

Agilent Cary 3500 UV-Vis Spectrophotometer

User's Guide



Notices

Manual Part Number

5994-0319EN

Edition 4, September 2023

Copyright

© Agilent Technologies, Inc. 2023

No part of this manual may be reproduced in any form or by any means (including electronic storage and retrieval or translation into a foreign language) without prior agreement and written consent from Agilent Technologies, Inc. as governed by United States and international copyright laws.

Agilent Technologies Australia [M] Pty Ltd

679 Springvale Road

Mulgrave, Victoria 3170, Australia

www.agilent.com

Instrument Manufacturing

Manufactured by Agilent Technologies
Bayan Lepas Free Industrial Zone,
Penang, PG, 11900, MY

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

U.S. Government Restricted Rights. Software and technical data rights granted to the federal government include only those rights customarily provided to end user customers. Agilent provides this customary commercial license in Software and technical data pursuant to FAR 12.211 (Technical Data) and 12.212 (Computer Software) and, for the Department of Defense, DFARS 252.227-7015 (Technical Data - Commercial Items) and DFARS 227.7202-3 (Rights in Commercial Computer Software or Computer Software Documentation).

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.

Contents

1	General Information and Safety Practices and Hazards	5
	User Documentation	5
	Conventions	6
	Notes and Tips	6
	Verifying Safe State	6
	Intended Use	7
	Lamp Module	7
	Modules, Covers and Panels	7
	Compressed gas cylinders	7
	Other Precautions	8
	Warning and Other Symbols	8
2	Specifications	11
	Site Preparation Checklist	11
	Measurement category	11
	Pollution degree	12
	Environmental conditions	12
	Weights and dimensions	12
	Electrical specifications	13
	Mains Supply	13
	Computer requirements	14
	Gas requirements	15
3	Installation	17
4	Introduction	19
	Modular concept	19
	Modules	19
	Cary UV-Vis Flexible module	20

Contents

Cary Multicell Ambient and Peltier	20
Compact Ambient and Peltier	21
Configurations	21
Temperature probes	22
Cary UV-Vis Flexible module accessories	22
Cell holder accessories	22
Solid Sample Mounting Kit	22
Cary Utilities Panel	22
Instrument overview	23
Front and right side of the Cary engine and Multicell and Compact modules	23
Front and right side of the Cary engine and Cary UV-Vis Flexible modules	23
Back of the engine	24
Front of the engine	24
Back of the modules	25
Indicator LED	25
Using the software	26
Compressed gas purging	26
Purge kit	26
Drain outlet	27
5 Troubleshooting, Maintenance and Spare Parts	29
Fuses	29
Spills	30
Spare Parts	31

1

General Information and Safety Practices and Hazards

User Documentation	5
Verifying Safe State	6
Intended Use	7
Lamp Module	7
Modules, Covers and Panels	7
Compressed gas cylinders	7
Other Precautions	8
Warning and Other Symbols	8

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

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

User Documentation

You have been provided with the following additional documentation to help you set up and operate your Agilent Cary 3500 UV-Vis spectrophotometer:

- Cary UV software installation instruction sheet found in the software box
- Cary module instruction sheet found in the module box
- Cary 3500 UV-Vis engine instruction sheet found in the engine box
- This manual, with safety practices and hazards information, instructions for installing and maintaining the components of the Cary 3500 UV-Vis and troubleshooting information.

General Information and Safety Practices and Hazards

- The Cary UV Workstation Help and Learning Center provided with the Cary UV Workstation software which provide step-by-step instructions for installing selected accessories and programming applications, step-by-step instructions for frequently performed analyses and instructions for using any accessories you ordered.

Conventions

The following conventions have been used throughout the documentation:

- Menus, menu items, buttons and check boxes have been typed in bold. For example, 'click **OK**' and 'From the **Edit** menu, choose **Copy**'.
- ALL CAPITALS indicate keyboard commands. For example, 'Press ENTER' and 'Press SHIFT+F3'.

Notes and Tips

A Note is used to give advice or information.

A Tip is used to give practical hints to help you achieve the best possible performance from your instrument.

Verifying Safe State

The following general safety precautions must be observed during all phases of operation, maintenance and service of this instrument.

To ensure continued safety of the instrument after maintenance or service procedures verify the instrument is returned to a safe state for the user. This includes running performance checks to verify the instruments safety systems are functioning correctly. Check the general condition of the instrument during operation for wear or signs of corrosion that are likely to inhibit function or safety.

Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture, and intended use of the instrument. Agilent Technologies assumes no liability for the customer's failure to comply with these requirements.

Intended Use

Agilent products must only be used in the manner described in the Agilent product user guides. Any other use may result in damage to the product or personal injury. Agilent is not responsible for any damages caused, in whole or in part, by improper use of the products, unauthorized alterations, adjustments or modifications to the products, failure to comply with procedures in Agilent product user guides, or use of the products in violation of applicable laws, rules or regulations.

Lamp Module

The lamp is enclosed in a self-contained module. This module contains components operating at high voltages. To avoid electric shock, NEVER disassemble the module. Only replace the lamp module after turning off and disconnecting the engine from the mains power.

Modules, Covers and Panels

The only routinely accessed panel is the Cary UV spectrophotometer sample compartment to introduce samples.

The only other cover and panel that is customer accessible is the lamp module and is to be removed ONLY when changing the lamp module. Consult the Cary UV Help and Learning Center for instructions and safety information.

Any other panels or covers that are retained by screws on the spectrophotometer and accessories may be opened ONLY by Agilent service engineers.

Compressed gas cylinders

Compressed gas cylinders contain highly pressurized gas. If storage conditions are outside of the recommended supplier's safety codes, the cylinders can explode or rapidly release gas into the environment. This may result in injury or death.

General Information and Safety Practices and Hazards

- 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.
- Clearly mark cylinders so there is no doubt as to their contents.
- Use only approved regulators and connections.
- Use only connector tubing that is chromatographically clean and has a pressure rating significantly greater than the highest outlet pressure from the regulator.

Other Precautions

Use of the Cary UV-Vis 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.

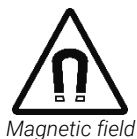
ALWAYS ensure that laboratory safety practices governing the use, handling and disposal of such materials are strictly observed. These safety practices should include the wearing of appropriate safety clothing and safety glasses.

Warning and Other Symbols

The following is a list of symbols that appear in conjunction with warnings on the spectrophotometer. 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.

General Information and Safety Practices and Hazards



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 appear on the instrument or accessories:



Mains power on



Mains power off



Fuse



Single phase alternating current



Protective earth ground terminal



Earth ground terminal



Frame or chassis ground terminal



Nitrogen purge input at the specified flow rate



Caution, disconnect all supplies, risk of electric shock

General Information and Safety Practices and Hazards

This page is intentionally left blank.

2

Specifications

Site Preparation Checklist	11
Measurement category	11
Pollution degree	12
Environmental conditions	12
Weights and dimensions	12
Electrical specifications	13
Computer requirements	14
Gas requirements	15

Unless otherwise specified, the content in this manual applies to both the Cary 3500 UV-Vis systems and all available modules and will be referred to as the Cary system.

Site Preparation Checklist

Upon purchasing your Cary system, you were sent the Site Preparation Checklist. You must have prepared your site according to the requirements listed in the checklist before installing and using the instrument. To obtain another copy of the site preparation checklist, go to the Agilent website at www.agilent.com and search for 'Cary 3500 Site Preparation Checklist'.

Measurement category

The Measurement category is IEC61010:I. Do not to use this equipment for measurements within measurement categories II, III and IV.

Specifications

Pollution degree

The pollution degree is IEC61010:2. Pollution degree '2' applies to a normal indoor atmosphere.

Environmental conditions

For detailed environmental conditions, see the Site Preparation Checklist.

The area should have no drafts, no corrosive fumes and no vibrations.

NOTE

For **optimum analytical performance**, it is recommended that the ambient temperature of the laboratory be between **20 and 25 °C** and be held constant to within ± 2 °C throughout the entire working day.

The area should have a dust-free, low humidity atmosphere. Air conditioning is recommended. The room should be temperature-controlled if your analyses are particularly sensitive.

Weights and dimensions

WARNING

Danger to hands and feet

Heavy weight. Always use two people to lift the Cary engine and module.



For detailed weight information, see the Site Preparation Checklist.

The workbench should be about 90 cm (36 in) high. Remember to provide space for the computer, monitor and printer.

Specifications

To avoid damage through spillage of solutions and samples being analyzed, the worktops should be covered with a material that is corrosion resistant and impervious to liquids.

