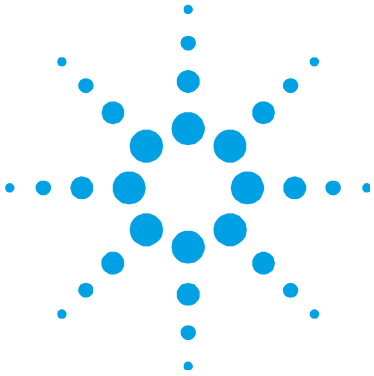


Agilent Cary 600 Series FTIR

Pre-Installation Manual

Agilent Technologies

Notices

Manual Part Number

8510246400

Edition

Third edition, June 2011

Printed in Australia

Agilent Technologies, Inc.

Warranty

The material contained in this document is provided "as is", and is subject to being changed, without notice, in future editions. Further, to the maximum extent permitted by applicable law, Agilent disclaims all warranties, either express or implied, with regard to this manual and any information contained herein, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. Agilent shall not be liable for errors or for incidental or consequential damages in connection with the furnishing, use, or performance of this document or of any information contained herein. Should Agilent and the user have a separate written agreement with warranty terms covering the material in this document that conflict with these terms, the warranty terms in the separate agreement shall control.

Technology Licenses

The hardware and/or software described in this document are furnished under a license and may be used or copied only in accordance with the terms of such license.

Restricted Rights Legend

If software is for use in the performance of a U.S. Government prime contract or subcontract, Software is delivered and licensed as "Commercial computer software" as defined in DFAR 252.227-7014 (June 1995), or as a "commercial item" as defined in FAR 2.101(a) or as "Restricted computer software" as defined in FAR 52.227-19 (June 1987) or any equivalent agency regulation or contract clause. Use, duplication or disclosure of Software is subject to Agilent Technologies' standard commercial license terms, and non-DOD Departments and Agencies of the U.S. Government will receive no greater than Restricted Rights as defined in FAR 52.227-19(c)(1-2) (June 1987). U.S. Government users will receive no greater than Limited Rights as defined in FAR 52.227-14 (June 1987) or DFAR 252.227-7015 (b)(2) (November 1995), as applicable in any technical data.

Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Request for Installation

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: _____

Company address: _____

_____

_____

Name: _____

Position: _____

Telephone: _____

Preferred installation date: _____

Signed: _____

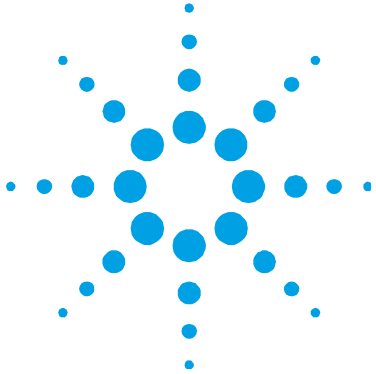
Date: _____

Pre-Installation Checklist

Your site must meet all requirements before you request installation. Before unpacking the boxes, complete each requirement listed in the table. After completing each requirement, place a check in the appropriate checkbox. Ensure you compare each item inside the boxes with the packing list supplied with the boxes.

Preparation requirement	Complete
The principal installation area is in compliance with all relevant safety regulations.	☐
The work area temperature is maintained between 20 and 26 °C.	☐
The relative humidity is maintained between 20 and 50%, non-condensing.	☐
The work area is free of excessive particulate matter.	☐
The system workbench is free from vibrations.	☐
The workbench can support the system weight.	☐
Sufficient bench space is available for all system units.	☐
Specified electrical supply and power outlets are installed.	☐
A nitrogen supply (at specified purity), regulator, and gas lines are installed.	☐
The entrance to the work area is at least 92 cm (36 in) wide.	☐
The principal operator will be available for the installation and certification period.	☐
Have any additional criteria been agreed within the contract? If yes, please specify: _____ _____ _____	Yes ☐ No ☐
Is there any additional equipment that needs to be connected to the system? If yes, please specify:	Yes ☐ No ☐

Contents



1. Introduction

This manual contains the information required to successfully prepare a site for installation of an Agilent Cary 600 Series FTIR spectrometer. If you have difficulty preparing for the installation, and for details of operator training courses, contact your Agilent sales or support representative.

