Varian 900-LC Series Liquid Chromatograph

Pre-installation Manual

Installation Category II
Pollution Degree 2
Safety Class 1 (EN 61010-1)

NOTICE: This document contains references to Varian. Please note that Varian, Inc. is now part of Agilent Technologies. For more information, go to **www.agilent.com/chem.**

Agilent Technologies

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Varian Australia is ISO9001:2000 certified.

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Safety Practices and Hazards

Your Varian instrument and accessories have been carefully designed so that when used properly, you have an accurate, fast, flexible and safe analytical system.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Information about safety practices appears throughout the documentation (both hard copy and online) provided with your instrument and accessories. Before using the instrument or accessories, you must thoroughly read these safety practices.

Observe all relevant safety practices at all times.

General

Operation of a Varian 900-LC Series Liquid Chromatograph involves the use of high pressure liquids, UV light, compressed gas cylinders and hazardous materials including corrosive fluids and flammable liquids. Careless, improper or unskilled use of this liquid chromatograph can cause death or serious injury to personnel, and/or severe damage to equipment and property.

The liquid chromatograph incorporates interlocks and covers that are designed to prevent inadvertent contact with any potential hazards. If the instrument is used in any manner not specified by Varian, this protection may be impaired. It is good practice to develop safe working habits that do not depend upon the correct operation of the interlocks for safe operation. It is essential that no interlock or cover is bypassed, damaged or removed.

The safety practices described below are provided to help the user operate the instrument safely. Read each safety topic thoroughly before attempting to operate the instrument and ALWAYS operate the liquid chromatograph in accordance with these safety practices.

Electrical Hazards

Exposure to high voltages and UV energy can cause severe skin damage and cataracts of the eyes, while close contact with the electrical components can result in severe heat burns to the skin, and an electrical discharge which may cause death, severe electric shock or sub-surface skin burns.

The liquid chromatograph has been carefully designed to operate safely and effectively when using components that conform to Varian's design criteria. Use of non-approved components may render the system inoperative and/or hazardous. It may also invalidate the warranty on the instrument. Use only related components supplied or authorized by Varian.

- Disconnect the instrument from all power sources before removing protective panels to avoid exposure to potentially dangerous voltages. Panels or covers which are retained by screws may be opened ONLY by Varian-qualified Customer Service Representatives. Consult the manuals or product labels supplied with your PC to determine which parts are operator-accessible.
- When it is necessary to use a non-original power cord plug, make sure the replacement cord adheres to the color coding and polarity described in the manual and all local building safety codes.
- Good grounding/earthing is essential to avoid a potentially serious electric shock hazard. Ensure that there is a 3 pin earth-grounded receptacle. Consult the manuals or product labels supplied with your PC for the relevant grounding requirements.
- Replace blown fuses with fuses of the size and rating shown on the fuse panel or in the manual.
- Replace faulty or frayed power cords immediately with the same type and rating.
- Make sure that voltage sources and line voltage match the value for which the instrument is wired.
- Avoid using power supplies from a source that may be subject to electrical or RF interface from other services (for example, large electrical motors, elevators and welders).

Compressed Gas Cylinders

Unless your system is equipped with a helium sparging unit, there are no gas requirements for the Varian 900-LC Series systems. For gas requirements on these other devices, consult the operation manual or other documentation enclosed with the particular device. Compressed gas cylinders contain highly pressurized gas. If storage conditions are outside of the recommended suppliers safety codes the cylinders can explode or rapidly release gas into the environment. This may result in injury or death.

- Store and handle compressed gases carefully and in strict adherence to safety codes.
- Secure cylinders to an immovable structure or wall.
- Store and move cylinders in an upright, vertical position. Before transport, remove regulators and install cylinder cap.
- Store cylinders in a well ventilated area away from heat, direct sunshine, freezing temperatures, and ignition sources.
- Mark cylinders clearly so there is no doubt as to their contents.
- Use only approved regulators and connections.
- Use only connector tubing that is chromatographically clean (Varian part number 0391832600) and has a pressure rating significantly greater than the highest outlet pressure from the regulator.

High Pressure Hazards

If a line ruptures, a relief device opens, or a valve opens accidentally under pressure, potentially hazardous high liquid pressures can be generated by the pump causing a high velocity stream of volatile and/or toxic liquids.

- Wear face protection in accordance with local safety regulations when you inject samples or perform routine maintenance.
- Never open a solvent line or valve under pressure. Stop the pump first and let the pressure drop to zero.
- Use shatter-proof reservoirs capable of operating at 50/60 psi.
- Read and adhere to all NOTES, CAUTIONS, and WARNINGS in the manual.

