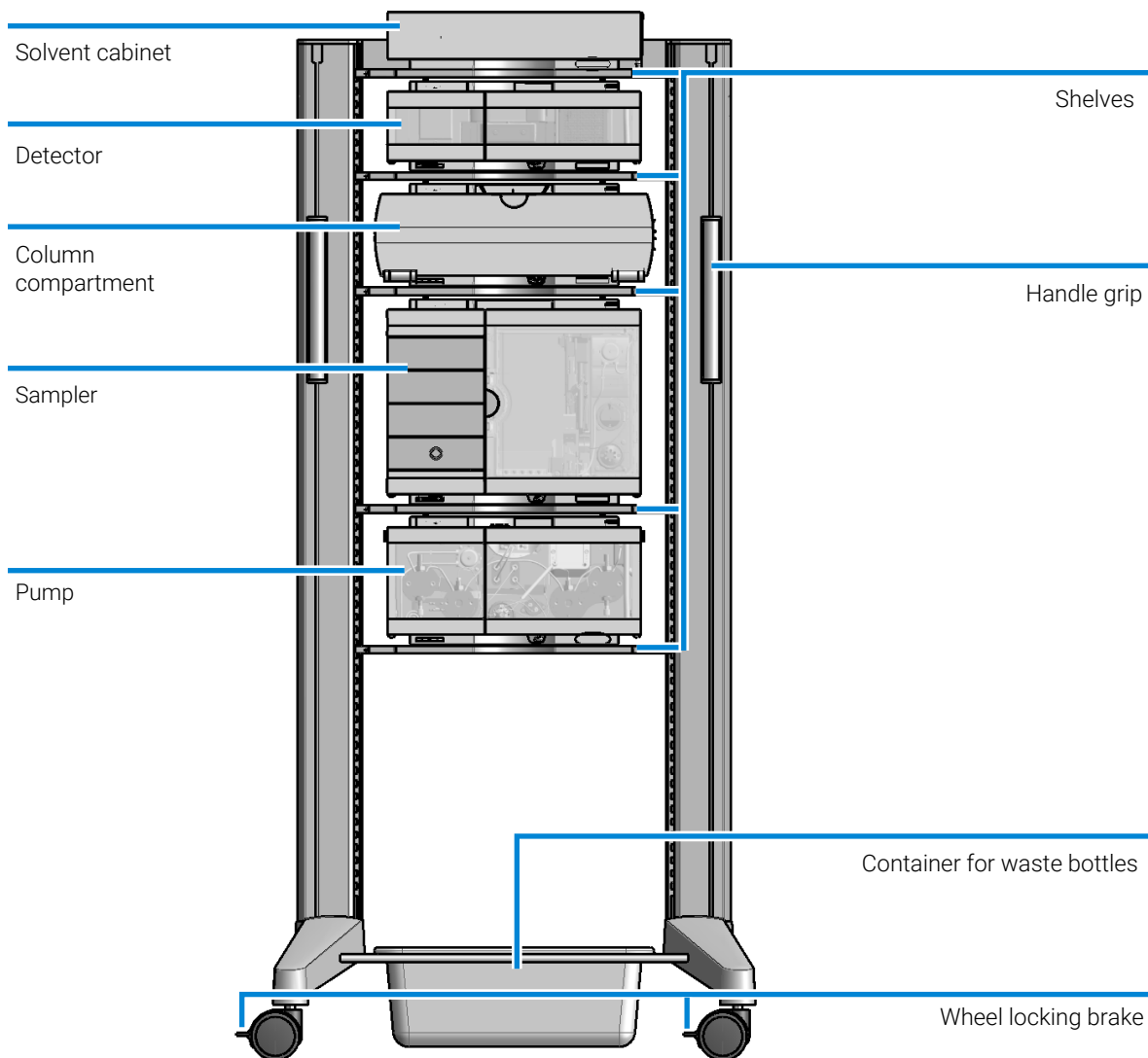


Figure 11: Agilent InfinityLab Flex Bench

One Stack Configuration

Ensure optimum performance by stacking the modules as shown exemplarily in [Figure 12](#) on page 24. This configuration optimizes the flow path for minimum delay volume and minimizes the bench space required.

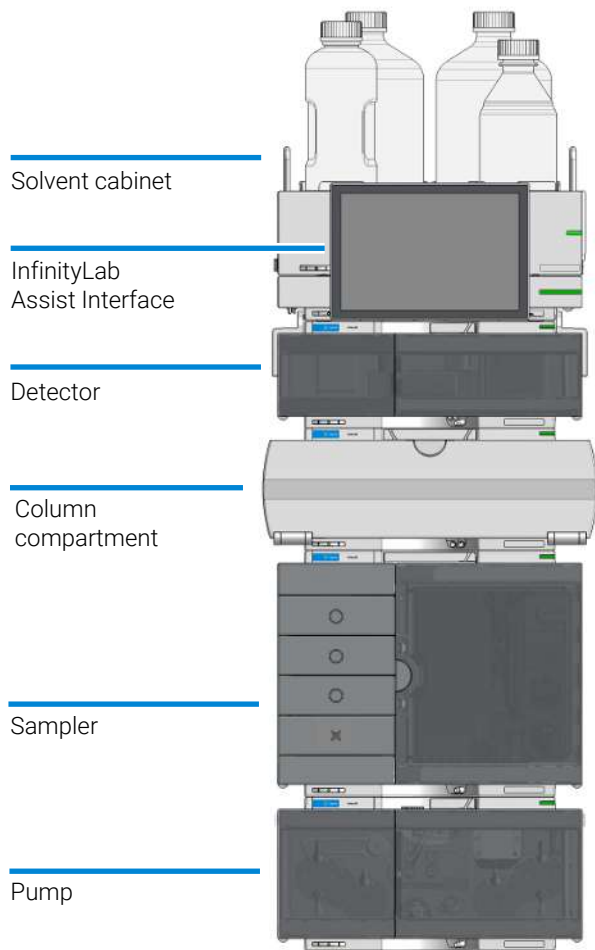


Figure 12: Single stack configuration (bench installation, example shows a Multisampler)

Vialsampler One Stack Configuration

Ensure optimum performance by stacking the modules as shown exemplarily in [Figure 13](#) on page 25 and [Figure 14](#) on page 26 for a Vialsampler set up with and without an Integrated Column Compartment (ICC), respectively. This configuration optimizes the flow path for minimum delay volume and minimizes the bench space required.

