

## Agilent CrossLab Start Up Services

# Agilent Cary 4000 5000 6000i UV-Vis-NIR Site Preparation Checklist

Thank you for purchasing an instrument from **Agilent Technologies**. CrossLab Start Up is focused on helping customers shorten the time it takes to start realizing the full value of their instrument investment.

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, space, and utility requirements for the system set up in your lab.

# Introduction

## Customer Information

- If you have questions or problems in providing anything described as part of *Customer Responsibilities* below, please contact your local Agilent or partner support / service organization for assistance prior to delivery. In addition, Agilent and/or its partners reserve the right to reschedule the installation dependent upon the readiness of your laboratory.
- Should your site not be ready for whatever reasons, please contact Agilent as soon as possible to re-schedule any services that have been purchased.
- 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.
- Please refer to the other peripheral products (ie, samplers etc.) for site preparation requirements.

## 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 required **environmental conditions for the lab** as well as laboratory gases, tubing.
- The **power requirements** related to the product (e.g. **number & location** of electrical outlets).
- The **required operating supplies** necessary for the product and installation.
- While Agilent is delivering **Installation and Introduction** 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 and Other Considerations** section below for other product-specific information.
- For more details, please consult the Agilent Cary 100/300/4000/5000/6000i/7000 Spectrophotometer Site Preparation Guide, publication number 8510128000.

## Important Customer Web Links

- To access Agilent training and education, visit <http://www.agilent.com/chem/training> 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.
- To access the **Agilent Resource Center** web page, visit <https://www.agilent.com/en-us/agilentresources>. The following information topics are available:
  - Sample Prep and Containment
  - Chemical Standards
  - Analysis
  - Service and Support
  - Application Workflows
- The **Agilent Community** is an excellent place to get answers, collaborate with others about applications and Agilent products, and find in-depth documents and videos relevant to Agilent technologies. Visit <https://community.agilent.com/welcome>
- Videos about specific preparation requirements for your instrument can be found by searching the **Agilent YouTube** channel at <https://www.youtube.com/user/agilent>
- **Need to place a service call?** [Flexible Repair Options | Agilent](#)

## Site Preparation

### Dimensions and Weight

Identify the laboratory bench space before your system arrives based on the table below. 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. Also pay special attention to the total weight of the modules you have ordered to ensure your laboratory bench can support this weight.

### Special notes

- The workbench should be about 90cm (36in) high. It must be stable and strong enough to support the total weight of equipment to be used. Remember to provide space for the computer, monitor and printer.
- Ensure the workbench is free from vibration. Any equipment generating vibration during operation must be placed on the floor rather than alongside the Cary instrument on the workbench.
- To avoid damage through the spillage of analyzed samples, the worktops should be covered with a material that is corrosion resistant and impervious to liquids.
- Power cord and all other connections are located at the rear of the instrument. The Power switch is located on the front panel.

The following table provides dimensions and weight requirements.

- This product requires additional lifting assistance in order to be located in your lab due to its weight. Please discuss arrangements for this activity with the service engineer prior to installation.

Instrument Description	Weight		Height		Depth		Width	
	Kg	lbs.	mm	in	mm	in	mm	in
Cary 4000/5000/6000i packed	141	310	670	26	800	31	1420	56
Cary 4000/5000/6000i unpacked	91	200	380	15	710	28	1020	40

### Equipment Positioning on the Bench

- Allow eight inches in front of the Cary 4000/5000/6000i, at least two inches of space on both sides, and six inches at the rear of the system to permit free air circulation.

- Some accessories attach to the front of the instrument and may overhang the workbench if adequate space is not provided.

## Environmental Conditions

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

### Special notes

- Performance can be affected by sources of heat & cold, e.g. direct sunlight, heating/cooling from air conditioning outlets, drafts and/or vibrations.
- The site’s ambient temperature conditions must be stable for optimum performance. It is recommended that the ambient temperature of the laboratory be maintained between 20 and 25°C and be held constant to within ±2°C throughout the entire working day.
- For optimum performance the area should have a dust-free, low humidity atmosphere. Air conditioning is recommended.
- The Cary instrument is designed for operation in clean air conditions. The laboratory must be free of all contaminants that could have a degrading effect on the instrument’s components.
- Dust, acid and organic vapors, such as acetone, must be expelled from the work area.
- The instrument warranty will be void if the equipment is operated in substandard conditions.
- Sample preparation areas and materials storage facilities should be located in a separate room.