Ultraviolet Radiation

Liquid chromatographs that use an ultraviolet light source have shielding to prevent radiation exposure to personnel.

For continued protection:

- Ensure that protective lamp covers of detectors are in place during operation.
- Do not look directly into detector fluid cells or at the UV light source. When inspecting the light source or fluid cell, always use protective eye covering such as borosilicate glass or polystyrene.
- Ozone can be generated by radiation from the source lamps. Exposure to ozone can result in severe irritation to the skin, eyes, and upper respiratory system. The maximum permissible exposure level is 0.1 ppm (0.2 mg/m^3). ALWAYS ventilate the area surrounding the instrument such that the concentration of ozone does not exceed the maximum permissible level. All venting must be to outside air, never within the building.

Other Precautions

Use of the liquid chromatograph and accessories may involve materials, solvents and solutions which are flammable, corrosive, toxic or otherwise hazardous. Careless, improper or unskilled use of such materials, solvents and solutions can create explosion hazards, fire hazards, toxicity and other hazards that can result in death, serious personal injury or damage to equipment.

Always ensure that laboratory safety practices governing the use, handling and disposal of hazardous materials are strictly observed. These safety practices should include wearing appropriate safety clothing and safety glasses.

Air flow to the cooling fans of the liquid chromatograph and accessories must be unobstructed. Do not block the ventilation grills on the liquid chromatograph and accessories. Consult the manuals supplied with your PC, monitor and for their specific ventilation requirements.

Great care should be taken when working with glass or quartz parts to prevent breakage and cuts. This is especially important when removing or replacing lamps.

The liquid chromatograph weighs approximately 140 kg (309 lb). To avoid injury to personnel or damage to the instrument or property, always use a forklift or other suitable mechanical lifting device to move the instrument. Use only Varian-supplied spares with your instrument.

Warning and Caution Messages

A Warning message is used in the text when failure to observe instructions or precautions could result in death or injury. The list of symbols that appear in conjunction with warnings are detailed in the next section.

A Caution message is used when failure to observe instructions could result in damage to equipment (Varian supplied and/or other associated equipment).

The following symbols may appear on the instrument for your information.

Warning Symbols

The following is a list of symbols that appear in conjunction with warnings in this manual or on the liquid chromatograph. The hazard they describe is also shown.

A triangular symbol indicates a warning. The meanings of the symbols that may appear alongside warnings in the documentation or on the instrument itself are as follows:

I	Mains power on
O	Mains power off
	Fuse
	Single phase alternating current
	Direct current
CE	When attached to the rear of the instrument, indicates that the product complies with the requirements of one or more EU directives.

	When attached to the rear of the product, indicates that the product has been certified (evaluated) to CSA 1010.1 and UL 3101-1.
Xe	Indicates high voltage xenon flash lamp present.

Broken glass

Corrosive liquid

Electrical shock

Fire hazard

Noxious gas

Heavy weight (danger to hands)

Moving parts

Toxic hazard

UV radiation/ Eye hazard

RF radiation

Heavy weight (danger to feet)

Explosion hazard

The symbols above may be used on warning labels attached to the instrument. When you see these symbols, refer to the relevant operation or service manual for the correct procedure referred to by that warning label.

US FCC Advisory Statement

This equipment generates, uses and can radiate radio frequency energy, and if not installed and operated in accordance with the instruction manual may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of Federal Communications Commission (FCC) Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area may cause interference, in which case the user will be required to take whatever measures may be necessary to correct the interference at his or her expense.

Spurious and Harmonic Radiation Compliance

Your Varian 900-LC Series Liquid Chromatograph complies with the requirements of FCC rules and Regulations part 18, subpart H—Miscellaneous Equipment, at the date of manufacture.

CE Compliance

Your Varian 900-LC Series Liquid Chromatograph has been designed to comply with the requirements of the Electromagnetic Compatibility (EMC) Directive and the Low Voltage (electrical safety) Directive (commonly referred to as the LVD) of the European Union. Varian has confirmed that each product complies with the relevant Directives by testing a prototype against the prescribed EN (European Norm) standards.

Proof that a product complies with these directives is indicated by:

- the CE Marking appearing on the rear of the product, and
- the documentation package that accompanies the product containing a copy of the Declaration of Conformity. The Declaration of Conformity is the legal declaration by Varian that the product complies with the directives listed above, and shows the EN standards to which the product was tested to demonstrate compliance. It is also signed by Varian's Authorized Representative in the EU, and by the representative of the manufacturing plant.