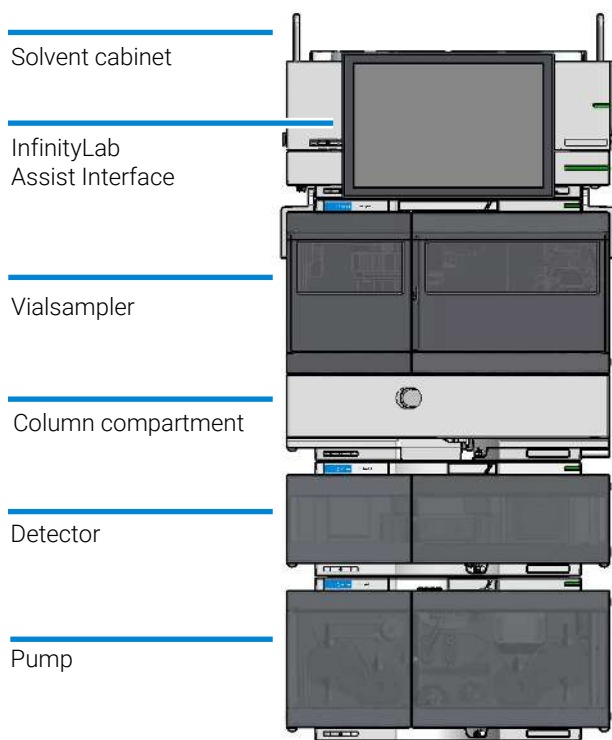


Figure 13: Single stack configuration (bench installation, example shows a vialsampler with optional ICC installed)

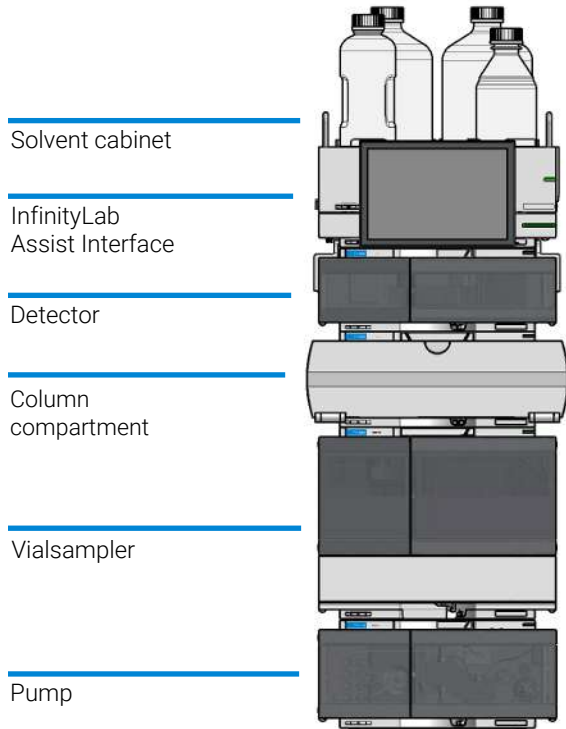


Figure 14: Single stack configuration (bench installation, example shows a Vialsampler coupled with a standalone column compartment)

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.

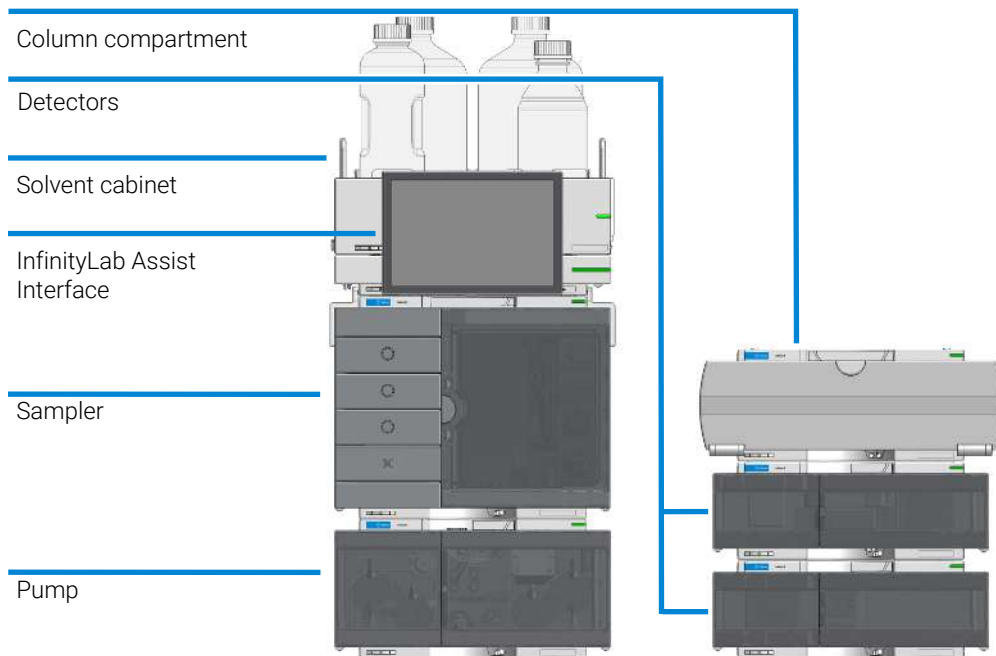


Figure 15: Two stack configuration (bench installation, example shows a Multisampler)

Vialsampler Two Stack Configuration

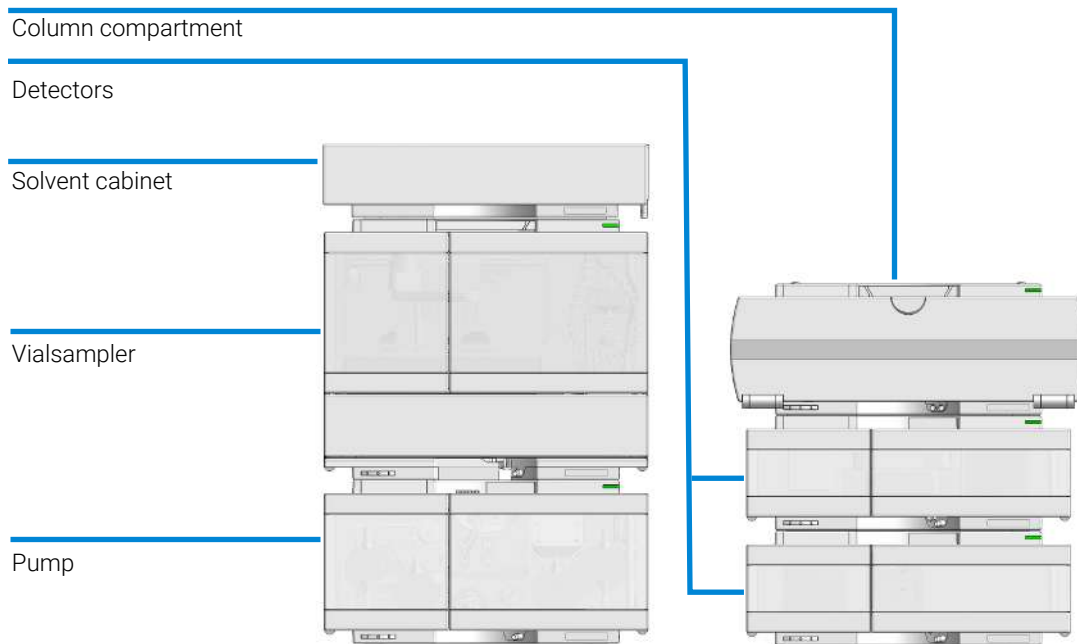


Figure 16: Two stack configuration (bench installation, example shows a Vialsampler coupled with a standalone column compartment)

Integration Into the Network

For network integration of your system refer to user manuals of your modules (chapter *LAN Configuration*).