Do not block any ventilation grills present on the computer. Consult the manuals supplied with your PC, monitor and printer/plotter for their specific ventilation requirements.

For models with Peltier control you must allow for the circulation of air for cooling. Allow for 20 cm (8 inches) of space on both sides and approximately 10 cm (4 inches) in the rear for electrical, gas connections and air flow.

For models that have Peltier temperature control, clear and unobstructed airflow of the inlet and outlet must be maintained. Ambient air must be allowed to enter the inlet and other heat sources such as exhausts, computers or other nearby Peltier modules must be avoided.

For models without Peltier control, you must allow for the circulation of air for cooling. Allow for 10 cm (4 inches) of space on both sides and approximately 10 cm (4 inches) in the rear for electrical connections and air flow.

Electrical specifications

For detailed power requirements see the Site Preparation Checklist.

The power cord and all other connections are located at the rear of the instrument or on the side of the module. The power switch is located on the rear of the engine and on the side panel of the module. Position the instrument for easy access to the disconnecting device.

Mains Supply

Power cords are provided based on the user's country requirements. Only the supplied power cord is to be used with this equipment.

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

WARNING**Shock Hazard**

Danger of electrocution. Good electrical grounding is essential to avoid potentially serious shock hazards. A 3-wire outlet with ground connection must be provided for the Cary system. Make certain that power outlets are earth-grounded at the grounding pin.

For safety reasons, a separate power outlet receptacle should be provided for each unit in the system. The use of extension cords or outlet adaptors is not recommended.

If necessary, replace the power cord only with a cord equivalent to the one specified in the Site Preparation Checklist.

Computer requirements

Cary UV systems are evaluated under Agilent's ISO9001 procedures using Cary UV Workstation software and a desktop computer. We strongly recommend a computer configuration that matches the system that was used during evaluations.

Table 1 Computer requirements

Component	Requirement
Processor	Intel i5, 3.0 GHz, 18MB cache
Memory	16GB RAM
Storage	512 GB Solid State Drive
Graphics	Intel® UHD Graphics 770
Communications	PCIe GbE Controller; 2nd Serial Port Adapter, 2 nd LAN NIC
Operating system	Microsoft Windows 10 and 11 Professional and Enterprise 64-bit

For Cary UV Workstation Plus and Cary UV Networked Workstation computer requirements see the System Requirements document provided with your software.

Locate the PC keyboard and mouse for ergonomically correct access.

Gas requirements

The Cary Compact and Multicell Peltier modules require the supply of a compressed gas (nitrogen or air) to prevent condensation of the sample compartment when temperatures below ambient are used. The supplied gas must be dry, oil and particle free and non-combustible.

Table 2 Purge gas purity requirements

Compressed gas	Description
Nitrogen	Water vapor <2570 ppm (dew point @ -10 °C). Acceptable sources are from bottled gas with industrial, medical or food grade nitrogen.
Air	Compressed Air: ISO 8573-1:2010 CLASS 1.3.1

Specifications

This page is intentionally left blank.

3 Installation

Use the following checklist to make sure you have the work area ready to install the Cary system.

Preparation requirement	Complete
All equipment is on site and has been checked for damage.	<input type="checkbox"/>
The work area meets the environmental requirements (see Page 12).	<input type="checkbox"/>
A suitable workbench is available (see Page 12).	<input type="checkbox"/>
Suitable electrical power supplies are available (see Page 13).	<input type="checkbox"/>
A computer that meets requirements is available (see Page 14).	<input type="checkbox"/>
A working Microsoft Windows operating system is installed on the computer. For instructions on installing this, refer to the documentation supplied with the operating system.	<input type="checkbox"/>

The Agilent Cary system is designed to be completely customer-installable. Instructions for setting up the system are included in the Cary UV-Vis Installation Video that is installed on the computer desktop during the software installation.

NOTE

Your Agilent representatives will install your Agilent Cary UV Workstation Plus or Cary UV Networked Workstation software including OpenLab Server or ECM 3.6 and hardware.

There are three main steps to install your Cary UV system:

- 1** Install the software – instructions are provided in the Cary UV software box.
- 2** Install the hardware including both the engine and module – instructions are provided in the installation video installed on your computer desktop.
- 3** Run the System Health tests to ensure the installation was successful – instructions are provided in the installation video installed on your computer desktop and in the Cary UV-Vis Help and Learning Center.