The following table may help you calculate the additional BTUs of heat dissipation from this new equipment. Maximums represent the heat given off when heated zones are set for maximum temperatures.

Instrument Description	Altitude meters (feet)	Operating Temperature Range °C (F)	Operating Humidity Range %	Heat Dissipation BTU
Cary 4000/5000/6000i non-operating (transit)	0 to 2133 (0 to 7000)	5 to 45 (41 to 113)	<90	
Cary 4000/5000/6000i operating within performance specifications	0 to 853 (0 to 2800)	10 to 35 (50 to 95)	15 to 80	631 BTU/hr
	853 to 2133 (2800 to 7000)	10 to 25 (50 to 77)		

## Power Consumption

### Special notes

- If a computer system is supplied with your instrument, be sure to account for those electrical outlets.
- A separate power outlet receptacle should be provided for the Cary 4000/5000/6000i system.
- Good electrical grounding is essential to avoid potentially serious shock hazards. A 3-wire outlet with ground connection must be provided for the instrument. Make certain that power outlets are earth-grounded at the grounding pin.
- All power supplies for the Cary 4000/5000/6000i must be single-phase, AC voltage, three-wire system (active, neutral, earth) and should be terminated at an appropriate power outlet receptacle that is within reach of the power cord.
- The use of extension cords or outlet adaptors is not recommended.
- Cary 4000/5000/6000i instruments are supplied with a 2 metre (6' 6") long power cord and three-pin plug assembly that is compatible with common standards applicable in the local area.
- Avoid using power supplies from a source that may be subject to electrical or RF interference from other services (large electric motors, elevators, and welders, for example).

Instrument Description	Line Voltage and Frequency V, Hz	Maximum Power Consumption VA	Maximum Power Consumption W
Cary 4000/5000/6000i	100 to 240 ±10%VAC 50 to 60 Hz	300VA	185W

## Required Operating Supplies by Customer for Installation

### Special notes

- For information on Agilent consumables, accessories, and laboratory operating supplies, please visit: [Agilent UV-Vis & UV-Vis-NIR Supplies and Certified UV Standards | Agilent](#)
- A pair of Microcell Holders are supplied as standard with the Cary 4000/5000/6000i. Cells are available separately.

Item Description (including Dimensions etc.)	Vendor's Part Number (if applicable)	Recommended Quantity
Quartz rectangular cuvettes	6610000800	1 pair

## Special Requirements and Other Considerations

### Nitrogen Purge (optional)

The Cary 4000/5000/6000i instrument is fitted with connection points for purging the optical system with nitrogen to enhance the performance of each instrument at extremes of its range. More details are provided in the Cary User's Guide (part number 8510197200), supplied with the instrument.

Nitrogen supplies are not available from Agilent but may be obtained from commercial suppliers. Liquid nitrogen (in conjunction with a heat exchanger) is recommended because it is generally less costly than compressed nitrogen and is of better quality. Where compressed nitrogen must be used, the gas must be dry, oil-free and uncontaminated. 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 lubricated with liquid nitrogen.

Operating pressure for the nitrogen purging system is 83 to 172 kPa (12 to 25 psi). Use a suitable regulator and gauge assembly to ensure that the nitrogen supply is maintained at the correct pressure.

Nitrogen supply tubing should be clean, flexible plastic tubing – 6 mm (1/4") inside diameter (Tygon PVC or equivalent). Do not use rubber tubing as this is usually treated internally with talc which will be carried into and contaminate the instrument optics.

The nitrogen system should include a manifold assembly with inlet from the supply and two outlets for connection to the instrument. Manifold outlets should each be fitted with a stop valve and flow meter for control of gas flow to the instrument.

NOTE: instrument warranty will be void if damage is caused by the use of contaminated nitrogen.

## Other Hazards

Use of the Cary 4000/5000/6000i system and accessories may involve materials, solvents and solutions that 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.

Your Agilent Cary 4000/5000/6000i spectrophotometer 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.

## ***Tools (provided)***

- Your Agilent instrument comes with a few basic hand tools to assist with the fitting, removal and alignment of liquid cell holders and other sample compartment accessories.



## Service Engineer Review (Optional)

### Service Engineer Comments

If the Service Engineer completed a review of the Site Preparation requirements with the customer, the Service Engineer should complete the following Comments section.

If there are any specific points that should be noted as part of performing the service review or other items of interest for the customer, please write in this box.

## Site Preparation Verification

Service Request Number:

Date of Review:

Service Engineer Name:

Customer Name:

Service Engineer Signature:

Total number of pages in this document: