Agilent Technologies

Agilent 6400 Series Triple Quad LC/MS Site Preparation Checklist

Thank you for purchasing an Agilent solution. To get you started and to assure a successful and timely installation of your Agilent software, 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 computing requirements for your site. It may also recommend tools where needed, that will help you get started.

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

Customer Responsibilities

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

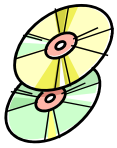
- ☐ the **computing environment** and the **necessary space** is made available,
- ☐ the **number & location of electrical outlets** for your instruments, computer systems, and peripherals are planned
- ☐ that your site **meets the software, hardware and networking specifications** below
- ☐ **locate your sales order information, software authorization codes and/or software licenses/certificates**
- ☐ the necessary **software media, disks etc are available** including upgrade/update disks
- ☐ that a **suitable backup solution** is identified for your software
- ☐ **availability of a system/network administrator** as needed to connect to your intranet
- ☐ please consult **Other/Special Requirements** section below for other product-specific information
- ☐ **If Agilent is delivering installation and familiarization services, users of the system should be present throughout these services; otherwise, they will miss important operational, maintenance and safety information.**
- ☐ **Complete Final Check: Software Site Preparation Tool**
  Please visit the following Agilent website to download the Software Installation Site Preparation Tool.
  http://www.chem.agilent.com/en-US/Support/Downloads/Utilities/SWSitePrepTool/Pages/Default.aspx
  (This easy-to-use tool once installed, can analyze and help verify that your PC meets the necessary hardware and software pre-requisites before installing the Agilent software).
- ☐ the **proper pressure, capacity, and purity of nitrogen gases** for instruments and peripherals are planned
- ☐ the **adequate exhaust ventilation** for instruments and peripherals are planned
- ☐ the **necessary customer supplied chemicals** for instruments and peripherals are provided

Important Customer Information

1. If you have questions or problems in providing anything described as a *Customer Responsibilities* above, please contact your local Agilent or partner support/service organization for assistance prior to delivery. In addition, Agilent and/or it's partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.

2. Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-arrange any services that have been purchased.

3. Other optional services such as additional training, operational qualification (OQ) and consultation for user-specific applications may also be provided at the time of installation when ordered with the system, but should be contracted separately.

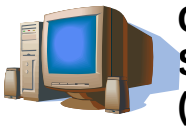


Software Specifications (Workstations/Clients/Servers)

Special Notes:

1. All 6400 Series Triple Quad LC/MS are bundled with software preloaded on workstations. Below are just references.

Specification Description	Minimum	Recommended (if applicable)	Comments (if applicable)
Operating system type(s), versions	MS Windows XP SP2	MS Windows XP SP3	
O/S .NET & other add-ons			
Language settings/compatibility	English		
Regional settings/compatibility			
Account settings/privileges			
Specific drivers	C:\ Primary Logical, D:\ Data Extended		



Computer Hardware Specifications (Workstations/Clients/Servers)

Special Notes:

1. All 6400 Series Triple Quad LC/MS are bundled with software preloaded on workstations. Below are just references.

Specification Description	Minimum	Recommended (if applicable)	Comments (if applicable)
Processor type & speed	**4.3 GHz (single core), 1.8 GHz (dual core)**	**3.2 GHz (dual core)**	
Memory	**1 GB**	**4 GB**	
Internal Storage/devices/media	**20 GB HDD Space**		
External Storage/devices/media			
Video devices			
Audio devices			
Printing devices			
Pointing devices			

Networking Specifications

Special Notes:
1. N/A

Specification Description	Minimum	Recommended (if applicable)	Comments (if applicable)
Network type, bandwidth, speed, protocol etc			
Additional network or instrument devices/cards requirements			

Product Dimensions

Special Notes:
1. At least 30 cm (1 ft) to the left (inlet end) and right of the instrument must be added to these dimensions to provide adequate instrument access and ventilation. The supporting surface must be relatively vibration free and capable of supporting the combined weight of the Triple Quad system
2. Size and weight of the LC system depends on the number and type of modules included. Most Agilent 1100/1200 Series LC modules are approximately 35 cm (14 in) wide and 45 cm (18 in) deep.
3. Size and weight of the Data system depends on the components included. Reserve at least 100 cm (39 in) of bench space for the data system. A typical data system weight is 23 kg (50 lb).