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1. Introduction

This publication contains the information required to successfully prepare a site for a Varian 900-LC Series Liquid Chromatograph installation.

On completion of the site preparation, fill in the check-list in Section 1.2 and send this pre-installation check-list to your local Varian agent or Varian sales and service office. As soon as it is received, Varian or your Varian agent will contact you to arrange a convenient time for installation.

If you have difficulty in preparing for the installation, and for details of operator training courses, please contact your Varian sales or customer support representative at the address given below:

Attach Varian office card here.

1.1 Installation Guidelines

Allow a minimum of 1 day for the installation of the Varian 900-LC Series Liquid Chromatograph by a Varian Representative.

The installation will include the following:

- Instrument installation
- Instrument software installation and registration
- Accessory installation
- Installation performance tests
- Basic customer training
- Maintenance overview

1.2 Pre-installation Check-list

I have prepared:

- Environmental conditions
- Suitable workbench
- Electrical power supplies
- Personal computer with Microsoft Windows® XP operating system installed and printer
- Appropriate network and workstation access
- IP address, subnet mask and gateway, if fixed IP
- Instrument has been placed near its final location
- Appropriate lifting equipment
- All unopened boxes have been checked for damage
- All boxes have been checked against the ordering list
- Waste container
- HPLC grade water and acetone

All preparations have been completed. Please arrange for the installation to be completed as soon as possible. I understand that if the installation site is not prepared in accordance with the enclosed instructions, additional installation charges may apply.

✎ Company name and address:_____

_____

✎ Name:_____

✎ Position:_____

✎ Telephone:_____ Date:_____

✎ Preferred installation date:_____

✎ Signed:_____

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2. Laboratory Environment

This section includes information on laboratory requirements for the Varian 900-LC Series Liquid Chromatograph including:

- Environmental conditions
- Workbench construction and location
- Guidelines for software installation

2.1 Suitability

The instrument is suitable **only** for indoor use and is classified suitable under the following categories (EN 61010-1):

Installation category II

Pollution degree 2

Safety class 1 (EN 61010-1)

Table 1. *Suitable environmental conditions for the Varian 900-LC Series HPLC instruments*

Condition	Altitude	Temperature (°C)	Humidity (%RH) non-condensing
Non-operating (Transport)	0-3050 m (0-10000 ft)	5-45	20-80
Non-operating and meeting dielectric strength tests	Sea level	40	90-95
Operating within specifications	0-3050 m (0-10000 ft)	10-35	8-80

2.2 Environmental Conditions

The area selected for the operation of a Varian 900-LC Series Liquid Chromatograph **must be free from drafts, corrosive atmospheres and vibration.** Sample preparation areas and materials storage facilities should be located in a separate room.

The area should be a dust free, low humidity environment. Air-conditioning is strongly recommended for control of the environment. For optimum analytical performance it is recommended that the ambient temperature of the laboratory be between 20 and 25 °C (68 and 77 °F).

2.2.1 Cleanliness

Limit dust levels to less than 36 000 000 particles (0.5 microns or larger) per cubic meter of air. This is equivalent to a clean office.

2.2.2 Instrument cooling air supply

The Varian 900-LC Series Liquid Chromatograph requires **clean, dry, non-corrosive air for cooling purposes**. This is supplied to the instrument through air supply vents in the instrument.

The air supply is used to cool the electronics of the instrument. Several of these assemblies contain parts prone to corrosion. The introduction of cooling air contaminated with high levels of acid vapor or other corrosive substances may cause damage to the instrument.

Due to the corrosive nature of some analytical work, it is recommended that in applications demanding high usage of corrosive materials, an external cooling air supply system be provided. It is **strongly recommended** that the cooling air be supplied from an environmentally controlled area that is away from the instrument and any other area where corrosive materials are stored or used.

2.3 Workbench

The Varian 900-LC Series Liquid Chromatograph is a precision instrument. The workbench must be free from vibration and must be stable and strong enough to support the total weight of the equipment to be placed on top of the workbench. The bench top should be large enough to permit free circulation of air through the main instrument and around each of the accessories.

The information provided in the weights and dimensions table will help make planning easier. Portable or semi-permanent trolleys must not be used as work benches for the HPLC system.

To avoid damage through spillage of samples being used, the instrument bench top should be covered with a material that is corrosion-resistant and impervious to liquid spillage. For comfortable working conditions and easy access to the instrument sample introduction system, Varian recommends that the height of the workbench be approximately 900 mm (36 in.) high.