Installation guidelines

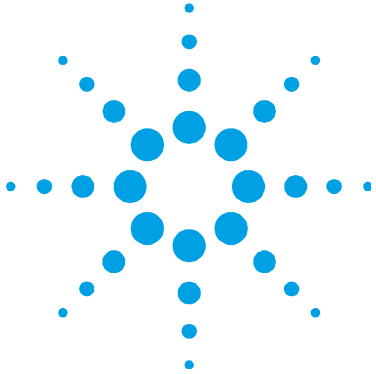
Allow a minimum of 1 day for the installation of the Cary 600 Series FTIR spectrometer by an Agilent representative.

The installation will include:

- Spectrometer installation
- Instrument software installation and registration
- Accessory installation
- Spectrometer installation performance tests
- Basic customer familiarization
- Maintenance overview

Before you request installation, your site must meet all requirements. After completing each preparation requirement, place a check in the appropriate checkbox in the checklist on Page 4. Fax or mail the ‘Request for installation’ to your local Agilent office. As soon as it is received, an Agilent representative will contact you to arrange a convenient time for installation.

This page is intentionally left blank.



2. Safety Practices and Hazards

Your Agilent instrument and accessories were carefully designed so 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. These safety practices are provided to help you safely operate the instrument. Before using the instrument or accessories, you must thoroughly read these safety practices. Observe all relevant safety practices at all times.

General

Operation of an Agilent Cary 600 Series FTIR spectrometer involves the use of electrical circuits, compressed air or gases and the use of liquid nitrogen. Careless, improper or unskilled use of the spectrometer can cause death or serious injury to personnel, and/or severe damage to equipment and property.

The Cary 600 Series FTIR spectrometer 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 Agilent, this protection may be impaired. Develop safe working habits that do not depend upon the correct operation of the interlocks for safe operation. Do not bypass any interlock or cover.

Electrical

The Cary 600 Series FTIR spectrometer and some accessories contain electrical circuits, devices, and components operating at dangerous voltages. Contact with these circuits, devices and components can cause death, serious injury, or painful electrical shock.

Good grounding/earthing is essential to avoid a potentially serious electric shock hazard. Ensure that there is an integral ground connection between the metal base of the instrument and accessories and the 3-pin earth-grounded receptacle. Consult the manuals or product labels supplied with your computer, monitor and printer for the relevant grounding requirements.

NOTE The above model is Equipment Class I.

Application of the wrong supply voltage can create a fire hazard and a potentially serious shock hazard, and could seriously damage the system, accessories and any attached ancillary equipment. The Cary 600 Series FTIR spectrometer has a universal power supply, which adapts to the supply voltage. However, care must be taken to ensure that the correct voltage is used.

Consult the manuals supplied with your computer, monitor and printer for their specific voltage requirements.

Replace blown fuses with fuses of the size and rating as stipulated in the text adjacent to the fuse holder or in the manuals where listed.

Do NOT use power cords with faulty or frayed insulation.

Cryogenic cooling

Some detectors used with your Cary 600 Series FTIR spectrometer (MCT or InSb detectors) are cryogenically-cooled. The liquid nitrogen used in this process is extremely cold and can cause damage to the human body. Use appropriate protective equipment when working with liquid nitrogen.

Ultraviolet radiation

Tungsten-halogen source lamps (for near-infrared analysis) emit hazardous ultraviolet radiation. This radiation can cause serious damage to eyes. NEVER look directly at the lamp.