Product	Height, cm (in)	Width, cm (in)	Depth, cm (in)	Weight , kg (lb)
6410 Triple Quad LC/MS dimensions	47 (18.5)	111 (43.5)	66 (26)	107.5 (236.5)
6430 Triple Quad LC/MS dimensions	47 (18.5)	111 (43.5)	66 (26)	115 (255)
6460 Triple Quad LC/MS dimensions	48 (18.8)	111 (43.5)	66 (26)	115 (255)
6490 Triple Quad LC/MS dimensions	47 (18.5)	84 (33)	76 (30)	115 (255)
MS40+ Foreline pump	22.8 (9.0)	29.7(11.7)	41.8 (16.5)	33.0 (72.7)
E2M28 Foreline pump	28 (11)	18 (7.1)	58.3 (23.0)	40.0 (88.2)
XDS35i Scroll pump	39 (15.3)	29 (11.4)	47.6 (18.7)	48.0 (106)
G1948B ESI source4	17 (6.8)	18 (7.1)	9.5 (3.7)	1.7 (3.8)
G1947B APCI source4	23 (9.2)	18 (7.1)	13.0 (5.1)	1.7 (3.8)
G1978B Multimode Source3	17 (6.8)	18 (7.1)	13.0 (5.1)	2.29 (5.05)

Voltage and Power Requirements

Special Notes:

1. Excessive fluctuations in the voltage of the power supply can create a shock hazard and can damage the instrument. This equipment must be installed in a Category II environment as defined in IEC 60664.
2. The foreline pump is supplied for the standard voltage in the country where the order originates. The Agilent G1978B Multimode source and the Agilent G1948B APCI source draw their power from the Triple Quad instrument and do not require separate line voltage.

Product	Line voltage	Maximum continuous AC power	Supply circuit rating	No. of outlets
6410 Triple Quad LC/MS system (U.S. & Japan)	200 to 210 Vac2 50/60 Hz	2500 VA	15 A	1
6410 Triple Quad LC/MS system (Europe)	220 to 240 Vac2 50/60 Hz	2500 VA	15 A	1
6430 Triple Quad LC/MS system (U.S. & Japan)	200 to 210 Vac2 50/60 Hz	2700 VA	15 A	1
6430 Triple Quad LC/MS system (Europe)	220 to 240 Vac2 50/60 Hz	2700 VA	15 A	1
6460 Triple Quad LC/MS system (U.S. & Japan)	200 to 210 Vac2 50/60 Hz	2850 VA	15 A	1
6460 Triple Quad LC/MS system (Europe)	220 to 240 Vac2 50/60 Hz	2850 VA	15 A	1
6490 Triple Quad LC/MS system (U.S. & Japan)	200 to 210 Vac2 50/60 Hz	2850 VA	15 A	2
6490 Triple Quad LC/MS system (Europe)	220 to 240 Vac2 50/60 Hz	2850 VA	15 A	2
1200 Series LC	100-120 or 220-240 Vac, 50/60 Hz	800-1200 VA	15 A	4 to 6
6400 Series Triple Quad LC/MS Data System	100-120 or 220-240 Vac, 50/60 Hz	1000 VA	15 A	4 to 6

Environmental Conditions

Special Notes:

1. Environmental control systems must maintain these temperatures ((< +/-3°C from calibration temperature) and humidity ranges.
2. The 6410 Triple Quad LC/MS dissipates up to 1,100 Watts (3,700 BTU/hr). Approximately 600 Watts (2,047 BTU/hr) are removed with the source exhaust. The LC and data system also contribute significantly to the cooling load. The exact amounts will depend on their configurations. In comparison, the 6490 Triple Quad LC/MS dissipates up to 1318 Watts (4,500 BTU/hr). Approximately 600 Watts (2,047 BTU/hr) are removed with the source exhaust