Once the installation is complete, open the Cary UV-Vis Help and Learning Center. Click “Learning” to access a self-guided familiarization of the hardware and software, including instructions on how to setup and run a method and how to analyze the data.

Installation

This page is intentionally left blank.

4

Introduction

Modular concept	19
Modules	19
Configurations	21
Temperature probes	22
Cary UV-Vis Flexible module accessories	22
Instrument overview	23
Indicator LED	25
Using the software	26
Compressed gas purging	26
Drain outlet	27

Modular concept

The Cary system introduces a modular concept to the Agilent Cary range of high-performance spectrophotometers. Modularity splits instrument function between light generation and light measurement. The Cary engine produces monochromatic light which is measured by the various Cary sample measurement modules. This allows for the tailored development of specific modules for applications while maximizing the flexibility of the system.

The Cary engine is based around Xenon flash lamp technology coupled with a compact dual out of plane monochromator. As with any spectrophotometer photometric performance is largely determined by the quality of the monochromator. With UV-Vis instruments, the monochromator design is aimed at providing a desired wavelength resolution while maintaining high light throughput and low stray light.

Modules

Cary modules couple with the engine to provide measurement functionality for target applications.

Introduction

The Multicell and Compact UV-Vis modules provide measurement solutions for cuvette-based applications. Both modules employ fiber optic technology to split and distribute light from the engine to each of their measurement channels. Both modules come as ambient or Peltier variants.

The Cary UV-Vis Flexible module is used for UV-Vis analysis with a range of liquid and solid sample holder accessories.

Cary UV-Vis Flexible module

This module provides the ability to easily add and remove accessories used with liquid and solid analysis. Each accessory sits on the Cary accessory plate designed to remove the need for alignment.

WARNING



Magnetic field

This product contains magnets which may affect the functioning of pacemakers, implanted heart defibrillators, or other active implanted medical devices (AIMD). Follow the AIMD manufacturer guidance when using this product.

Magnets produce a far-reaching, strong magnetic field. They could damage TVs and laptops, computer hard drives, credit and ATM cards, data storage media, mechanical watches, hearing aids and speakers. Keep magnets at least 145 mm away from devices and objects that could be damaged by strong magnetic fields.

Cary UV-Vis Flexible module accessories

The following accessories are available to use with the Flexible module:

- Standard 10 mm liquid cell holder
- Variable pathlength rectangular and cylindrical liquid cell holders that supports 20, 40, 50, and 100 mm pathlength cells
- Solid sample mounting kit
- Cary Utilities Panel – used to route tubing into the sample compartment

Cary Multicell Ambient and Peltier

This module provides thermal control of the 8 cuvette stations. Control is arranged in 4 zones each containing one channel pair (positions 1/2, 3/4, etc.).

For the Peltier version, the temperature of each zone can be varied over a range of -5 to 110 °C and can be controlled based on either the temperature of the cell

Introduction

holder (block) or the temperature of the sample by using the sample temperature probe accessory. The Multizone feature allows for individual control of each zone.

WARNING



Hot surface

The sample compartment and cuvettes may become extremely hot during instrument operation and remain hot for some time after the temperature has reduced. Allow the sample compartment and cuvettes to cool for at least five minutes before attempting to remove cuvettes.

NOTE

Laboratory conditions directly affect temperature control. Because this is an air-cooled system, when working at the lower temperature ranges, the laboratory conditions must meet the lower end of the [Environmental Specifications](#).

Compact Ambient and Peltier

The Compact UV-Vis module has 2 measurement channels: sample and reference/blank.

The Peltier version provides similar thermal control as Multicell Peltier in one channel pair (zone). Control may be based on either the cell holder (block) or the actual sample temperature by using the sample temperature probe accessory.

Configurations

The following configurations are available.

Table 3 Cary 3500 UV-Vis configurations

Product number	System
G9871A	Cary 3500 Compact UV-Vis System
G9862AA	Cary 3500 Compact Peltier UV-Vis
G9873A	Cary 3500 Multi UV-Vis System
G9866AA	Cary 3500 Multicell Peltier UV-Vis
G9875A	Cary 3500 Flexible UV Vis System
G9867AA	Cary 3500 Multizone Peltier UV-Vis

Product number	Module only
G9893A	Cary 3500 Compact Module
G9894A	Cary Compact Peltier UV-Vis Module
G9888A	Cary 3500 Multicell Module
G9889A	Cary Multicell Peltier UV-Vis Module
G9886A	Cary UV-Vis Flexible Module

Temperature probes

Cary Temperature Probes, G9892A, can be purchased separately to provide temperature control for each individual zone. Search for 'Temperature Probe' in the Cary UV-Vis Help and Learning Center for detailed information on use, maintenance, and installation.