Laser safety

The Cary 600 Series FTIR spectrometer uses a He-Ne laser operating in the visible region at 632.8 nanometers. The spectrometer is a Class 2 laser product, powerful enough to warrant caution in its use. The spectrometer complies with FDA and CE standards for light-emitting products.

An attenuated portion of the laser beam passes into and through the spectrometer sample compartment. Although not powerful enough to harm your skin should your hand intercept it, the laser light could cause retinal (eye) damage during prolonged direct viewing. This is not possible given the normal optical layout of the spectrometer. However, if a highly reflective surface such as a mirror is allowed to intercept the beam, the beam could be redirected out of the sample compartment resulting in on-axis or direct viewing. Care must be taken to avoid this.

Other precautions

IR sources operate at high temperatures, which may burn you. Before replacing a source element that has been lit, switch off the instrument and ensure that the source has adequately cooled.

Do not block the ventilation grills on the instrument and accessories. Consult the manuals supplied with your computer, monitor and printer for their specific ventilation requirements.

Use of the Cary 600 Series FTIR spectrometer rand 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, which can result in death, serious personal injury, and damage to equipment and property. ALWAYS ensure that laboratory safety practices governing the use, handling and disposal of such materials are strictly observed. These safety practices should include the wearing of appropriate safety clothing and safety glasses.

The Cary 600 Series FTIR spectrometer weighs approximately 85 kg (176 lb). To avoid injury to personnel or damage to equipment, always use a suitable lifting device and proper lifting techniques when moving the instrument.

Warning and caution messages

Carefully read all warnings and cautions and observe them at all times.

A Warning message is used in the text when failure to observe instructions or precautions could result in death or injury. Warnings have the following format:

WARNING

Hazard Type

Nature of the hazard, information on how to avoid the hazard, and possible consequences if you don't.

The triangular symbols that appear in conjunction with warnings are outlined in the next section.

A Caution message is used when failure to observe instructions could result in damage to equipment (Agilent supplied and/or other associated equipment). Cautions have the following format:

CAUTION Caution information appears here.

Information symbols

The following triangular symbols appear in conjunction with warnings on the spectrometer and associated documentation. The hazard they depict is shown below each symbol:


Electrical shock


Eye hazard


Heavy weight (danger to feet)


Heavy weight (danger to hands)


Cryogenics


Laser

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

The following symbols also appear on the instrument or in the documentation:

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

Color coding

The various indicator lights appearing on Agilent instruments and associated accessories are color-coded to represent the status of the instrument or accessory.

- A green light indicates the instrument is in normal or standby mode.
- A yellow light indicates that the instrument needs attention.
- A blue light indicates that operator intervention is required.

CE compliance

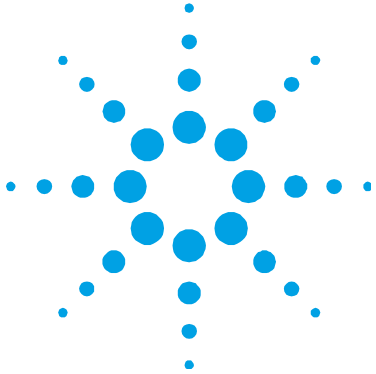
The Cary 600 Series FTIR spectrometer has been designed to comply with the requirements of the Electromagnetic Compatibility (EMC) Directive and the Low Voltage (electrical safety) Directive (commonly referred to as the LVD) of the European Union. Agilent has confirmed that each product complies with the relevant directives by testing a prototype against the prescribed EN (European Norm) standards.

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

- The CE marking appearing on the rear of the product.
- The documentation package that accompanies the product, containing a copy of the Declaration of Conformity. This declaration is the legal declaration by Agilent that the product complies with the directives and also shows the EN standards to which the product was tested to demonstrate compliance.

☑ After all safety regulations have been met, check the checklist box: *The principal installation area is in compliance with all relevant safety regulations.*

This page is intentionally left blank.