2.3.1 Workbench location

The workbench location should permit service access from all sides. A minimum of 400 mm (16 in.) free space at the sides of the HPLC system and approximately 750 mm (30 in.) at the rear of the instrument is required for maintenance and service access.

The Varian 900-LC Series Liquid Chromatograph should not be located close to an access door, window or any other area where drafts may cause unstable temperature conditions.

The following diagrams show the relative dimensions of the main instrument. You should leave enough space to spin the instrument around for service from the rear panel (about 104 cm x 104 cm) unless you can access the unit from the rear without spinning it. These dimensions should be considered during the preparation for installation of your HPLC system.

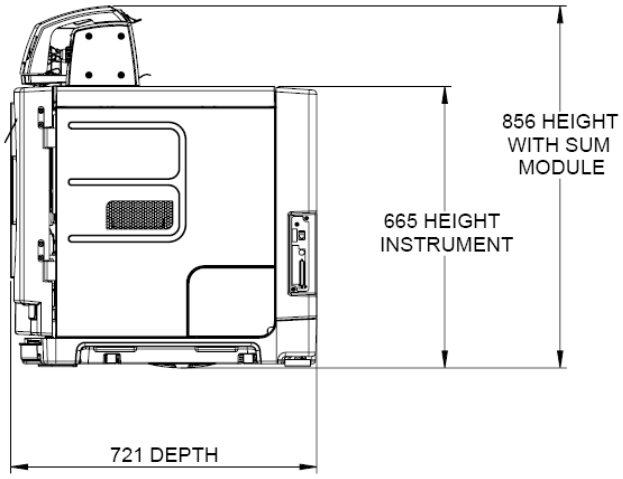

Figure 1. *Side view of instrument, measured in millimeters*

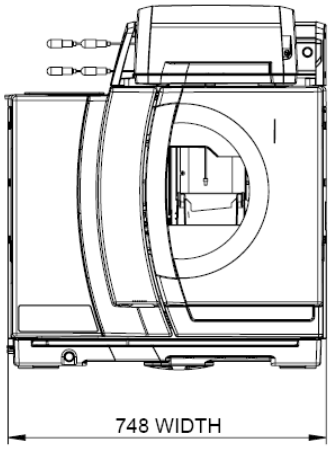

Figure 2. *Front view of instrument, measured in millimeters*

2.4 PC Requirements

The recommended configuration represents the minimum on which you can run the software. This PC configuration may be out of manufacture, or you may want to use a PC you already have.

Table 2. *Varian 900-LC Series Liquid Chromatograph recommended PC requirements*

Pentium 4 processor, 3.0 GHz or higher
2 GB of RAM
2 x 200 GB hard drives
DVD-ROM
Super VGA monitor with high color (16 bit), 1024 x 768 resolution
One of these graphic cards (for using PDA features): • INTEL™ integrated video card • AM Radeon™ AGP • ATI™ Mobility 128 AGP • ATI™ Rage Mobility 128 AGP • ATI™ mobility M3 • ATI™ 3D Rage PRO AGP 2X • ATI™ Rage 128 Pro Ultra GL AGP • ATI™ Rage XL PCI (B41) • ATI™ Rage 128 Ultra (16MB) • Neomagic™ Magicgraph 128XD • NeoMagic™ MagicMedia256ZX • Mga-mil™: chip MGA-2064WB4R2; CNA: TI TVP3026 220MHZ • Nvidia™ Riva TNT (with last driver version: chip: NV4; memory: 16Mo; Files: nv4_mini.sys, nv4_disp.dll; Version : 4.00,4.0.0) • NVIDIA™ GeForce4 MX 420, 64MB DDR • NVidia™ GEForce4 440 MX • Matrox™ G200 AGP
16 bit sound card
Windows® 101 key keyboard
Microsoft® or compatible mouse
2 PCI-compatible slots for I/O card
Windows® XP (Service pack 1)
Microsoft® Internet Explorer® v 6.0

PCs supplied with Letter of Credit orders will be an international brand and will be the 'Recommended' configuration or better.

Higher rated PC components can be substituted for those listed above e.g., processor type, amount of memory, screen size and resolution, operating system version, etc.

Additionally you need to have a valid copy of Galaxie in order to run the instrument. This may need to be ordered.

3. Instrument Shipping Information

Generally, Varian 900-LC Series Liquid Chromatographs are sold **Free On Board** shipping point, with the transportation from this point at the customer's expense. Due to the size and nature of the LC system, it is advisable that a third party is engaged to assist with transportation from the point of unloading to the final placement of the instrument in the laboratory. The Varian Field Sales and Service Offices will be able to assist in the task of recommending a third party that specializes in the transportation of precision scientific instrumentation.

