

Agilent InfinityLab Online LC Solution

Site Preparation Checklist

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

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

Introduction

Customer Responsibilities

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

- The necessary laboratory or bench space is available.
- The environmental conditions for the site as well as laboratory gases, plumbing and extraction.
- The power requirements related to the product (e.g. number and location of electrical outlets).
- The required operating supplies necessary for the product and installation.
- If Agilent is delivering Installation and Familiarization services, users of the instrument should be present throughout these services. Otherwise, they will miss important operational, maintenance, and safety information.
- Please consult the Special Requirements section for other product-specific information.
- HPLC grade (or better) solvents are needed for installation (acetonitrile, isopropanol, and water).
- The third-party equipment for sample delivery is available and prepared to use for installation if necessary. The requirements (electrical connection and capillary connection) for the sample delivery equipment are listed in the Special Requirements Section.
- Your site has been prepared for and meets the software, hardware, and networking specifications of OpenLab CDS v2.6 Workstation Plus.
- OpenLab CDS v2.6, or higher, Workstation Plus is installed.
- Locate your sales order information, software authorization codes, and/or software licenses/certificates for the Online LC Monitoring Software.
- The necessary software media, disks etc. are available including upgrade/update disks.
- A suitable backup is identified for your software.
- Availability of a system/network administrator as needed to connect to your intranet.

Customer Information

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

Important Customer Web Links

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

Site Preparation

Hardware

Module List

Module	Instrument Description
G3167A	1260 Infinity II Online Sample Manager
G1170A	1290 Infinity II Valve Drive and External Valve Head

Dimensions and Weight

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

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

Special Notes

- For general guidance, consult the section "Dimensions and Weight" in Agilent InfinityLab LC Series Site Preparation Checklist.

Instrument Description	Weight		Height		Depth		Width	
	kg	lbs	cm	in	cm	in	cm	in
G3167A	22 ¹	48.5 ¹	320	12.6	468	18.4	396	15.6
G1170A	1.9 ²	4.3 ²	95	3.7	300 ²	11.8 ²	95	3.7

¹ Without Sample Thermostat

² Without Sampling Valve Head

Environmental Conditions

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

Special Notes

- 1 Sources of heat and cold, e.g. direct sunlight, heating/cooling from air conditioning outlets, drafts, and/or vibrations can affect the performance.
- 2 Heat, cold, or vibration generated from other InfinityLab LC Series modules, which are installed according to instructions provided by Agilent Technologies, do not affect the performance of the LC system.
- 3 The laboratory's ambient temperature conditions must be stable for optimum performance.
- 4 The laboratory is recommended to be equipped with ventilation system to avoid high concentration levels of solvent vapors in working area.
- 5 The following table summarizes some key physical specifications. For the complete set of physical specifications, please see the corresponding module's manual.

Instrument Description	Operating Temperature Range °C (F)	Operating Humidity Range %
G3167A	4 – 40 °C (39 – 104 °F), constant temperature	< 95 % r.h. at 40 °C (104 °F), ¹ noncondensing
G1170A	4 – 55 °C (39 – 131 °F)	< 95 % r.h. at 25 – 40 °C (77 – 104 °F) noncondensing

¹ If a thermostat is installed, the upper humidity limit should be reduced. Please check your lab conditions to stay beyond dew point values for noncondensing operation

Power Consumption

Special notes

- 1 If a computer system is supplied with your instrument, be sure to account for those electrical outlets.
- 2 The heat dissipation can be calculated from the active power, using the following equation:
1 W = 3.413 BTU/h.