3. Work Area

Suitability

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

- Installation category II
- Pollution degree 2
- Equipment class I

Environmental conditions

The area selected for the operation of a Cary 600 Series FTIR spectrometer **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.

Table 1 Suitable conditions during instrument transportation, non-operation and operation

Condition	Altitude (m, ft)	Temperature (°C, °F)	Relative humidity, non-condensing (%)
Non-operating (transport)	0–3050, 0–10,000	5–45, 41–113	20–50
Operating within performance specifications	0–3050, 0–10,000	20–26, 68–79	20–50

Temperature

For optimum analytical performance, the ambient temperature of the work area must be between 20 and 26 °C (68 and 79 °F).

NOTE As the work area temperature increases, system reliability decreases due to heat generated by electronic components during operation. This heat must dissipate to the surrounding air for reliable operation.

☑ After the temperature requirements have been met, check the checklist box: *The work area temperature is maintained between 20 and 26 °C*.

Humidity

The relative humidity of the operating environment must be between 20 and 50 percent, with no condensation.

CAUTION The beam splitter is hygroscopic and is damaged by high humidity. Operating the spectrometer at a very low humidity may result in the accumulation and discharge of static electricity, shortening the life of electronic components. Operating the system at high humidity may produce condensation and result in short circuits.

☑ After the humidity requirements have been met, check the checklist box: *The relative humidity is maintained between 20 and 50%, non-condensing.*

Put a temperature/humidity monitor in your work area to assist with conforming to the temperature and humidity specifications.

Cleanliness

Limit dust levels to less than 36,000,000 particles (0.5 micrometers or larger) per cubic meter of air. This is equivalent to a very clean office and is measured using dust monitoring equipment. Occupational hygienic companies can perform this service.

☑ After the cleanliness requirements have been met, check the checklist box: *The work area is free of excessive particulate matter.*

Workbench

The Cary 600 Series FTIR spectrometer is a precision instrument. The workbench must be flat and level, free from vibration, and stable and strong enough to support the total weight of the equipment to be placed on top of the bench without warping or sagging.

Table 2 Equipment weights and dimensions

System unit	Weight (kg, lb)	Width (mm, in)	Depth (mm, in)	Height (mm, in)
Agilent Cary 600 Series FTIR spectrometer	85, 176	700, 28	750, 31	365, 15
Computer (typical)	N/A	160, 6	450, 18	450, 18
Agilent Cary 610/620 FTIR microscope	55, 121	390, 16	720, 29	800, 32
Agilent Large Sample accessory	36, 80	570, 23	395, 16	290, 12

☑ After the workbench vibration requirements have been met, check the checklist box: *The system workbench is free from vibrations.*

☑ After the workbench support requirements have been met, check the checklist box: *The workbench can support the system weight.*

For comfortable working conditions and easy access to the instrument sample introduction system, the height of the workbench should be approximately 900 mm (36 in.).

The bench top must be large enough to permit free circulation of air between and around units. Space to the right of the spectrometer will be required for the computer and computer-related peripherals. To accommodate interface cable lengths, the computer itself should be no more than 92 cm (3 ft) from the spectrometer.

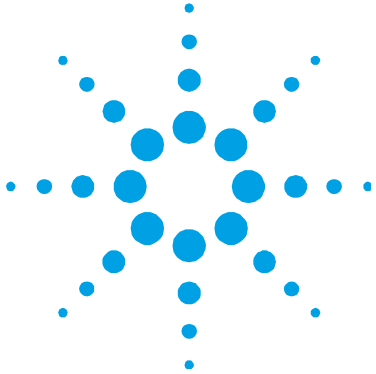
The Cary 600 Series FTIR spectrometer should not be located close to an access door, window or any other area where drafts may cause unstable temperature conditions.

The workbench location should permit service access from all sides. A minimum of 400 mm (16 in.) free space at the sides of the spectrometer and approximately 100 mm (4 in.) at the rear of the instrument is required for maintenance and service access and to accommodate cables and tubing.

The spectrometer requires an overhead space of 70 cm (28 in.). The 610/620 FTIR microscope requires an overhead space of 30 cm (12 in.).

☑ After the bench space requirements have been met, check the checklist box: *Sufficient bench space is available for all system units.*

To avoid damage from the spilling of samples, cover the instrument bench top with a material that is corrosion-resistant and impervious to liquid spills.



4. Electrical Specifications

Mains supply

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 Agilent Cary 600 Series FTIR spectrometer and its accessories should be single phase, AC (alternating current), three 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**.**

A dedicated 10 ampere circuit with grounded receptacles is required. No other instruments should be powered from the same circuit. Each of the system units – computer, monitor (unless powered from the computer), printer and spectrometer – requires a grounded receptacle (four in total). It is useful to have at least two additional receptacles for additional peripheral devices or spectrometer accessories.

The Agilent Large Sample accessory, Focal Plane Array and microscopes will also require a grounded receptacle.

Avoid using power supplies from a source that may be subject to electrical interference from other services; for example, large electric motors, elevators, welders, and air conditioning units.

Local regulations in several European countries do not permit the use of a breakable wall-mounted power supply connection for high current single phase mains supplies. In these areas, the mains power supply to the Cary 600 Series FTIR spectrometer should be hard-wired to the wall.

Table 3. Instrument electrical requirements

Instrument	Required supply voltage	Nominal rating
Agilent Cary 600 Series FTIR spectrometer	90–264 VAC, 47 to 63 Hz	200 VA
Agilent Cary 610/620 FTIR microscope (typical)	90–264 VAC, 47–63 Hz	60 VA

NOTE Refer to the literature provided with the computer, monitor and printer for details of individual power requirements.

☑ After the electrical requirements have been met, check the checklist box: *Specified electrical supply and power outlets are installed.*

Fuses

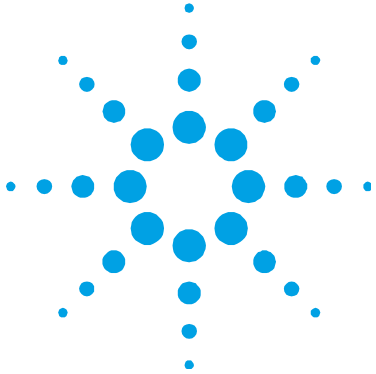
Fuses should be replaced only with the same type and rating as specified on the rear of the power supply.

Table 4. Fuse specifications

Instrument	Fuse type
Agilent Cary 600 Series FTIR spectrometer	1FS1 and 1FS2: T4.0 AH 250 V, IEC 127 sheet 5, 5 x 20 mm
Agilent Cary 610/620 FTIR microscope (typical)	1FS1: T2.0 AH 250 V, IEC 127 sheet 5, 5 x 20 mm

NOTE For safety reasons, any other internal fuse or circuit breaker is not operator accessible, and should be replaced only by Agilent-authorized personnel.

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



5. Optional Nitrogen Supply

The installation of compressed or liquid gas supplies must comply with the rules and/or regulations imposed by safety, electrical, and building codes. Nitrogen supplies are not available from Agilent but may be obtained from commercial suppliers.

Purging

Some spectrometer models are available with a sealed or a purged enclosure. The sealed version does not require purge gas, although purge gas is often used to purge the sample compartment of carbon dioxide, water vapor and other atmospheric gases. Purge gas is also helpful to initially flush out the spectrometer interior after it has been opened to replace the desiccant cartridge, or for other maintenance purposes.

Where fitted, the purge gas is introduced through a 6 mm (1/4 in.) outer diameter ‘push-fit’ connection point on the rear of the instrument for purging the sample compartment and the optical system. For purging the sample compartment only, there is a purge gas inlet on the right side of the spectrometer. There is an identical connector at the rear of the sample compartment for accessory purging.