Standard Capillary Setup

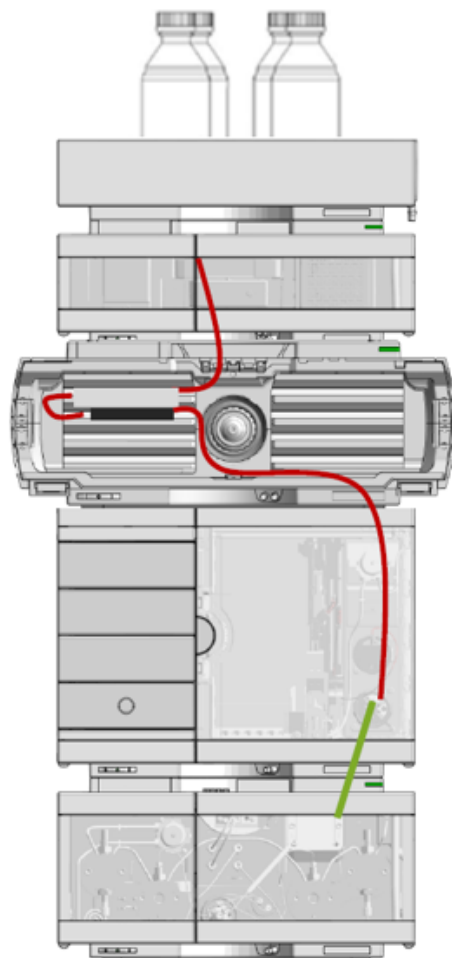


Figure 17: Standard capillary setup

Installation

Standard Capillary Setup

Table 2: Capillary properties

Color	Inner diameter	μL 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)	

Handling Leak and Waste

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 III 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/III 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 Thermostat (condensate)
- from the pump's Seal Wash Sensor (if applicable)
- from the pump's Purge Valve or Multipurpose Valve

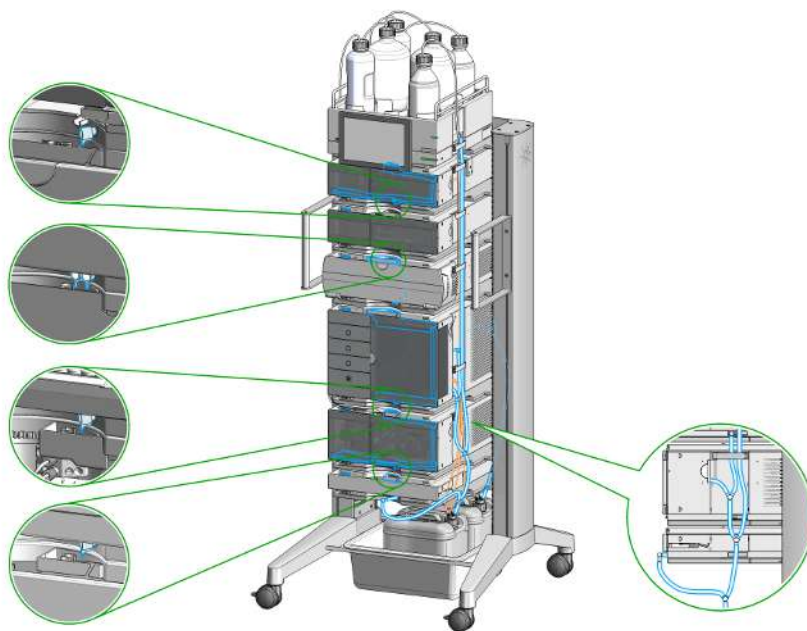


Figure 18: Infinity III Leak Waste Concept (Flex Bench installation)

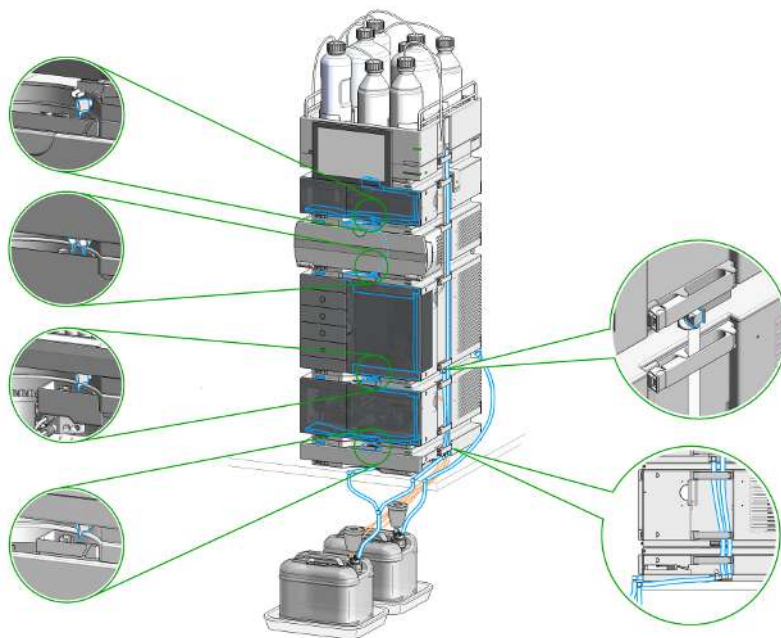


Figure 19: Infinity III Single Stack Leak Waste Concept (bench installation)

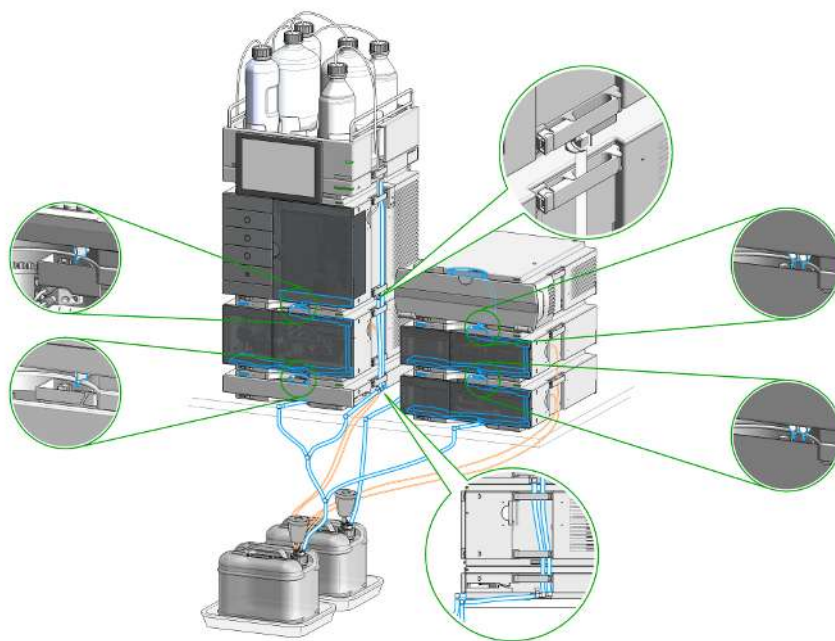


Figure 20: Infinity III Two Stack Leak Waste Concept (bench installation)

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

Drain Connectors Installation

Drain Connectors have been developed to improve leak drainage for low flow leaks of high viscosity solvents (for example, isopropanol) in Agilent InfinityLab LC Series Systems. Install these parts to modules where they are missing (usually preinstalled).