Cary UV-Vis Flexible module accessories

Cell holder accessories

The cell holder supports the standard 10 mm liquid cell holder and variable pathlength rectangular and cylindrical liquid cell holders. Search for 'Install UV-Vis Cell Holder Accessories' in the Cary UV-Vis Help and Learning Center for detailed information on use and installation.

Solid Sample Mounting Kit

The Solid sample mounting kit, G9854A, enables you to measure solid samples of varying sizes in the spectrophotometer. The solid sample holder replaces the standard cell holder base and comes with three solid sample mounting plates of apertures: 1 mm, 5 mm and 10 mm. In addition, a magnetic thin film holder is provided. The solid sample mounting plates are mounted in the sample holder, which is fitted to optical rails, allowing you to position the sample anywhere in the beam, catering for a range of sample thicknesses. Search for 'Install Solid Sample Holder Accessories' in the Cary UV-Vis Help and Learning Center for detailed information on use and installation.

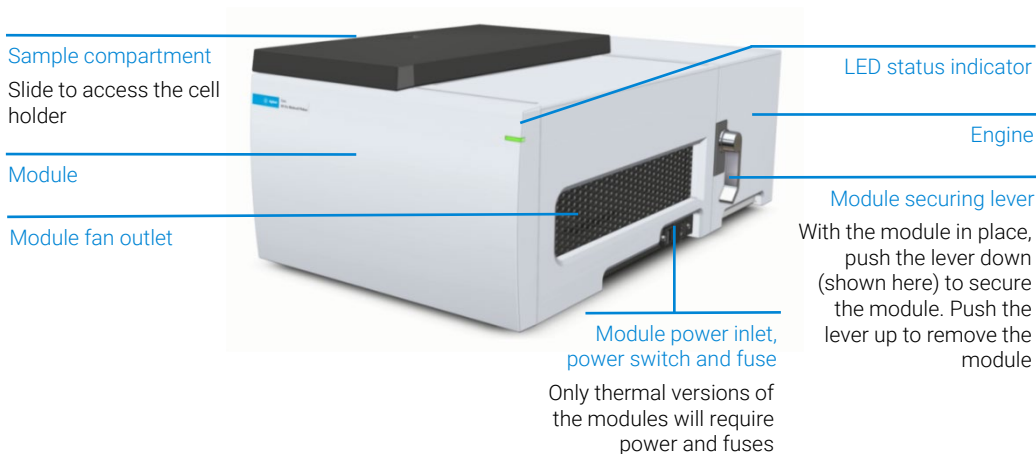
Cary Utilities Panel

The Cary Utilities Panel is used to route tubing into the sample compartment from accessories such as the Cary Sipper. Combine the panel and Sipper with the 10 mm, rectangular or cylindrical cells for a flow through system. Search for 'Install the Cary Utility Panel' in the Cary UV-Vis Help and Learning Center for detailed information on use and installation.

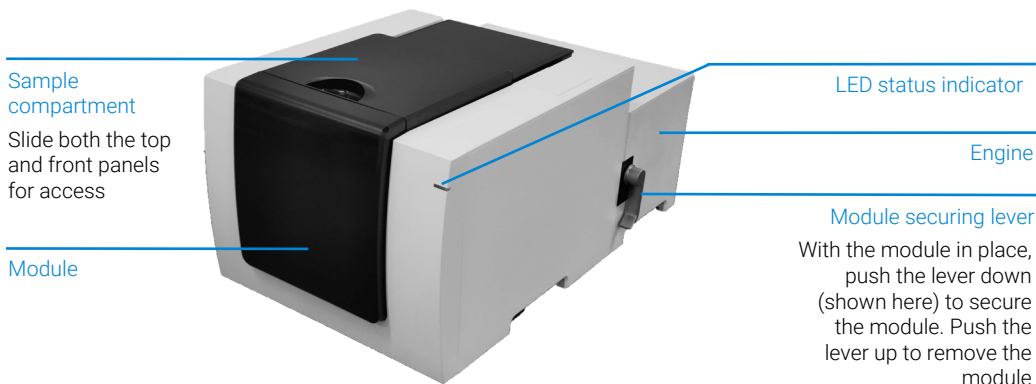
Instrument overview

Front and right side of the Cary engine and Multicell and Compact modules

The Multicell module and engine are shown here. Component locations are the same for the Compact module.