Nitrogen supply tubing should be clean, free of dust or debris, flexible plastic (Tygon polyvinyl chloride or equivalent) tubing of 6 mm (1/4 in.) internal diameter. Do not use tubing treated with talcum powder or similar substances.

CAUTION Do not use rubber tubing, as this is usually treated internally with talc, which will be carried into and contaminate the instrument optics.

To purge an instrument you must have:

- Clean, dry air (free from carbon dioxide, oil, silica, or other particulates) or nitrogen gas (preferably from liquid nitrogen boil-off) dried to a dew point of -70 °C. If you are purging only the sample compartment, the purge gas can be cooled to -40 °C.
- Constant purging (24 hours per day, every day) to assure a non-condensing environment.
- A purge gas input flow rate of 10 liters per minute (0.4 cubic feet per minute).

Liquid or compressed gaseous nitrogen may be used with the Cary 600 Series FTIR spectrometer. Liquid nitrogen (in conjunction with a heat exchanger) is recommended because it is generally less costly per unit volume than compressed nitrogen, is more convenient and is of better quality. Where compressed nitrogen must be used, the gas must be dry, oil-free and uncontaminated with a purity of 99.996% or better.

CAUTION Do not use compressed nitrogen from a supplier who uses oil or water in the compression process. These methods leave fine particles of oil or water suspended in the nitrogen that may be deposited on the instrument optics. Only use nitrogen from a supplier who fills containers from immersion pumps that are lubricated with liquid nitrogen.

Air-bearing

There is a second inlet on the right of the spectrometer rear panel for supplying gas to air-bearing interferometers. Use only dry nitrogen or dry air. Agilent provides quick disconnects to attach to 6 mm (1/4 in.) outer diameter polyvinyl tubing.

Air-bearing gas input pressure should not exceed 420 kPa (60 psi). It will be reduced to 140 kPa (20 psi) by a controller inside the spectrometer case. The lower pressure limit is 165 kPa (24 psi).

Storage

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

Never position 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 pre-determined 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.

Detector cooling

MCT and InSb detectors require about 500 milliliters (16 ounces) of liquid nitrogen for the initial fill to bring the Dewar to an equilibrium temperature, then an additional 200 milliliters (7 ounces) to top it up.

WARNING

Cryogenic Hazard

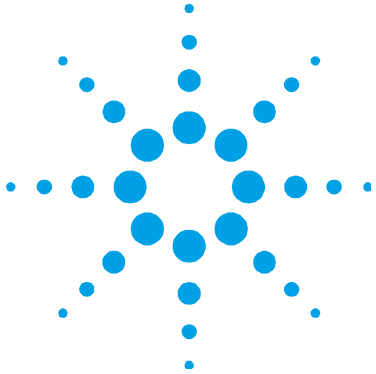
Contact with the super-cold liquid, gas, or pipe surfaces can cause severe skin damage. The PLCs should be located in a shielded position, and all piping should be routed or covered to prevent skin contact.

Liquid nitrogen may **not** be stored for extended periods and often has special storage requirements. Contact your local authorities and cryogenic gas supplier for more detailed information on storage requirements and boil-off rates for local types of portable liquid cylinders.

Table 5 Cooling methods for available detectors

Detector	Cooling method
High-sensitivity MCT	Liquid nitrogen
Linearized high-sensitivity MCT	Liquid nitrogen
Linearized broadband MCT	Liquid nitrogen
InSb	Liquid nitrogen
Room temperature DLaTGS	None
Cooled DLaTGS	Peltier
Far-infrared DLaTGS	None
Si	None
PbSe	None
InGaAs	None

☑ After the nitrogen requirements have been met, check the checklist box: *A nitrogen supply (at specified purity), regulator, and gas lines are installed.*



6. Shipping Information

Generally, Agilent Cary 600 Series FTIR spectrometers 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 spectrometer, a third party should be engaged to assist with transportation from the point of unloading to the final placement of the instrument in the work area. The Agilent 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.