- Make sure that dripping adapters are correctly installed on each module in the LC stack, excluding lowest module.
- Remove the dripping adapter if it is appeared to be installed on the lowest module in the LC stack and connect waste tube instead.
- Consider 5004-0000 (Drain Connectors Kit) if drain adaptor is missing on some module(s).

For illustration, see [Handling Leak and Waste](#) on page 32.

Parts required

Qty.	p/n	Description
1	 5004-0000	Drain Connectors Kit

Content of Drain Connectors Kit (p/n 5004-0000)

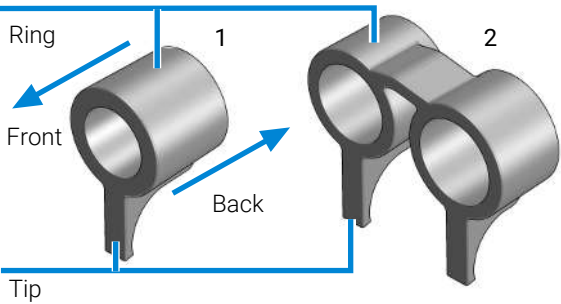


Figure 21: Overview of Drain Connectors: Single (left) and Double (right)

#	Qty.	p/n	Description
Parts can be ordered only as a complete kit.			
1	3	 5043-1834	Single Drain Connector ID3.0-Long
2	1	 5043-1836	Double Drain Connector-Long

Table 3: Compatibility of drain connectors and modules

Drain Connector Type	Compatible Module	Compatible Module Type
Double	G7116A/B	Column Compartment
Single	G7114A/B	Detector
	G7115A	
	G7117A/B/C	
	G7121A/B	
	G7123B	
	G7162A/B	
	G7165A	
	G7129A/B/C	Sampler
	G7167A/B/C	
	G5668A	
	G7137A/B	
	G7157A	
	G4767A	
	G7122A	Degasser
	G7104A/C	Pump
	G7110B	
	G7111A/B	
	G7112B	
	G7120A	
	G7131A/C	
	G7132A	
	G5654A	
	G4782A	

Prerequisites

- Leak drains of LC modules are clean and free of salt or solvent residuals.

NOTE

Do not install drain connectors on the bottom modules of the stack. Drain outlet of the bottom module has to be connected via waste tubing to a suitable waste container (see Leak and Waste Handling in the manual for a respective module).

NOTE

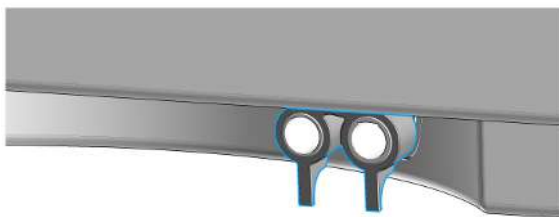
In case of incorrect installation, drain connectors cannot fully perform the intended function.

NOTE

It is not required to power off the HPLC stack to install Single and Double Drain Connectors. The installation of the connectors does not affect the analysis performed during the installation.

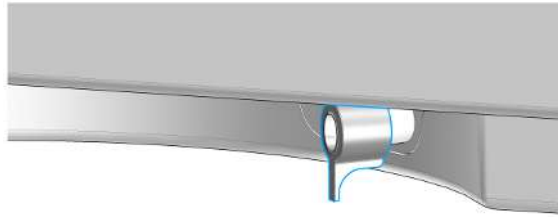
Install the Double Drain Connector on the leak drain of the Multicolumn Thermostat

- 1 Align the rings with the leak drain outlets of the module, press slightly with the fingers, and slide the connector along the leak drain outlets until it is aligned with the front of the leak drain.



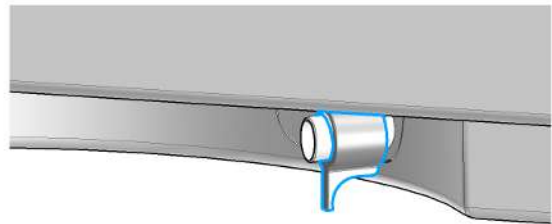
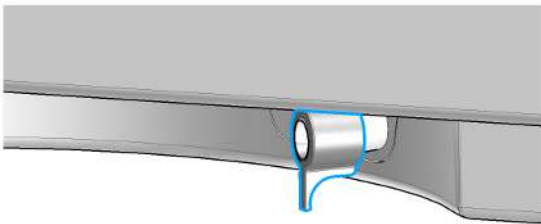
Install Single Drain Connectors on other modules in the LC stack

- 1 Align the ring with the leak drain outlet of the module, press slightly with the fingers, and slide the connector along the leak drain outlet until it is aligned with the front of the leak drain.



Make sure that the following requirements are covered:

- The tip of the drain connector points straight down.
- The leak drain outlets and the drain connectors are aligned properly.



Waste Concept

Agilent recommends using 5043-1221 (6 L waste can with 1 Stay Safe cap GL45 with 4 ports) 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.



Waste Guidance



NOTE

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

Leak Sensor

CAUTION**Solvent incompatibility**

The solvent DMF (dimethylformamide) leads to corrosion of the leak sensor. The material of the leak sensor, PVDF (polyvinylidene fluoride), is incompatible with DMF.

- Do not use DMF as mobile phase.
- Check the leak sensor regularly for corrosion.
- Do not place metal parts on the leak panel or the leak sensor.

NOTE

The leak sensor in the Vialsampler is hidden under the ICC Column Heater or Column Shelf respectively.



3 Configuration Settings

This chapter describes how to configure the system.

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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

NOTE

If the system in use supports the InfinityLab Assist, follow the instructions provided.

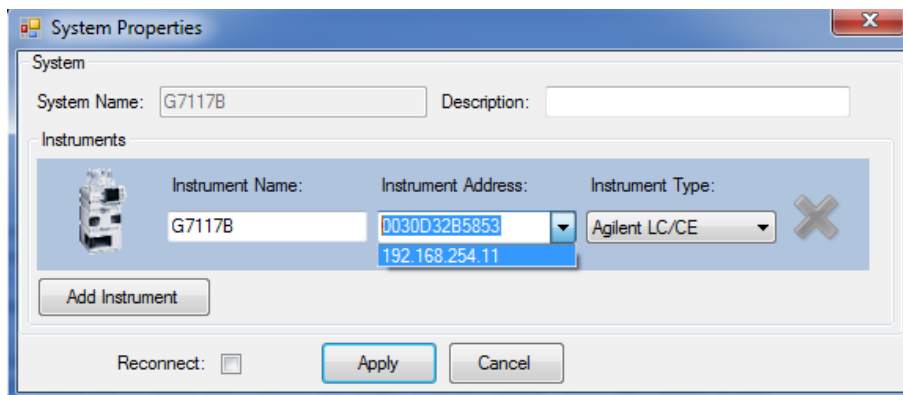
Else use LabAdvisor, or OpenLab CDS.

