

Agilent 6400 Series LC/TQ

Site Preparation Checklist

Thank you for purchasing an Agilent 6400 LC/TQ. 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.
- For more details, please consult the product-specific site preparation or pre-installation manual.

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>

Site Preparation

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.

- 1 Special notes
- 2 The LC/TQ dimensions represent the maximum instrument dimensions with Agilent Jet Stream mounted*.
- 3 At least 30 cm (1 ft.) to the left (source end) and right of the instrument must be added to the dimensions to provide adequate instrument access and ventilation.
- 4 The supporting surface must be relatively vibration free and capable of supporting the combined weight of the Triple Quad system.
- 5 During service work sufficient clearance around instrument is required. At least 1 m /3.3' in height and 45 cm/1.5' on source side(left)

| Instrument Description | Weight | | Height | | Depth | | Width | |
|------------------------|--------|-----|--------|------|-------|------|-------|------|
| | Kg | lbs | cm | in | cm | in | cm | in |
| G6470A LC/TQ | 117 | 258 | 47.5 | 18.7 | 77.3 | 30.4 | 84 | 33 |
| G6495C LC/TQ | 123 | 271 | 47.5 | 18.7 | 77.3 | 30.4 | 91.5 | 36 |
| MS40+ Foreline Pump | 33 | 73 | 22.8 | 9.0 | 41.8 | 16.5 | 29.7 | 11.7 |
| MS120 Foreline Pump | 100 | 220 | 53.9 | 21.2 | 75 | 29.5 | 51.6 | 20.3 |
| Agilent Jet Stream | 1.7 | 3.8 | 23 | 9.2 | 11.5 | 4.5 | 18 | 7.1 |
| APCI Source | 1.7 | 3.7 | 23 | 9.2 | 13 | 5.1 | 18 | 7.1 |
| APPI Source | 1.7 | 3.7 | 23 | 9.2 | 13 | 5.1 | 18 | 7.1 |
| MMI Source | 2.29 | 5.1 | 23 | 9.2 | 13 | 5.1 | 18 | 7.1 |
| ESI Source | 1.7 | 3.7 | 23 | 9.2 | 13 | 5.1 | 18 | 7.1 |
| NSI Source | 1.7 | 3.7 | 23 | 9.2 | 13 | 5.1 | 18 | 7.1 |

* Mounting different source will not affect dimensions

Environmental Conditions

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

Special notes

- 1 Performance can be affected by sources of heat and cold, e.g., direct sunlight, heating/cooling from air conditioning outlets, drafts, and/or vibrations.
- 2 The laboratory's ambient temperature conditions must be stable for optimum performance.
- 3 The Agilent 6400 Series LC/TQ is specified for operation under the following conditions:
 - a. Indoor use.
 - b. Constant temperature (< +/-3°C from calibration temperature).
 - c. Non-condensing, non-corrosive atmosphere.
- 4 Altitude: Not to exceed 3,300 m up to 35°C, not to exceed 3,700 m up to 30°C.

| Instrument Description | Operating Temperature Range °C (F) | Operating Humidity Range % | Heat Dissipation BTU |
|------------------------|------------------------------------|----------------------------|----------------------|
| G6470A LC/TQ | 15 - 35 °C (59 - 95 °F) | < 85% RH @ 35 °C | < 4500 BTU/hr |
| G6495C LC/TQ | 15 - 35 °C (59 - 95 °F) | < 85% RH @ 35 °C | < 5850 BTU/hr |

Power Consumption

Special notes

- 1 If a computer system is supplied with your instrument, be sure to account for those electrical outlets.
- 2 The LC/TQ electrical outlets must have an isolated, noise-free electrical ground that is connected to the main earth ground for the facility. Noise-free typically mean Total Harmonic Distortion (THD) more than 3% is not acceptable
- 3 Mains supply voltage tolerances must be between +10% and -5% of nominal line voltage.
- 4 Electrical power for the 6400 Series Triple Quad LC/MS may be delivered in either single-phase or 208- Wye configuration:

| Configuration | Measurement | Nominal Voltage |
|---------------------|--------------|-----------------|
| Single Phase or Wye | Line to Line | 200 - 240 VAC |

| Instrument Description | Line Voltage and Frequency V, Hz | Maximum Power Consumption VA | Number of required Outlets. | Maximum Power Consumption W |
|------------------------|----------------------------------|------------------------------|-----------------------------|-----------------------------|
| G6470A LC/TQ | 200-240 VAC @ 50/60 Hz | 15 A | 2 | 2000 |
| G6495C LC/TQ | 200-240 VAC @ 50/60 Hz | 15 A | 2 | 2600 |

NOTE: the chassis ground still must be connected to earth ground for safety compliance, no matter the voltage source.