Insurance

As the carrier's liability ceases when the equipment is delivered, Agilent recommends that the instrument owner arranges separate insurance to 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 deliver only to their own distribution centre, while others may deliver to the actual installation site.

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 spectrometer, which is the largest unit in any system arrangement.

Table 6 Shipping weights and dimensions

Instrument	Weight (kg, lb)	Width (mm, in.)	Depth (mm, in.)	Height (mm, in.)
Agilent Cary 600 Series FTIR spectrometer	120, 264.5	1100, 44	1000, 40	630, 25
Agilent Cary 610/620 FTIR microscope	95, 210	640, 26	870, 34	1100, 44

Figure 1 provides an indication of the minimum turning clearance and minimum door width required for the spectrometer in its shipping crate. Particular attention should be made to the clearance of any doors in the transit route to the work area. The required turning and door clearance may need to take into consideration any lifting device used for transporting the instrument (for example, forklift or pallet truck).

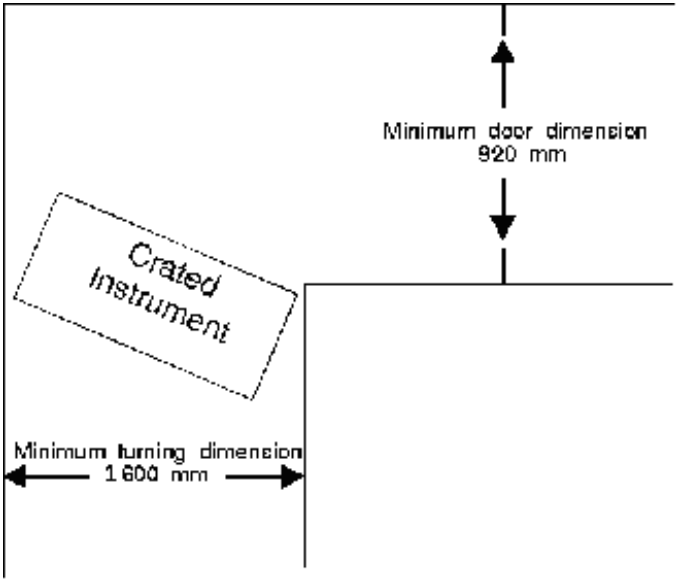


Figure 1. Minimum clearance required for transporting the shipping crate

☑ After the in-house transit route requirements have been met, check the checklist box:
The entrance to the work area is at least 92 cm (36 in) wide.

Inspecting for transit damage

Agilent instruments are inherently robust, and the packaging is designed to prevent internal damage. However, the contents form part of a precision measuring system and all packages should be handled with care. In transit, sharp jolts and shocks must be avoided and the packages must not be unnecessarily inverted or tilted. Markings on the shipping cartons generally indicate the required orientation of the carton.

- 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.
- Within the time limits stated in the terms of conditions of carriage, a further inspection must be made for concealed damage. If any damage is found at this stage, the carrier must be notified in writing and all packaging material must be retained for subsequent inspection by a representative of the carrier.
- A copy of any damage report must be forwarded to the Agilent sales office dealing with the supply of the equipment.

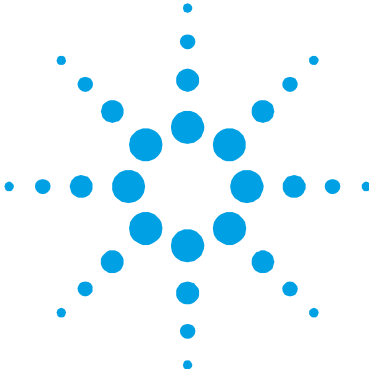
WARNING

Heavy Weight Hazard

The Cary 600 Series FTIR spectrometer weighs approximately 80 kg (148 lb). To avoid injury to personnel or damage to equipment, always use a suitable lifting device and proper lifting techniques when moving the instrument.