Example shows an instrument configuration with a Diode Array Detector in LabAdvisor.

- 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 ¹ / IP address and/or Instrument Name).

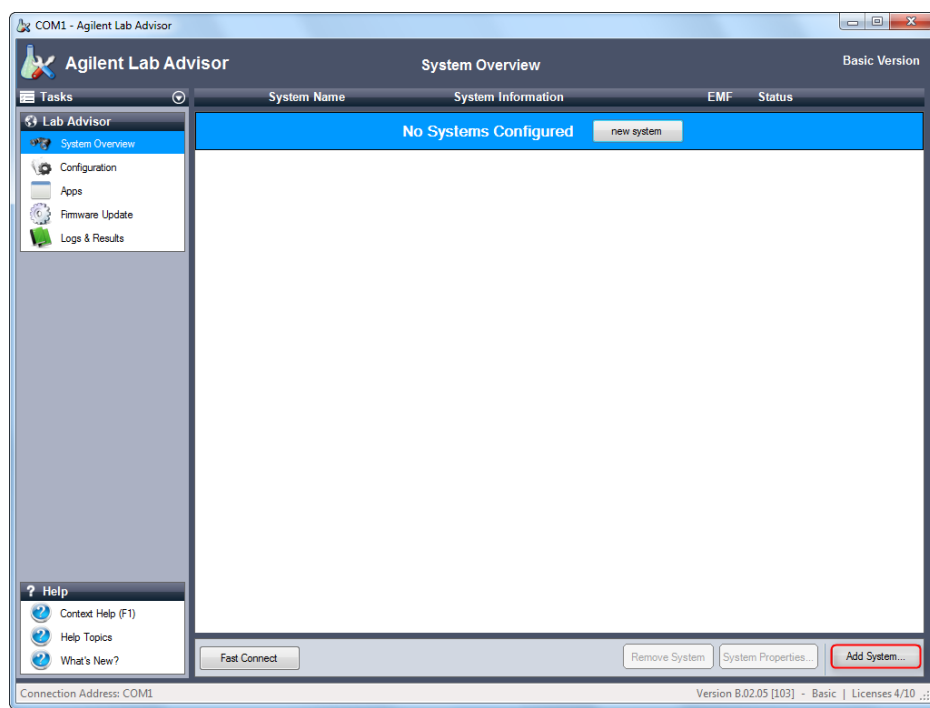


¹ MAC address can only be used in DHCP DIP-switch configuration.

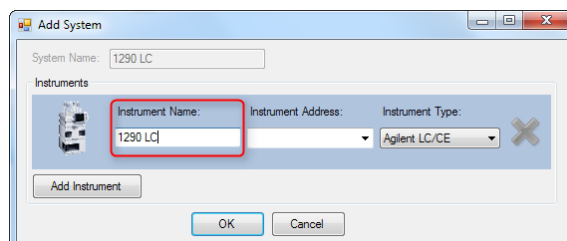
Lab Advisor

Adding a New System

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



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

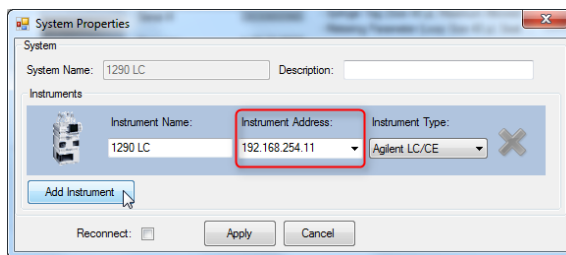


- 2 Enter a name in the **Instrument Name** field.

NOTE

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

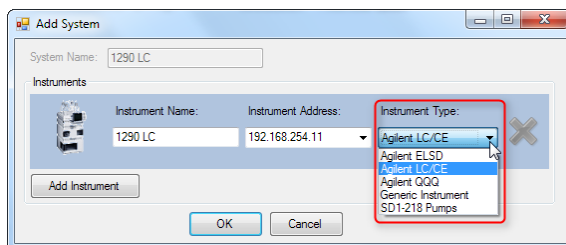
- 3 Enter the connection details in the **Instrument Address** field.



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.



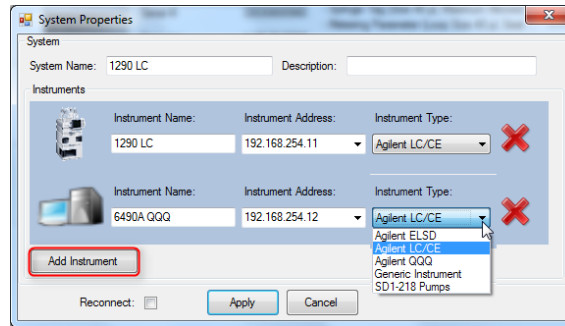
NOTE

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).

Configuration Settings

Lab Advisor

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

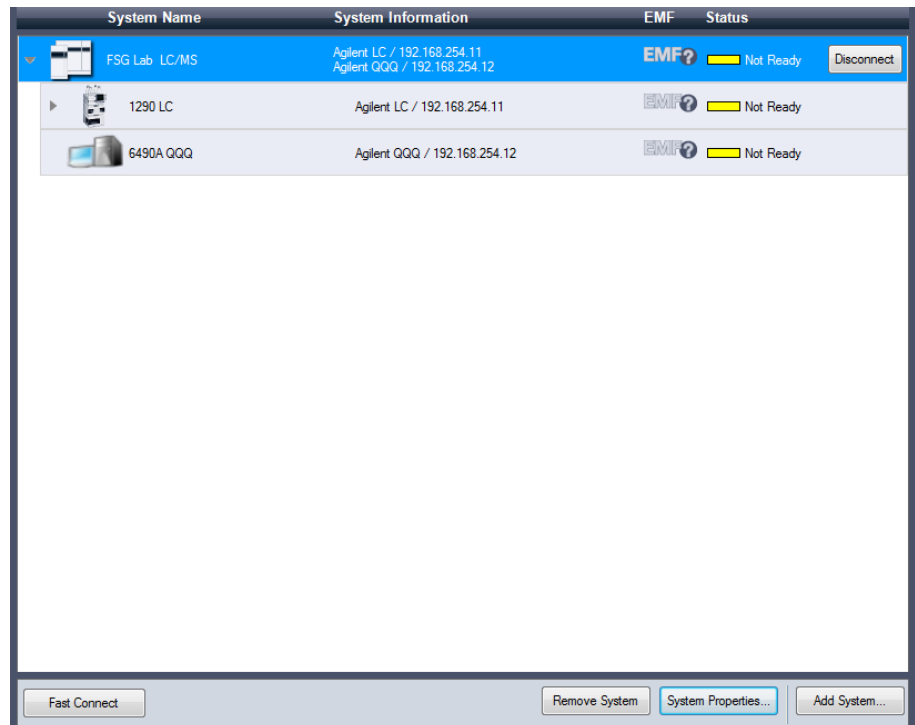


NOTE

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

- 6 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.