3.1 In-House Transit Routes

In-house transit routes must be carefully considered. Vertical, horizontal and turning clearances should be calculated from the shipping crate dimensions of the liquid chromatograph, which is the largest unit in any system arrangement.

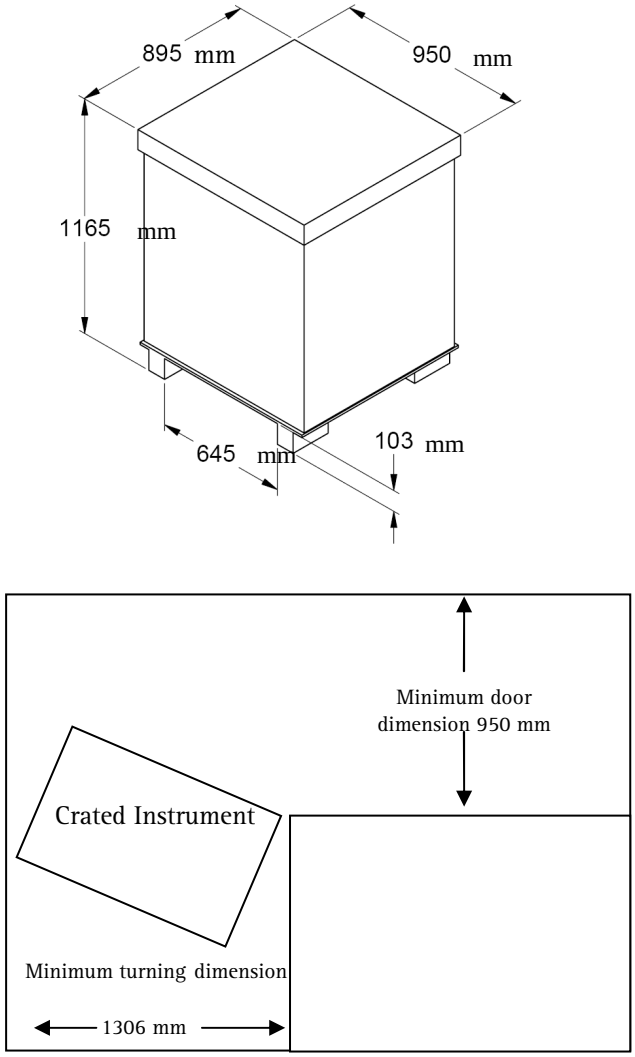

Figure 3. *Maximum clearance required for transportation in the shipping crate*

Figure 3 provides an indication of the minimum turning clearance and minimum door width required for the HPLC system in its shipping crate.

Particular attention should be made to the clearance of any doors in the transit route to the laboratory. The required turning and door clearance may need to take into consideration any lifting device used for transporting the instrument (e.g., fork lift, pallet truck or trolley).

3.2 Insurance After Delivery

As the carrier's liability ceases when the equipment is delivered, Varian recommends that the instrument owner arranges separate insurance that will cover transportation from the delivery point to the installation site. The delivery point will vary according to the carrier, the shipping method, and in some cases the terms of sale. Some carriers will only deliver to their own distribution center, while others may deliver to the actual installation site.

3.3 Weights and Dimensions

Table 3. *Weights and dimensions*

System unit	Width	Depth	Height	Weight
Varian 920-LC Liquid Chromatograph (Analytical)	750 mm 30 in	725 mm 29 in	665 mm 27 in	133 kg 294 lb
Varian 940-LC Liquid Chromatograph (Semi-Preparative)	750 mm 30 in	725 mm 29 in	856 mm 34 in	139 kg 307 lb
Varian 940-LC Liquid Chromatograph (Preparative)	750 mm 30 in	725 mm 29 in	665 mm 27 in	137 kg 302 lb
Shipping dimensions (all units)	950 mm 38 in	895 mm 36 in	1165 mm 46 in	170 kg 375 lb

Additional components	Width	Depth	Height	Weight
ELS detector	200 mm 8 in	450 mm 18 in	415 mm 17 in	11 kg 25 lb
Shipping dimensions	360 mm 28 in	700 mm 14 in	600 mm 24 in	18 kg 40 lb
RI detector	296 mm 12 in	475 mm 19 in	212 mm 9 in	11 kg 25 lb
Shipping dimensions	460 mm 31 in	775 mm 15 in	385 mm 18 in	14 kg 31 lb
Fraction collector	490 mm 20 in	285 mm 12 in	510 mm 21 in	18 kg 34 lb
Shipping dimensions	760 mm 30 in	500 mm 20 in	840 mm 32 in	31 kg 69 lb

Warning
The Varian 900-LC Series Liquid Chromatograph weighs approximately 140 kg (309 lb). To avoid injury to personnel or damage to equipment, always use a fork lift or other suitable lifting device when moving the instrument.