Instrument Description	Line Voltage and Frequency V, Hz	Maximum Power Consumption VA	Maximum Power Consumption W
G3167A	100 – 240 VAC ($\pm 10\%$) 50 or 60 Hz ($\pm 5\%$)	180 VA ¹	180 W
G1170A	100 – 240 VAC ($\pm 10\%$) 50 or 60 Hz ($\pm 5\%$)	20 VA	4 W

¹ Maximum power consumption corresponds to a sampler with the Sample Thermostat installed

Operating Supplies required by Customer for Installation

Special notes

- 1 Download the Essential Chromatography and Spectroscopy Supplies Catalogs for a complete overview about available supplies for your new and existing Agilent Instruments
<https://www.agilent.com/en-us/products/lab-supplies>
- 2 Agilent is not responsible for the provision and installation of the customer's sample delivery equipment for the Online LC Solution. If assistance and consultations are required for this activity, extra time for the installation should be discussed and scheduled in advance.

Special Requirements

HPLC grade (or better) solvents are needed for installation (acetonitrile, isopropanol, and water) with a dry residue below 1 ppm.

Equipment Positioning

The optimal stack configuration may vary. For details, see the documentation of the system in use. General recommendations for the 1260 Infinity II Prime Online LC System:

- Using the InfinityLab Flex Bench is recommended for highest flexibility.
- Stack the 1260 Infinity II Online Sample Manager at the same position as recommended for other autosamplers.
- Arrange the 1260 Infinity II Online Sample Manager aligned to the other modules.
- Consider extra 9.5 cm (3.7 in) on the right side of the LC stack to mount the 1290 Infinity II Valve Drive on the 1260 Infinity II Online Sample Manager module.