4

Quick Start Guide

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

Best Practices 49

Daily / Weekly Tasks 49

Power Up / Shut Down the Pump 49

Prepare the Pump 50

How to Deal With Solvents 51

Select Channels for Gradient Valve (4CGV) 51

Optional Inline Filter 51

Prepare a Run 53

InfinityLab LC Performance Check 63

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 before operation.
- Equilibrate the system with composition and flow rate of subsequent method.

Weekly Tasks

- Change seal wash solvent (10 % isopropanol in water) and bottle.
- If applications with salts were used, flush all channels with water and remove possible salt deposits manually.
- Inspect solvent filters for dirt or blockages. Exchange if no flow is coming out of the solvent line when removed from the degasser inlet.

Power Up / Shut Down the Pump

Prepare the Pump

- Use fresh 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, depending on the pump type.

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 Gradient Valve (4CGV)

- Use lower channels (A and/or D) for buffer solutions.
- Regularly flush all 4CGV channels with water to remove possible salt deposits.
- Check compatibility of buffers and organic solvents to avoid precipitation.

NOTE

The 4CGV is only available for the Flexible Pump, not for the High-Speed Pump.

Optional Inline Filter

The pump can be equipped with an additional inline filter (5067-5407 (Inline filter assembly, material: stainless steel)) with a nominal filter pore size of 0.3 µL.

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 use of the inline filter:

- filter solvents before use,
- follow best practices,
- back-flush the filter weekly,
- exchange the filter frit regularly.

CAUTION

Damage to the valve

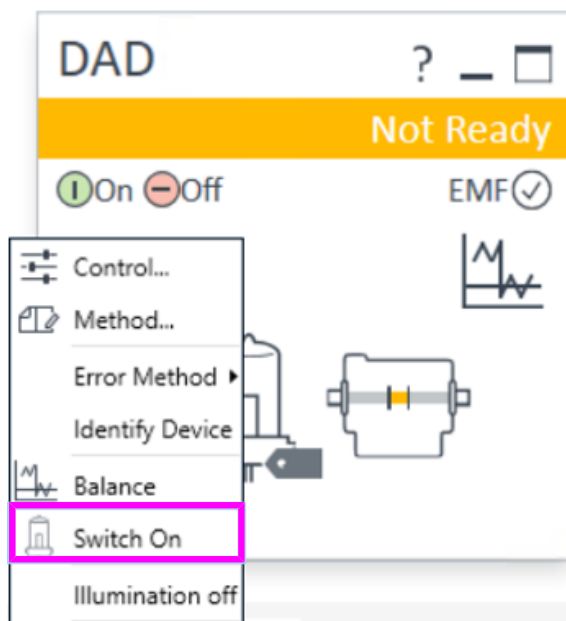
- Use the filter flush mode only if the optional inline filter is installed.

See *1290 Infinity II Inline Filters Technical Note (G7167-Inline-Filters-TechPu-en-SD-29000397.pdf, SD-29000397)* for further reference.

Prepare a Run

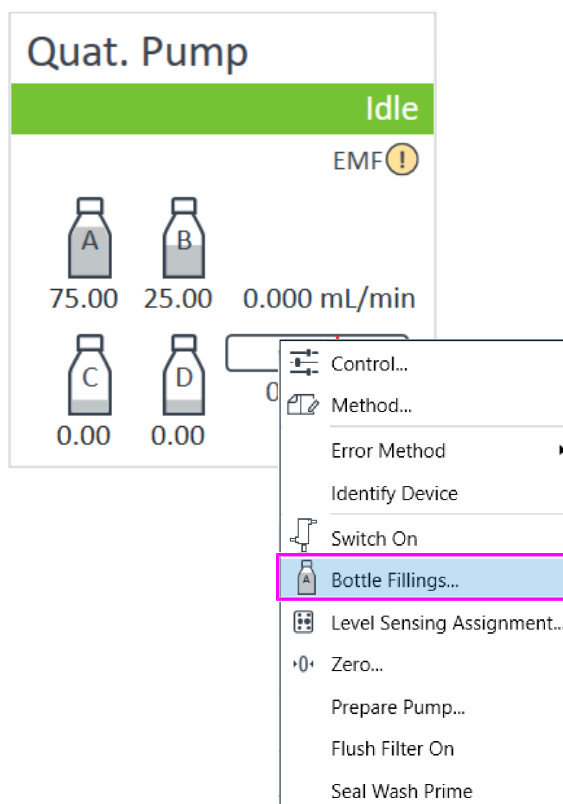
This procedure exemplarily shows how to prepare a run. Parameters as shown in the screenshots may vary, depending on the system installed.

- 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		
☒	Prevent analysis if level falls below	0.05 liter
☐	Turn pump off if running out of solvent	

- 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 Technical Note (InfinityLab-BestPractice-en-SD-29000194.pdf, SD-29000194)*.

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 *10⁻⁶/bar ☐ No compensation