3.4 Transit Damage

Transit damage will only be admitted by the carrier if it is reported as agreed in the terms of his agreement. For any claims against damage in transit, the following general rules apply.

- Before accepting delivery, you should inspect the packages for signs of obvious damage. The nature of any obvious damage must be noted on the carrier's waybill, and then must be countersigned by a representative of the carrier.
- A copy of any damage report must be forwarded to the Varian Sales Office dealing with the supply of the equipment.

Varian 900-LC Series Liquid Chromatographs are inherently robust, and the packaging is designed to prevent damage. It must be remembered that the contents form part of a precision measuring system and all packages should be handled accordingly. In transit, sharp jolts and shocks must be avoided and the packages must not be inverted or tilted unnecessarily. Markings on the shipping cartons generally indicate the required orientation of the carton.

3.5 Unpacking the Instrument

Do not unpack the instrument under any circumstances without the presence of a Varian Representative.

Detailed instructions on unpacking the instrument are supplied with the documentation shipped with the instrument.

Warning
The Varian 900-LC Series Liquid Chromatograph weighs approximately 140 kg (309 lb). To avoid injury to personnel or damage to equipment, always use a fork lift or other suitable lifting device when moving the instrument. Not all options may be present, so consult your purchase order for more information.

4. Laboratory Facilities

This section includes information on the laboratory facilities required to support the operation of the LC system. These include:

- Electrical power supply
- Gas supplies
- Waste fluid container

4.1 Electrical Power Supplies

The installation of electrical power supplies must comply with the rules and/or regulations imposed by the local authorities responsible for the use of electrical energy in the workplace.

All power supplies for the Varian 900-LC Series Liquid Chromatograph and its accessories should be single phase, AC, 3 wire systems (active, neutral, ground; or two active and ground). Each connection should be terminated at an appropriate receptacle within reach of each assembly's power cable. Use of power boards or extension cables is **not** recommended.

Avoid using power supplies from a source that may be subject to electrical interference from other services (such as large electric motors, elevators, welders and air conditioning units).

Varian 900-LC Series Liquid Chromatographs are supplied with a 2 m long (6 ft and 6 in.), mains supply cable.

The Varian 900-LC Series Liquid Chromatograph draws a maximum of 12 Amps RMS at 100 volts with a power factor of approximately 0.90.

4.1.1 Electrical requirements

Table 4. *System electrical specifications*

System unit	Required supply voltage	Nominal rating
Varian 920-LC Liquid Chromatograph (Analytical)	100-120 V, 220-240 V AC/ 50/60 Hz	1000 VA
Varian 940-LC Liquid Chromatograph (Semi-preparative)	100-120 V, 220-240 V AC/ 50/60 Hz	800 VA
Varian 940-LC Liquid Chromatograph (Preparative)	100-120 V, 220-240 V AC/ 50/60 Hz	1200 VA
External component		
ELS detector	115-230 V AC, 50-60 Hz	480 VA
External RI detector	115-230 V AC, 50-60 Hz	150 VA
Fraction collector	115-230 V AC, 50-60 Hz	264 VA
Ethernet switch	115-230 V AC, 50-60 Hz	7 VA
Personal computer (typical)	115, 120, 220, 240 V AC	300 VA
Printer (typical)	115, 120, 220, 240 V AC	85 VA

4.1.2 LC system power connections

Table 5. *Varian 900-LC series power connections*

Power supply phase	Single
Cable rating	(220-240 V countries) 5 A minimum
Cable rating	(100-120 V countries) 12 A minimum

	Plug supplied	**Required wall socket**
Australia	Complies with AS3112	To comply with AS3112. HPM 787 or Clipsal 2015 (250 V, 10 A)
USA	Complies with Nema 5-15P	To comply with Nema 5-15R. Hubbell 5262 (125 V, 15 A)
Canada	Complies with Nema 5-15P Complies with CS 22.2 No. 42	To comply with Nema 5-15R. Hubbell 5262 (125 V, 15 A)
Europe	Complies with CEE 7 Sheet VII	To comply with CEE 7 Sheet VII (250 V, 10/16 A)

4.1.3 Other electrical connections

All power requirements will be instrument specific. Please check with your Quality/Compliance department for correct information.