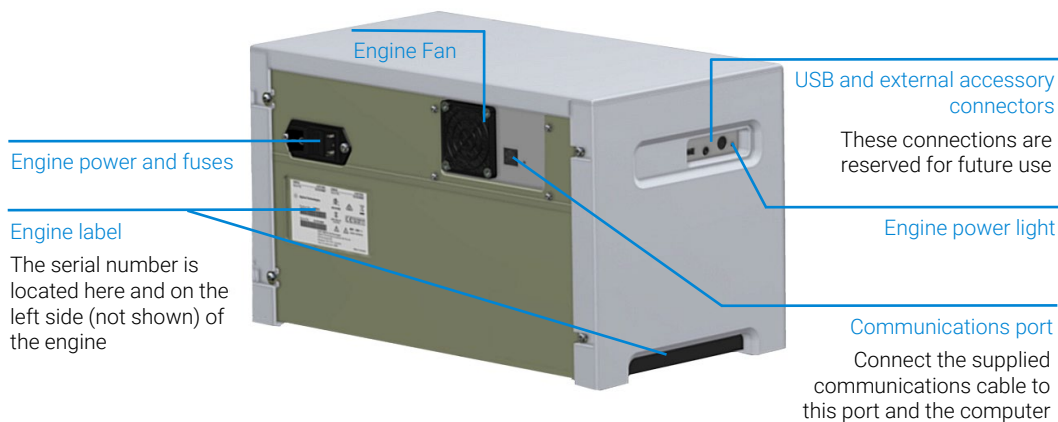


Front and right side of the Cary engine and Cary UV-Vis Flexible modules

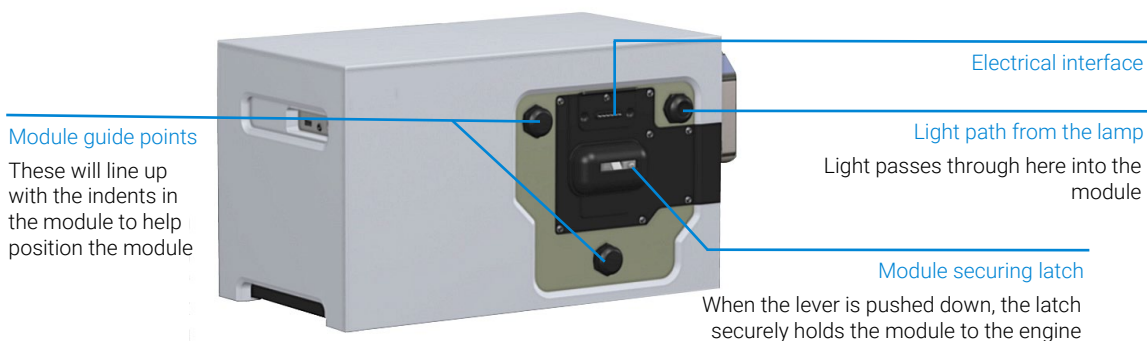


Introduction

Back of the engine



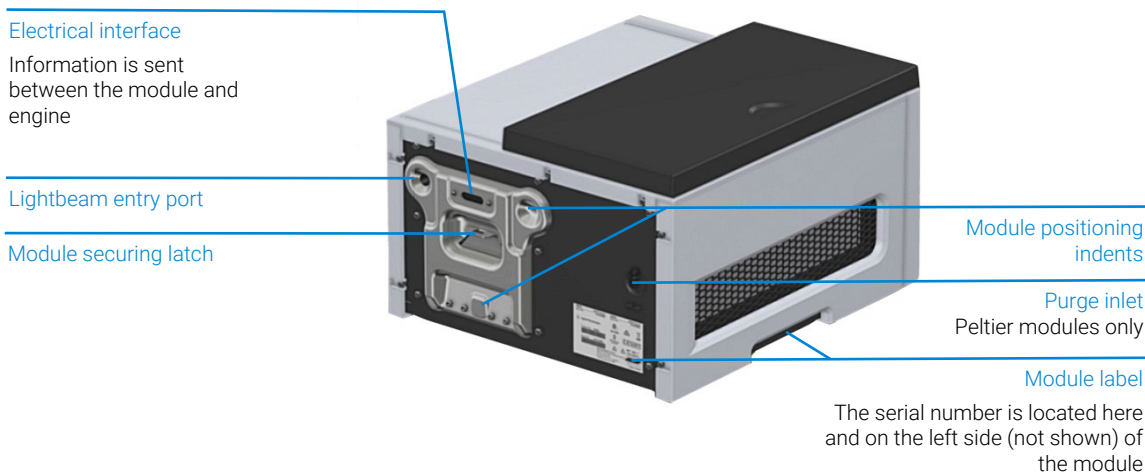
Front of the engine



Introduction

Back of the modules

The Multicell Peltier module is shown here. However, the components on the back of all modules are the same, regardless of module type, unless otherwise noted.



Indicator LED

The LED on the front of the module indicates the status of the system:

- Off – no power to the instrument
- Solid yellow – the engine is starting up, a calibration has started, a calibration error occurred, or the calibration was not completed.
- Slow flashing yellow – the lamp is flashing during calibration
- Fast flashing yellow – the instrument is waiting to perform a scan
- Red – an instrument error occurred, or the module is powering on
- Solid green – the instrument is ready
- Flashing green – the instrument is scanning
- The engine power LED, located on the left side of the engine, is green if power is on, and off if there is no power.

Using the software

For information on how to use the software, double-click the Cary UV Workstation Help and Learning Center icon installed on your computer desktop during the Cary UV Workstation software installation.

Compressed gas purging

The sample compartment of the Cary Peltier systems can be nitrogen or compressed air purged if the purge tubing is fitted. The gas supply should be attached to the inlet tube on the back of the module.

You may need to purge the instrument with nitrogen or compressed air under the following circumstances:

- When using temperatures lower than the ambient temperature to prevent condensation in the sample compartment
- When operational conditions are such that environmental vapors or solid particles could cause damage to optical surfaces.

Purge kit

The Cary 3500 UV-Vis Purge kit, G9891A, includes the 0-30 LPM flow meter and 5 meters of 6 mm OD/4 mm ID tubing. See the Cary UV Workstation Help and Learning Center for instructions on how to install the purge kit.

Table 4 Purge kit pressure requirements