Maximum Flow Gradient

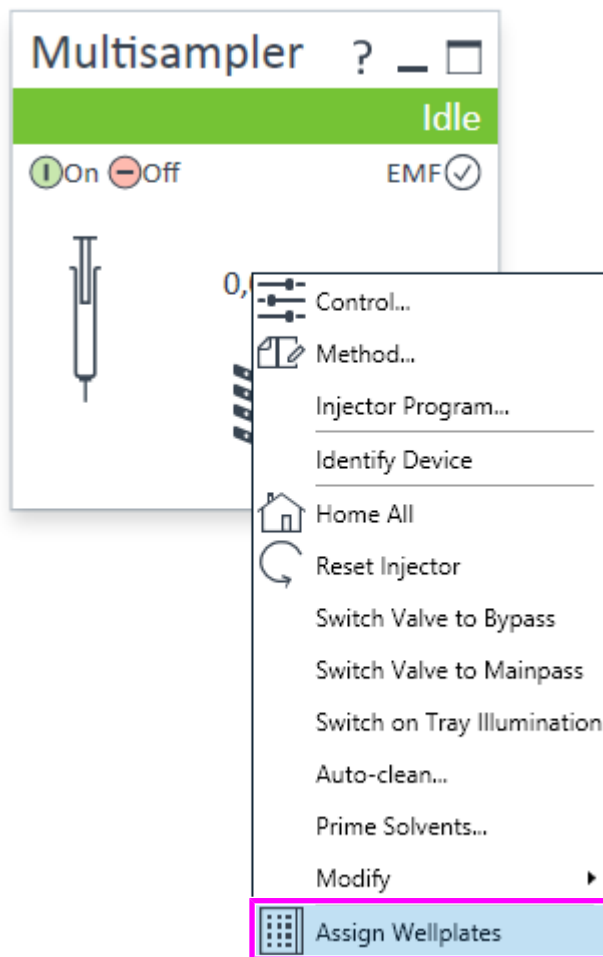
100.000 mL/min²

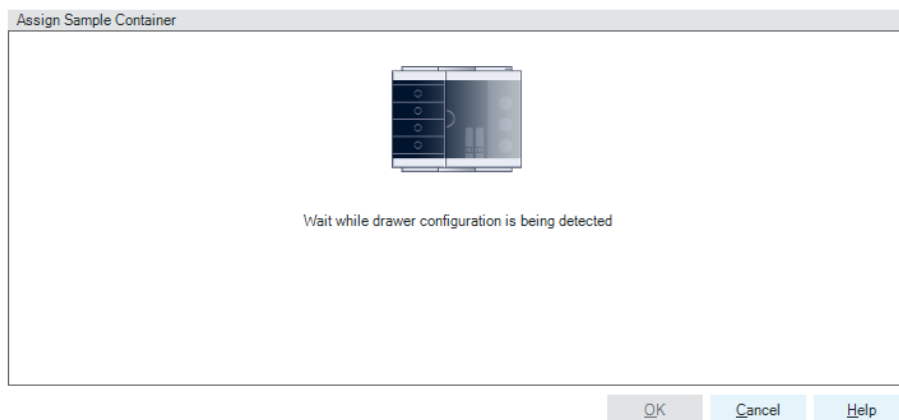
Primary Channel

Automatic

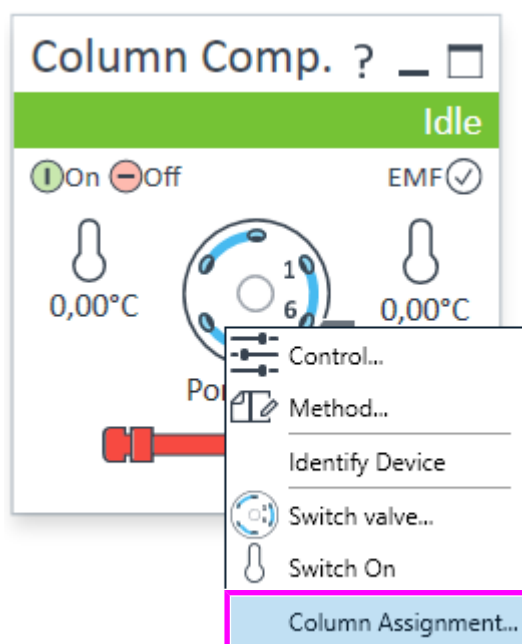
Timetable (1/100 events)

- 8 Choose the tray format of the sampler.





- 9 Add a new column.

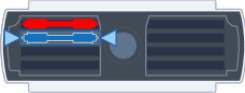


10 Enter the column information.

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 TagCancelHelp

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

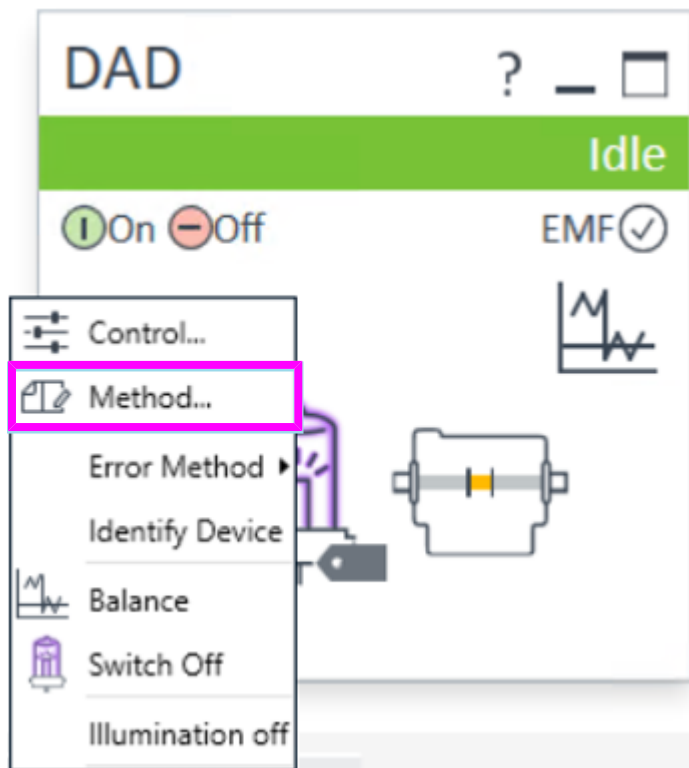
Timetable (empty)

Ok

Apply

Cancel

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



Quick Start Guide

Prepare a Run

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

DAD (G7115A) 

Signals

	Acquire	Wave length	Band width	Reference Wavelength	Reference Bandwidth
Signal A	☒	254	4	☒ 360	100 nm
Signal B	☐	254	4	☐ 360	100 nm
Signal C	☐	210	4	☐ 360	100 nm
Signal D	☐	230	4	☐ 360	100 nm
Signal E	☐	280	4	☐ 360	100 nm
Signal F	☐	260	4	☐ 360	100 nm
Signal G	☐	270	4	☐ 360	100 nm
Signal H	☐	290	4	☐ 360	100 nm

Peakwidth

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

Stoptime

☒ As Pump/Injector
☐ 1.00 min

Posttime

☒ 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)

InfinityLab LC Performance Check

The InfinityLab LC Performance Check is run after the complete installation of the module stack to affirm the functionality of all modules and the system. The InfinityLab LC Performance Check confirms that each module performs and is connected correctly.

For more information, refer to Agilent CrossLab Start Up Installation, or Introduction.

5 Parts and Consumables

This chapter provides information on additional parts and consumables.

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InfinityLab Quick Connect and Quick Turn Fittings 66