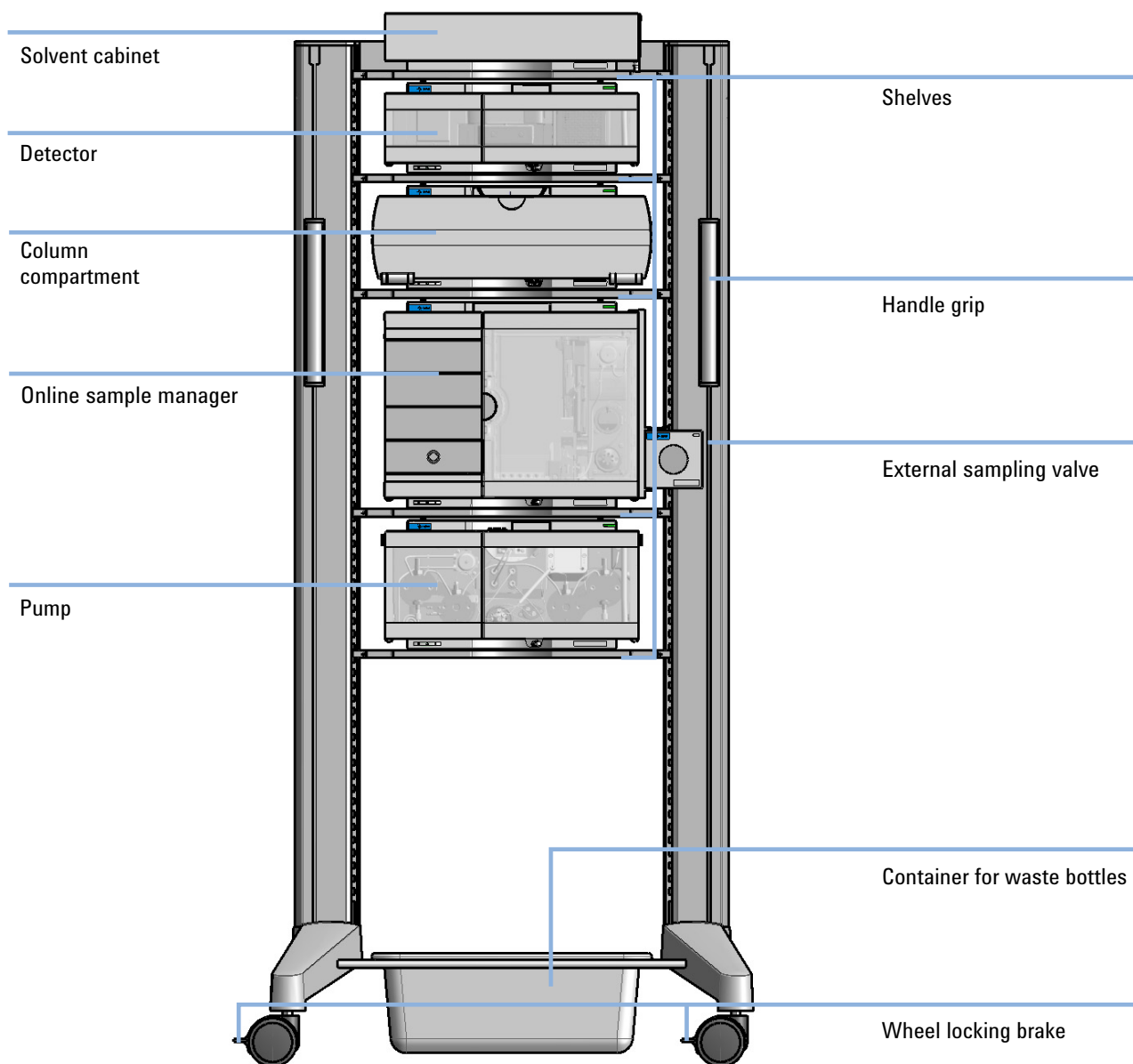


Figure 1 1260 Infinity II Prime Online LC System (Flex Bench)