Environmental Conditions
Equipment class: Class 1 Laboratory Equipment
Pollution: Degree 2
Installation: Category II
Environment: Indoor Use
Altitude: Not to exceed 3,300 m up to 35°C, not to exceed 3,700 m up to 30°C
Electrical Supply:
200 to 210 Vac, 50/60 Hz (configuration for U.S. & Japan)
220 to 240 Vac, 50/60 Hz (configuration for Europe)
Mains supply voltage: Fluctuations not to exceed 10% of nominal supply voltage
Operating Temperature: 15 to 35°C (59 to 95°F)
Humidity: < 85% RH at 35°C

Nitrogen Gas Requirements

Collision Cell Gas Requirements

Source	Purity	Gas Pressure	Flow
High pressure bottled Nitrogen	99.999% pure or better and hydrocarbon free[1]	1 to 2 bar (15 to 30 psi)	Up to 0.001 liters/minute (0.06 liter/hour)

Drying Gas Requirements
Special Notes:

1. Use only nitrogen for the drying, sheath and nebulizing gas. Use of air, oxygen, or other gases when combined with volatile solvents and high voltages in the spray chamber, could result in an explosion. Use of air, oxygen, or other gases may also cause deterioration of parts in the 6400 Series Triple Quad LC/MS and have a negative effect on instrument operation and sensitivity.

Model	Source	Purity	Gas Pressure	Flow
6410, 6430	Dewar or Liquid bottled Nitrogen	99.5% pure[1] or better and hydrocarbon free[2]	5.5 to 6.8 bar (80 to 100 psi)[3]	Up to 18 liters/minute[4] (1080 liters/hour)
6460	Dewar or Liquid bottled Nitrogen	99.5% pure[1] or better and hydrocarbon free[2]	5.5 to 6.8 bar (80 to 100 psi)[3]	Up to 30 liters/minute[4] (1800 liters/hour)
6490	Dewar or Liquid bottled Nitrogen	99.5% pure[1] or better and hydrocarbon free[2]	5.5 to 6.8 bar (80 to 100 psi)[3]	Up to 50 liters/minute[5] (3000 liters/hour)
6410, 6430	Nitrogen generator or liquid nitrogen	95.0% pure3 or better and hydrocarbon free2	5.5 to 6.8 bar (80 to 100 psi)3	Up to 18 liters/minute4 (1080 liters/hour)
6460	Nitrogen generator or liquid nitrogen	95.0% pure3 or better and hydrocarbon free2	5.5 to 6.8 bar (80 to 100 psi)3	Up to 30 liters/minute4 (1800 liters/hour)
6490	Nitrogen generator or liquid nitrogen	95.0% pure3 or better and hydrocarbon free2	5.5 to 6.8 bar (80 to 100 psi)3	Up to 50 liters/minute5 (3000 liters/hour)

[1] With the remaining gas being oxygen.

[2] Less than 0.1 parts per million of hydrocarbons with the remaining gas being oxygen and trace argon.

[3] Gas Pressure is at the instrument inlet and not just at the supply side.

[4] At least 3 liters/minute is required at all times to prevent air from entering the instrument

[5] At least 9 liters/minute is required at all times to prevent air from entering the instrument.

Laboratory Supplies

Special Notes:

1. Routine operation of the 6400 Series Triple Quad LC/MS requires the following Operating Supplies.

Operating Supplies
Acetonitrile, pesticide residue analysis (PRA) grade or better
Methanol, PRA grade or better
Water, Nanopure/HPLC grade or better
Ammonium formate, 97% purity or better
Acetic acid, 99.7% minimum purity
Formic acid, 95% minimum purity

Special Notes:

1. At installation, the 6490 Triple Quad LC/MS requires the following supplies

Operating Supplies
Water, Nanopure/HPLC grade or better
Nitric acid, 65% purity
Aqueous ammonia solution, 25% (v/v)
Formic acid, 90% purity or better
pH paper sticks with pH range from 4.5 – 10

a) Important web links
   a. Microsoft Hardware Compatibility Lists
      http://www.microsoft.com/whdc/hcl/default.mspx
   b. Links to specific O/S fixes, updates needed
      http://support.microsoft.com/