InfinityLab Quick Connect Fittings 66

InfinityLab Quick Connect Fitting Replacement Capillaries 68

InfinityLab Quick Turn Fitting 69

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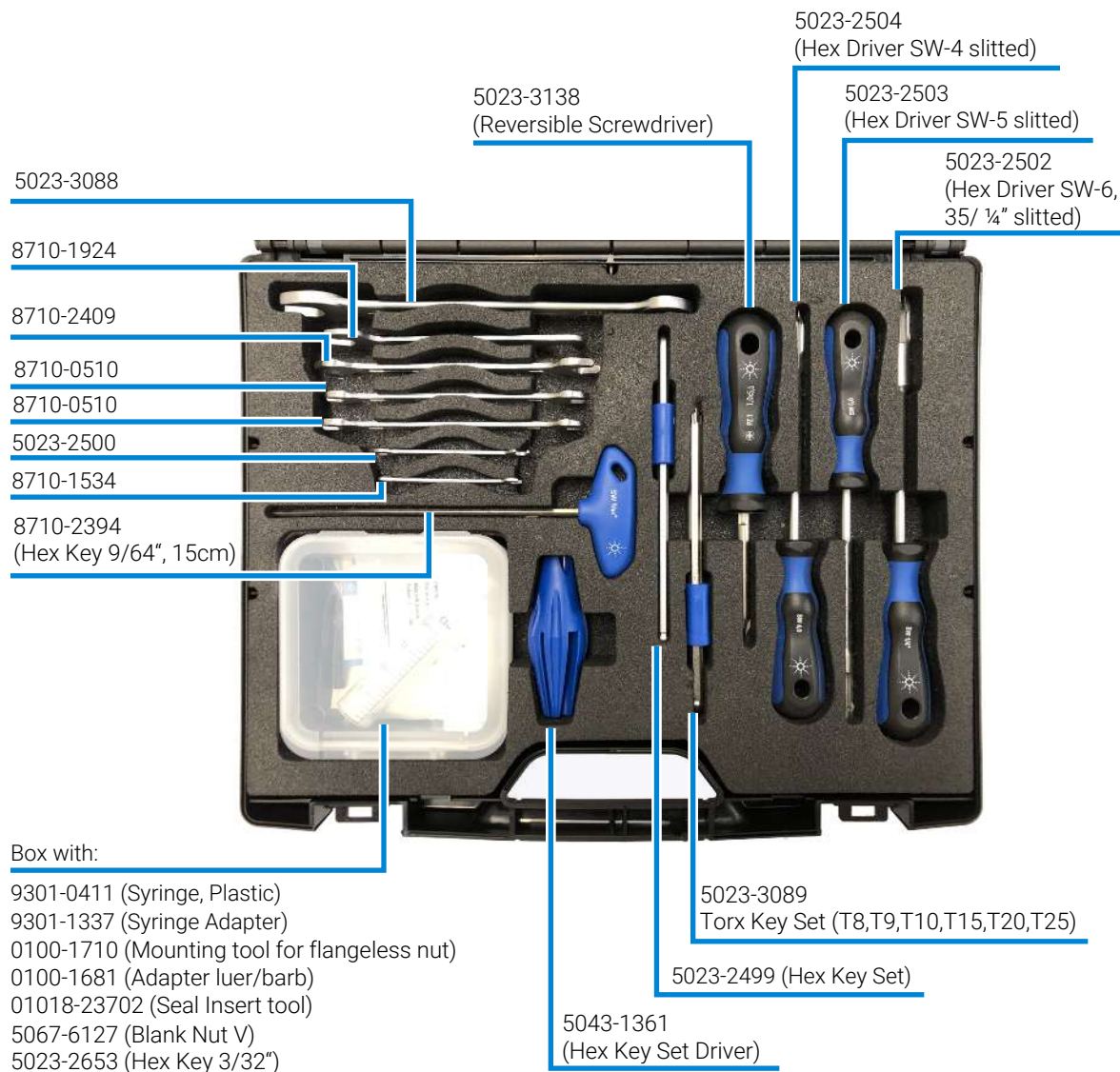
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InfinityLab Benchtop 76

HPLC System Tool Kit



InfinityLab Quick Connect and Quick Turn Fittings

InfinityLab Quick Connect Fittings

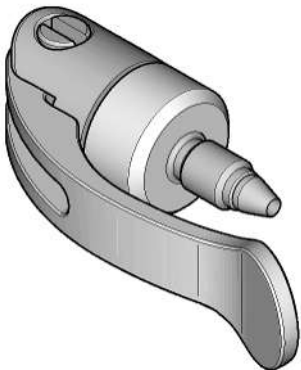


Figure 22: InfinityLab Quick Connect Fitting

p/n	Description
 5067-5965	InfinityLab Quick Connect LC fitting (fitting without preinstalled capillary)
 5043-0924	Front Ferrule for Quick Connect/Turn Fitting
 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
 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

Parts and Consumables
InfinityLab Quick Connect and Quick Turn Fittings

p/n	Description
 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

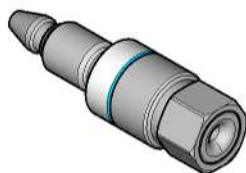


Figure 23: InfinityLab Quick Turn Fitting

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

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, long socket
 5500-1205	Capillary ST 0.075 mm x 500 mm, long socket
 5500-1188	Quick Turn 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	InfinityLab Quick Turn Capillary ST 0.12 mm x 280 mm, long socket
 5500-1192	Capillary ST 0.12 mm x 500 mm, long socket
 5500-1193	InfinityLab Quick Turn 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
 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 0.17 mm x 700 mm, ns/ns
 5500-1262	Capillary 0.25 mm x 150 mm, ns/ns
 5500-1263	Capillary ST 0.25 mm x 400 mm, long socket
 5500-1200	Quick Turn Capillary ST 0.12 mm x 130 mm SL/M
 5500-1288	Capillary ST 0.12 mm x 150 mm, long socket, M4
 5500-1290	Capillary ST 0.17 mm x 150 mm, long socket, M4

Safety Caps and Solvent Bottles

Stay Safe Caps

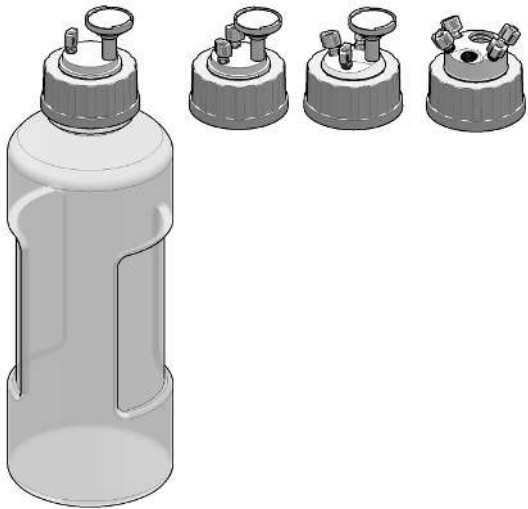


Figure 24: Solvent bottle with different types of Stay Safe caps

p/n	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 25: Kit: Waste can with Stay Safe cap

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

Solvent Bottles

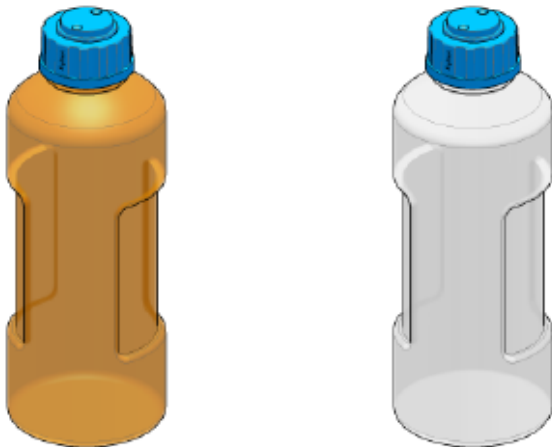


Figure 26: Solvent bottles

p/n	Description
9301-6341	Solvent bottle (GL45), amber 2 L
9301-6342	Solvent bottle (GL45), clear 2 L
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)

In This Book

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

The manual describes the following:

- introduction,
- install the modules,
- configuration settings,
- quick start guide,
- parts and consumables.

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