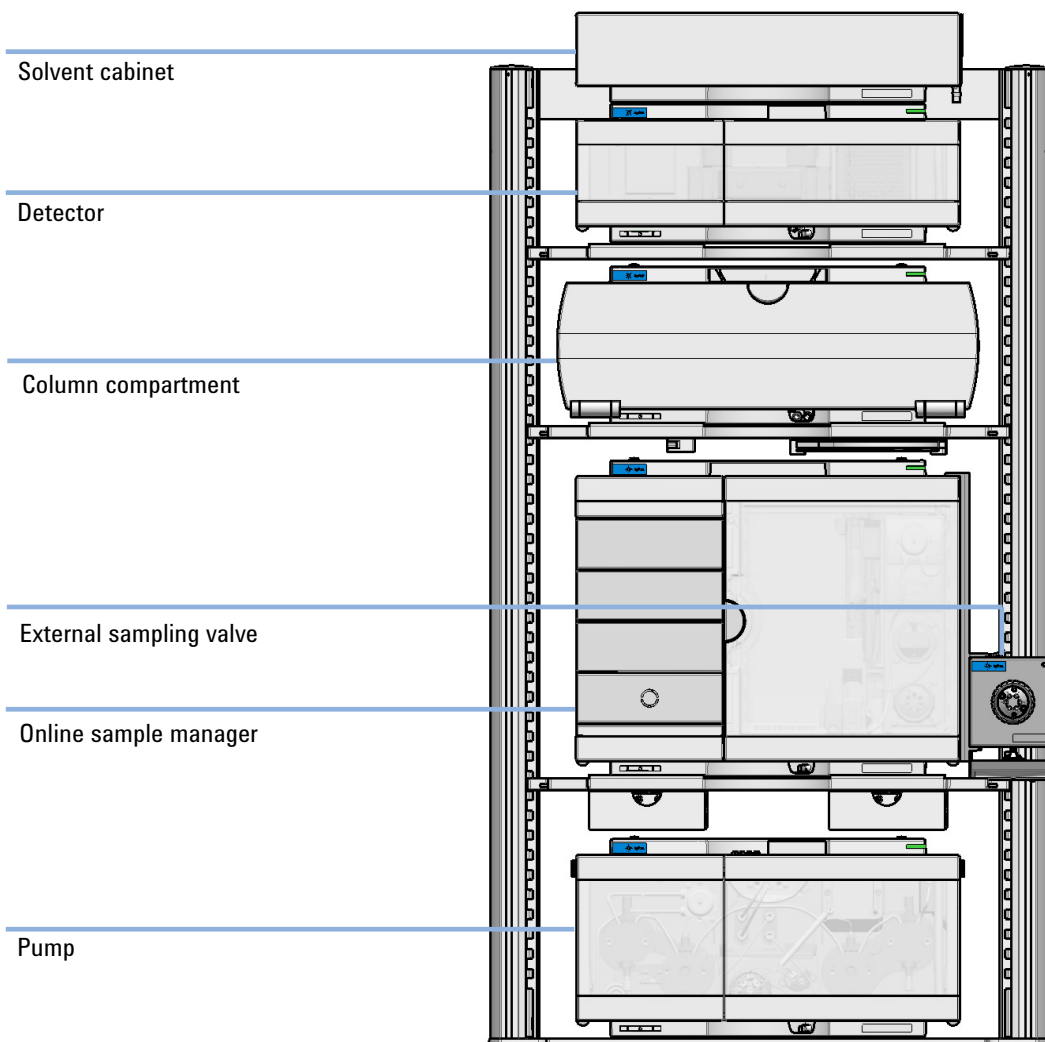


Figure 2 1260 Infinity II Prime Online LC System (Benchtop)