For example, installing a UPS that creates a floating ground is unacceptable – the earth/chassis ground must not be interrupted!

Required Operating Supplies by Customer for Installation

Main Nitrogen Gas Supply Requirements

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 Impurities from LN2 Dewar being oxygen only.
- 3 "Hydrocarbon free" means < 0.1 PPM hydrocarbons with the remaining gas being oxygen and trace argon.
- 4 Nitrogen Pressure as measured at the LC/MS inlet (not the supply side).
- 5 Minimum Nitrogen Flow is required at all times to prevent air from entering the instrument.
- 6 Main Nitrogen Supply fittings are 1/4" Swagelok.

| Model | Nitrogen Source | Nitrogen Purity | Pressure | Flow |
|--------------|-----------------|------------------------------|------------------------------|-----------------------|
| G6470A LC/TQ | LN2 Dewar | ≥ 99.5% and hydrocarbon free | 5.5 - 6.8 bar (80 - 100 PSI) | ≥ 30 L/min Maximum |
| | N2 Generator | ≥ 95.0% and hydrocarbon free | | > 3 L/min Minimum |

| Model | Nitrogen Source | Nitrogen Purity | Pressure | Flow |
|-----------------|-----------------|------------------------------------|---------------------------------|--|
| G6495C LC/TQ | LN2 Dewar | ≥ 99.5% and hydrocarbon free | 5.5 - 6.8 bar (80 - 100 PSI) | ≥ 50 L/min Maximum (≥ 3000 L/hour) |
| | N2 Generator | ≥ 95.0% and hydrocarbon free | | > 9 L/min Minimum |

Collision Cell Nitrogen Gas Supply Requirements

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 Nitrogen is the only supported Collision Cell gas.
- 3 Splitting the Main Nitrogen Gas supply for use with the collision cell is not supported due to nitrogen purity requirements.
- 4 Collision Cell gas supply fittings are 1/8" Swagelok.

| Model | Nitrogen Source | Nitrogen Purity | Pressure | Flow |
|--------------|---------------------------|--|----------------------------|----------------------------------|
| G6470A LC/TQ | High Pressure Cylinder | ≥ 99.999% and hydrocarbon free (< 0.1 PPM hydrocarbons) | 1 - 2 bar (15 - 30 PSI) | ≥ 0.001 L/min (≥ 0.06 L/hour) |
| G6495C LC/TQ | High Pressure Cylinder | ≥ 99.999% and hydrocarbon free (< 0.1 PPM hydrocarbons) | 1 - 2 bar (15 - 30 PSI) | ≥ 0.001 L/min (≥ 0.06 L/hour) |

Exhaust Venting

The LC/MS generates exhaust fumes from the foreline pump(s) and drain bottle (from the spray chamber) that must be properly vented for supported instrument operation and compliance with laboratory safety requirements.

Special Notes

- 1 Exhaust must be vented according to local Environmental Health and Safety regulations.

- 2 Exhaust gases contain traces of solvent, sample and hydrocarbon pump fluid.
- 3 Venting Rate is commensurate with Nitrogen consumption rate.
- 4 Two independent, negative pressure vents must be available with one for each of the exhaust sources: foreline pump(s) and Spray Chamber. If only 1 vent is available, the exhaust line(s) from the foreline pump(s) required must extend beyond the exhaust line from the spray chamber.
- 5 If a negative pressure vent is not available, the length of the tubing from the foreline pump(s) and the drain bottle to the vent should each not exceed 460 cm (15 ft).
- 6 Exhaust tubing is 1/2" interior diameter (I.D.).
- 7 Failure to vent the foreline pump and spray chamber separately will void the warranty for the 6400 Series LC/TQ. Agilent service representatives will not install an Agilent 6400 Series LC/TQ until an adequate exhaust system is present and functioning.

| Model | Combined Exhaust Venting Rate (Continuous) |
|--------------|--|
| G6470A LC/TQ | ≥ 30 L/min Maximum (≥ 1800 L/hour) > 3 L/min Minimum |
| G6495C LC/TQ | ≥ 50 L/min Maximum (≥ 3000 L/hour) > 9 L/min Minimum |