NOTE Do not unpack the instrument. Your Agilent representative will do this for you.

This page is intentionally left blank.



7. Computer System Requirements

Agilent recommends that you purchase a computer as part of the Cary 600 Series FTIR spectrometer package. The computer included in the package will be of the recommended configuration, and it will arrive formatted, partitioned and loaded with the appropriate Microsoft® Windows® operating system as loaded by the computer supplier. All software disks and manuals will be supplied.

Minimum configuration

If you are providing your own computer, it must meet the minimum configuration requirements. These represent the absolute minimum on which you can run the Agilent Resolutions Pro software. Higher rated computer components can be substituted for those listed. For example, processor type, amount of memory, and so on.

- Intel® Pentium® 4 processor, 2.6 GHz (IBM compatible)
- 256 MB of RAM; or 2 GB of RAM if using an Agilent imaging system
- 40 GB hard drive
- 24 speed CD-ROM or DVD drive
- Video card supporting 1024 x 768 pixel resolution, high color (16 bit) mode
- Super VGA monitor with high color (16 bit) display, 1024 x 768 resolution

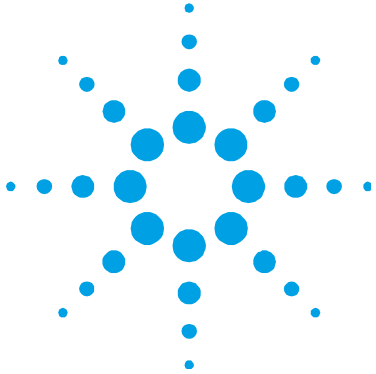
- 16 bit sound card
- Windows 101 key keyboard
- Microsoft or compatible mouse
- One FULL size PCI slot for video card. If using an Agilent imaging system, an additional FULL size PCI slot is required for the Agilent Imaging Frame Grabber Card.
- USB 2.0 interface
- 2 serial ports
- Microsoft Windows XP (Service Pack 2) 32 bit operating system

Setting up your computer

If you are supplying the computer or the operating system, you must ensure that the operating system has been installed and is functional. For instructions on installing the operating system, refer to the appropriate manuals supplied with the operating system software.

NOTE Agilent will not assume responsibility for loss of data.

The Agilent representative will connect the computer to the spectrometer and any factory-approved accessories purchased. Initial Resolutions Pro software installation is also included as part of the system installation. For information on installing the Resolutions Pro software, refer to the Agilent Cary 600 Series FTIR spectrometers and microscope manual (publication number 8510246800).



8. Operator Training

If Agilent installs the instrument, the Agilent representative will demonstrate the basic operating procedures while conducting the installation performance tests during the installation procedure. The Agilent representative, however, is not necessarily experienced in complex analytical routines and is not authorized to conduct extensive training.

To ensure that your operators maximize the benefit of 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 Agilent 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 investigate this possibility, contact your local Agilent sales and service office.

The initial software installation and preliminary operational tests will take your Agilent representative around thirty minutes. There is then a period of two hours that must be allowed for instrument warm-up before the detailed instrument tests for conformance to specification can be carried out. An automated software process performs operational tests that will take around thirty minutes. The results from these tests can be directly compared against the same tests completed at the factory before shipment.

While waiting for tests or instrument warm-up to complete, the Agilent representative will demonstrate some of the basic system operating procedures. If you are installing the instrument yourself, use this time to become familiar with the software, following the instructions in the software manual provided with the instrument.

NOTE You must have a working knowledge of the computer operating system, as this type of instruction is not provided by Agilent. The literature supplied with the Agilent Cary 600 Series FTIR 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.

☑ After the principal operator has been identified, check the checklist box: *The principal operator will be available for the installation and certification period.*