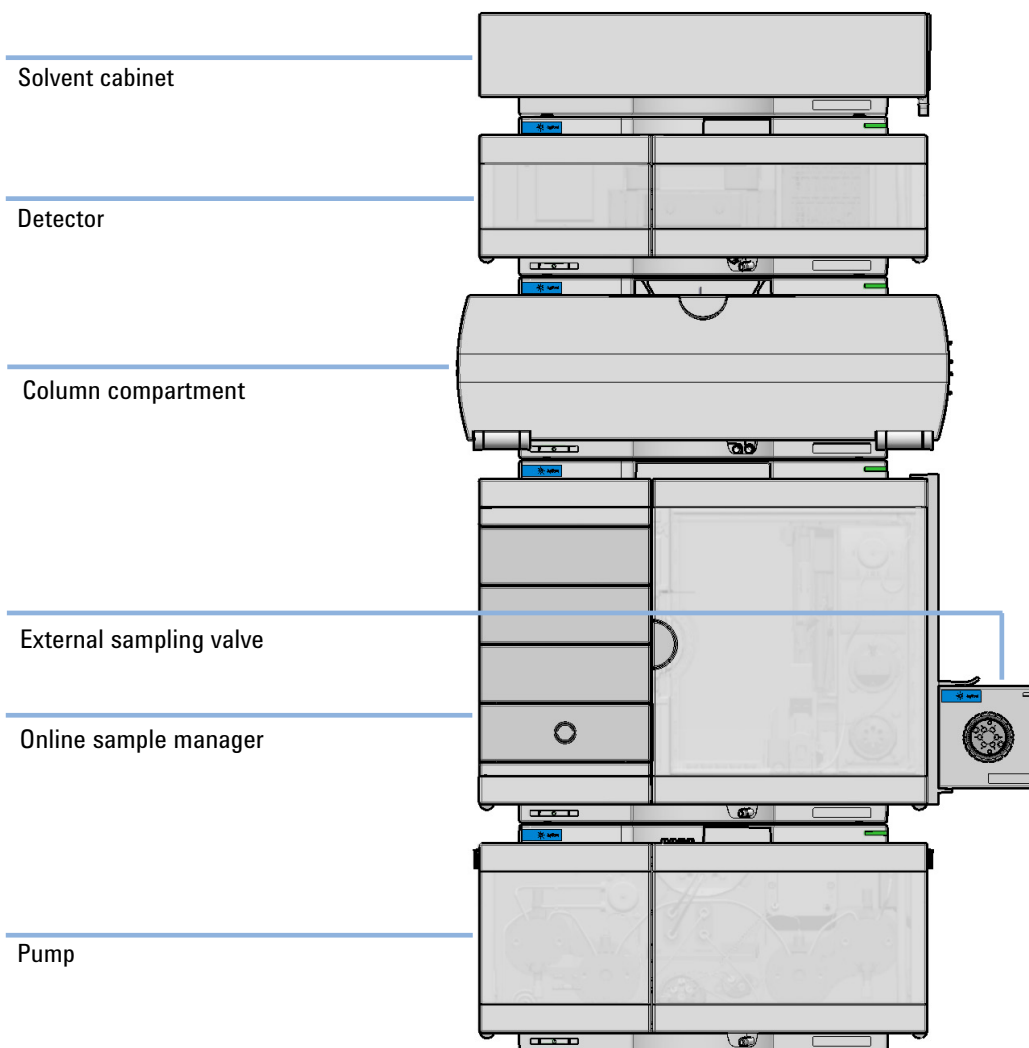


Figure 3 1260 Infinity II Prime Online LC System (Single Stack)

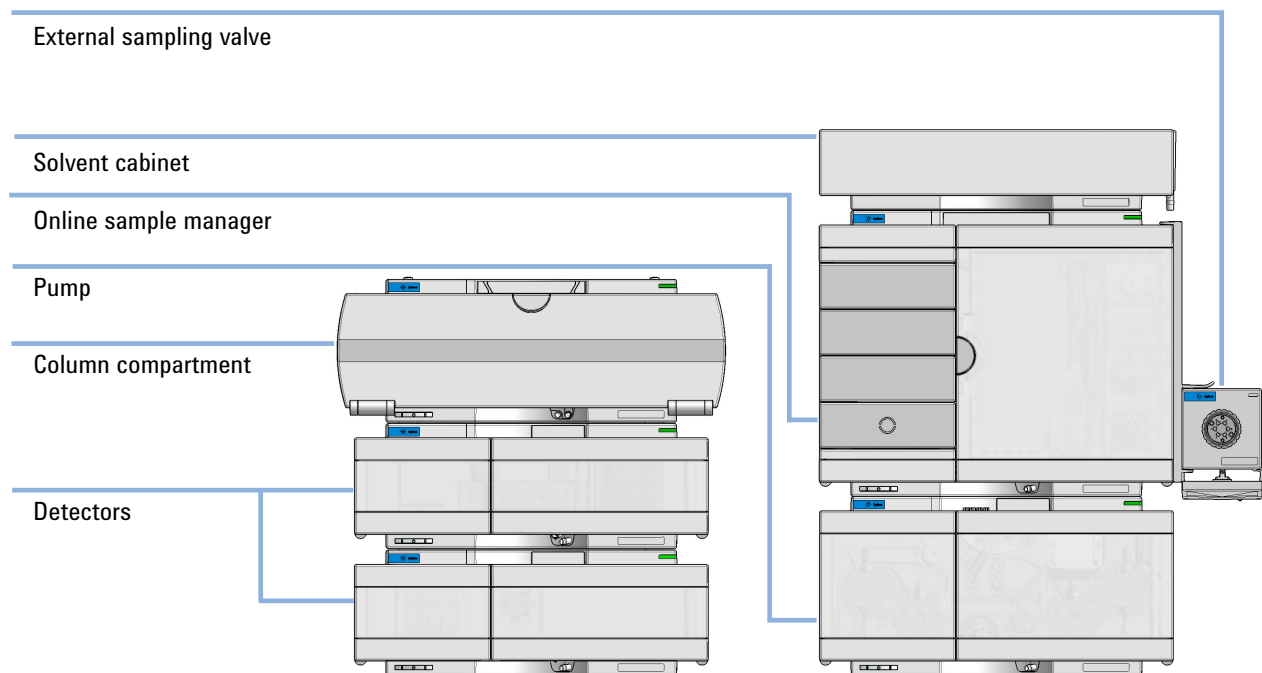


Figure 4 1260 Infinity II Prime Online LC System (Two Stack)

Sample Thermostat (G7167-60101)

If the 1260 Infinity II Online Sample Manager is equipped with the Sample Thermostat, isobutane (R600a) is used as refrigerant, which is environmentally friendly but flammable. Therefore, make special considerations for the safe operation of the device:

- Keep open fire or sources of ignition away from the device.
- Ensure a room size of 1 m³ for every 8 g of R600a refrigerant inside the Sample Thermostat (total refrigerant loading is 30 g).
- Ensure adequate ventilation: typical air exchange of 25 m³/h per m² of laboratory floor area.
- Do not use mechanical devices or other means to accelerate the defrosting process.
- Keep the ventilation openings on the housing clear of any obstruction or blockage.