4.1.4 Fuses

1FS1 & 1FS2	T10 A H250 V, 3AB SLO-BLO (for 220-240 V countries) T20 A H250 V, 3AB SLO-BLO (for 100-120 V countries)
FS3	T2.5 A H250 V, 5x20 mm (for both 100-120 V and 220-240 V countries)

For safety reasons, any other internal fuse is not operator accessible, and should only be replaced by Varian-authorized personnel.

Fuse information on the rear of the instrument is the most up-to-date.

4.2 Gas Supplies

The installation of compressed or liquid gas supplies must comply with the rules and/or regulations imposed by the local authorities responsible for such use in the workplace.

Unless your system is equipped with a helium sparging unit, there are no gas requirements for the Varian 900-LC Series systems. For gas requirements on these other devices, consult the operation manual or other documentation enclosed with the particular device.

4.2.1 Storage cylinder instructions

Cylinders containing gas under pressure should be firmly secured to a rigid structure, and the storage area must be adequately ventilated.

Never locate gas cylinders near a source of ignition, or in a position that is subject to direct heat. Gas storage cylinders often incorporate a pressure release device which will discharge the gas at a predetermined temperature, usually around 52 °C (125 °F).

If gases are to be plumbed from a remote storage area to the instrument site, ensure that the local outlets are fitted with stop valves, pressure gauges and suitable regulators which are easily accessible to the instrument operator. The gas outlets must be provided within 1.5 meters (5 feet) of the instrument.

The customer is responsible for installation of gas supplies or gas cylinders. Varian authorized personnel will not be involved in the setting up or installation of any gas supplies other than the connections into the liquid chromatograph.

4.3 Waste Fluid Container

Operation of the Varian 900-LC Series Liquid Chromatograph requires the use of a waste container for the disposal of excess fluids. Suitable tubing is supplied with the HPLC system for use with most solvents.

A chemically inert container, appropriately sized to hold waste coming from the instrument must be provided by the instrument user. It should be located underneath the workbench where it is protected by the bench and in full view of the operator.

4.4 Network Requirements

The company network must allow TCP/IP communications to be routed across. However a desktop switch is provided with the instrument, to allow local networking. The following are suggested network connections using the provided switch:

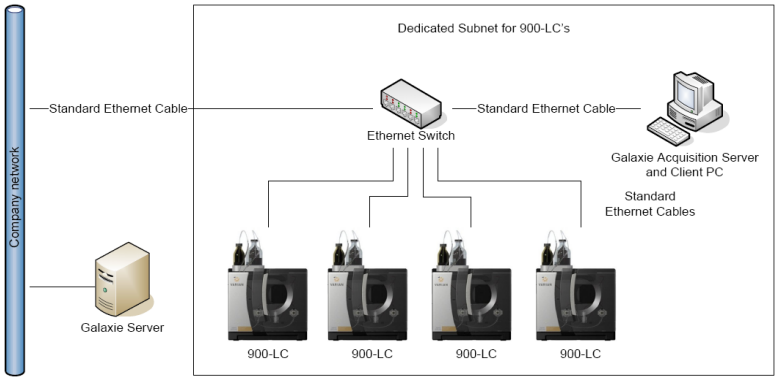

Figure 4. *Networked installation with the server on the network*

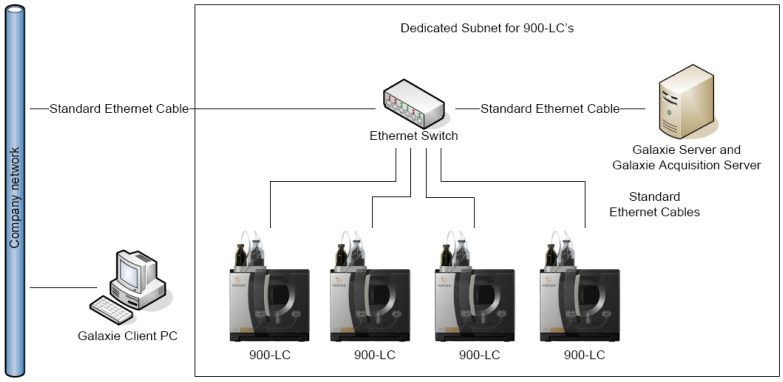

Figure 5. *Networked installation with the server on the laboratory domain*

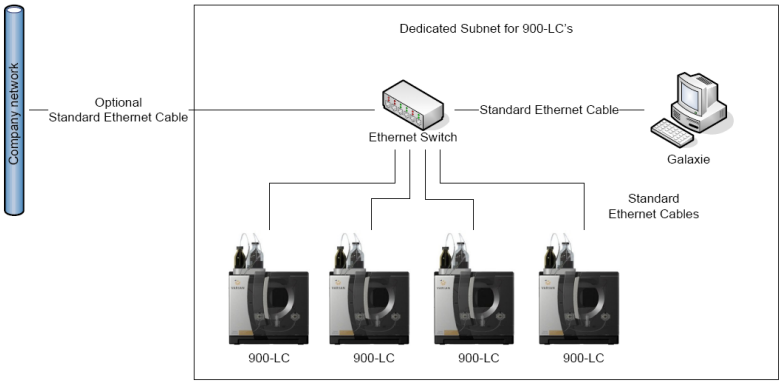

Figure 6. *Stand alone installation with four instruments connected to the acquisition client*

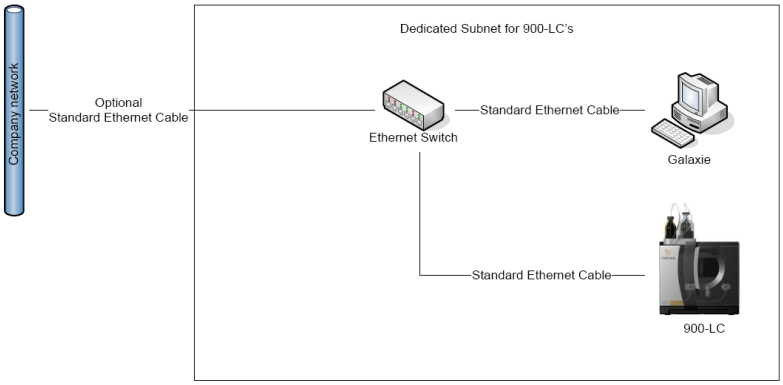

Figure 7. *Stand alone installation with one instrument connected to the acquisition client*

You or your network administrator must provide any hardware, adapters, cables, and configuration and setup work required to convert from the company network wiring type to 10/100 BaseT wiring. This hardware must comply with the IEEE 802.3 standard.

4.5 Guidelines for Software Installation

Varian recommends that you purchase a PC as part of the Varian 900-LC Series Liquid Chromatograph package. The PC included in the package will come with the appropriate operating system as loaded by the PC supplier.

For instructions on installing the Windows® operating system, please refer to the appropriate manuals supplied with the software. It is the responsibility of the customer to ensure that the operating system software has been installed and is functional if the customer is supplying the PC or the operating system.

Varian will not assume responsibility for loss of data.

The Varian 900-LC Series instrument requires a version of Galaxie™ Software in order to run the instrument.

A Varian Representative will have advised you what version of the Galaxie software is required and what options you have in terms of upgrading.

The Varian Representative will connect the PC to the HPLC system and any factory-approved accessories purchased at installation. Initial instrument software installation is also included as part of the system installation. For information on installing the Galaxie™ Software, consult the Varian 900-LC Series Liquid Chromatograph getting started manual that is supplied with the instrument.

For networking Galaxie™ Software, consult the Galaxie CDS Installation Guide.

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5. Operator Training

The Varian 900-LC Series Liquid Chromatograph instrument is installed by a Varian Representative. During installation the Varian Representative will demonstrate the basic operating procedures while conducting the installation performance tests during the installation procedure. The Varian Representative however, is not necessarily experienced in complex analytical routines and is not authorized to conduct extensive training.

To ensure that your operators benefit the most from witnessing the installation performance tests, operator training should be completed before your equipment is installed. It is strongly recommended that you take advantage of the special training courses that are conducted at various locations by the Varian Customer Support and Sales Organization.

In some areas it may be possible to arrange for operator training to be carried out after the installation, using your own instrument. To check this possibility, please contact your local Varian Sales and Service Office.

When waiting for tests or instrument warm up to complete the Varian Representative will demonstrate some of the basic system operating procedures.

If your system computer was purchased from Varian, it will be configured, formatted, partitioned and loaded with its operating system. The Galaxie™ Software will be loaded during installation.

Please note that you must have a working knowledge of the computer operating system, as this type of instruction is not provided by Varian. The online help supplied with the HPLC system provides step-by-step instructions for setting up the system and detailed operating instructions for the analysis procedures—it does not include instructions for operation of the computer.

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