Waste Liquid Management

- 1 Mount the provided safe leak and waste handling adapter on the 1260 Infinity II Online Sample Manager.
- 2 Mount the provided safe leak and waste handling accessories for the External Valve Drive.

NOTE

Consider special precautions for leak and waste handling measures if hazardous or toxic samples are collected by the Online Sample Manager.

NOTE


If the Online Sample Manager is equipped with the Sample Thermostat, a separate waste container is required for the condensate.

Sample Delivery Equipment Connection

If the customer uses own sample delivery equipment synchronized and integrated into the InfinityLab Online LC Solution setup, the following minimal requirements are needed:

- ❑ Electronic interface
 - Type of interface: ERI or APG
 - Socket signal details:

ERI pins layout	pin	Color code	Enhanced Remote	Classic Remote	Active (TTL)
	1	white	IO1	START REQUEST	Low
	2	brown	IO2	STOP	Low
	3	green	IO3	READY	High
	4	yellow	IO4	POWER ON	High
	5	grey	IO5	NOT USED	
	6	pink	IO6	SHUT DOWN	Low
	7	blue	IO7	START	Low
	8	red	IO8	PREPARE	Low
	9	black	1wire DATA		
	10	violet	DGND		
	11	grey-pink	+5V ERI out		
	12	red-blue	PGND		
	13	white-green	PGND		
	14	brown-green	+24V ERI out		
	15	white-yellow	+24V ERI out		
NC	yellow-brown				

APG pins layout	Signal	Pin (APG)	Active (TTL)
	GND	1	
	Start Request	9	Low
	Stop	8	Low
	Ready	7	High
	Power on	6	High
	Future	5	
	Shut Down	4	Low
	Start	3	Low
	Prepare	2	Low
	Cable Shielding	NC	

Agilent equipment have an Enhanced Remote Interface (ERI) socket (female) on the backside of the modules. One of the following cables can be required as an extra (depending on compatibility with the customers sample delivery equipment):

- p/n 5188-8029: ERI to general purpose (D_Sub 15 pin male - Agilent side, open end wires - customer side).
- p/n 5188-8044: ERI to ERI (D_Sub 15 pin male - Agilent side, D_Sub 15 pin male - customer side).
 - p/n 5188-8059: ERI - Extension cable (1.2 m D_Sub 15 pin female - male), if necessary.
- p/n 5188-8045: ERI to APG (D_Sub 15 pin male - Agilent side, D_sub 9 pin male - customer side).

❑ Sample delivery lines

Fittings:

- Type: Swagelok 1/16" OD:

Female on Agilent Sampling Valve.

Male on the external tubing/capillary from Sampling Point/Sample delivery Equipment.

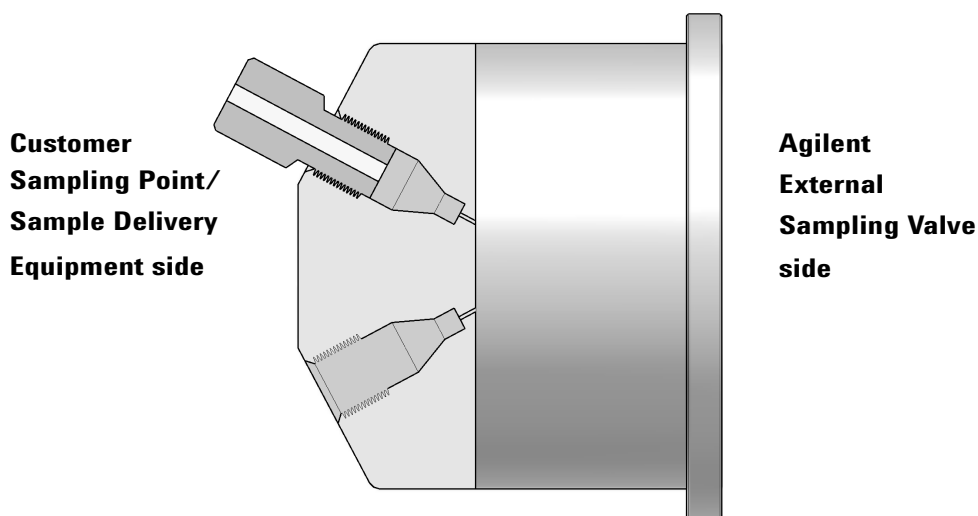


Figure 5 Example of Sample Line Connection in Valve Port (Cross section)

Tubing/Capillaries:

- Material: nonconductive, selected by customer considering chemical resistance and compatibility with the collected sample.
- Inner diameter: 0.5 mm or above.
- Outside diameter: 1/16" (1.5875 mm).

Requirements for Sample to be collected online

Sampling stream property	Limit	Comment
Pressure	<200 bar	
Flowrate	<5 mL/min	
Ignition Temperature	Min 200 °C	
Boiling Point (BP)	Min 56 °C	
Temperature	Max 20 °C below BP	
Viscosity	0.2 – 10 cP	
Particle size	<0.22 µm	Without sedimentation
Solid residue	No	
Dissolved gases	No	
pH	1 – 12.5	Strong acid solution not below pH 2.3

Software

Specifications for Online LC Monitoring Software Workstations

- ❑ The Agilent Online LC Monitoring Software - Workstation Topology - relies on an OpenLab CDS v2.6, or higher, Workstation Plus installation.

Therefore, minimal software specifications are applicable:

Table 1 Software Requirements

Specification Description	Details
Operating system name, version	Windows 10, Enterprise or Professional, 64-bit
O/S .NET and other add-ons	.NET 3.5 SP1 (must be enabled on Windows 10) and .NET 4.x (installed by OpenLab CDS v2.6 Installer)
Web browser	Internet Explorer 11 Google Chrome 40, or higher Edge
Antivirus Software	Symantec Endpoint Protection Trend Micro Microsoft Security Essentials McAfee
Account settings/privileges	Domain user with local administrator privilege required for installation and configuration

Computer Hardware Specifications for Online LC Monitoring Software Workstations

- ❑ The Agilent Online LC Monitoring Software - Workstation Topology - relies on an OpenLab CDS v2.6, or higher, Workstation Plus installation.

Therefore, minimal hardware specifications are applicable:

Table 2 PC Workstation Hardware Requirements

Specification Description	Workstation Plus
Processor type and speed	Intel® i5, i7, or Xeon E3 or equivalent 3.0 GHz or greater 4 Core
Memory	Ensure that at least 4 GB is reserved for the Windows operating system.
USB Port	USB 2 required for installation via provided media
Video devices	Graphic resolution: 1600 x 900 minimum 1920 x 1080 recommended

Network Specifications

- ❑ The Agilent Online LC Monitoring Software - Workstation Topology - relies on an OpenLab CDS v2.6, or higher, Workstation Plus installation.

Therefore, minimal network specifications are applicable:

Table 3 Network Requirements

Specification Description	Supported
Network type, bandwidth, speed, protocol etc.	Internet Protocol Version 4 (TCP/IPv4) only Internet Protocol Version 6 (TCP/IPv6) is not supported
IP Address	Static or DHCP Reservation
Additional network or instrument devices/cards requirements	100 MB / 1 GB LAN for instrument control 2nd LAN card required for house, to isolate the instrument's data traffic from the lab intranet connection

Special Software Requirements

- If the customer uses a Firewall other than the Windows Firewall, ensure that all required ports can be used by the Online LC Monitoring Software.
- To check for specific requirements for the OpenLab CDS v2.x Workstation, see the corresponding site preparation checklist.