Product number	Description	Maximum Pressure
G9891A	Cary 3500 UV-Vis Purge Kit	689 kPa (100 PSIG)

Pressure regulator and gauge

The operating pressure of the Agilent supplied gauge is up to a maximum of 689 kPa (100 PSIG). Always use an appropriate regulator and gauge to ensure that the purge gas supply is consistently maintained at the correct pressure. If a different flow meter is used, then the maximum operating temperature will be different. Refer to the manufacturer's advice.

Introduction

Supply tubing

Use clean, flexible plastic (polyvinyl chloride (PVC) or equivalent) 6 mm OD/4 mm ID tubing.

CAUTION

Never use rubber tubing, because it may be treated internally with talc that can be blown into the optical system.

CAUTION

Never connect the gas directly to the module. Always use a pressure regulator that meets the specifications listed in this manual.

Table 5 Purge gas flow rate requirements

Product number	Description	Flow rate (LPM)
G9862AA	Cary 3500 Compact Peltier UV-Vis	5
G9866AA	Cary 3500 Multicell Peltier UV-Vis	15
G9867AA	Cary 3500 Multizone Peltier UV-Vis	15
G9894A	Cary Compact Peltier UV-Vis Module	5
G9889A	Cary Multicell Peltier UV-Vis Module	15

NOTE

If samples are frequently changed, you may need to increase the flow rate through the sample compartment.

Drain outlet

In case of spills within the sample compartment, liquid will drain out of the drain outlet located under the module. For Cary Multicell and Compact modules, to avoid spilling liquid onto the benchtop, the Cary system needs a drain vessel and tubing that will fit over the 6 mm OD sized tubing of the drain outlet for disposal of any fluids spilled in sample compartment. You must supply drain tubing and vessel that is suitable for the solvent in use. The Cary Flexible module does not include a drain tube, however the drain hole will direct any accidental spills directly onto the bench.

For Cary Multicell and Compact modules, to install the drain tubing, slide the drain tubing over the drain outlet tubing on the module and then insert the free end of the tubing into the drain vessel.

A chemically inert container, not glass or of a narrow-necked style, to hold a minimum of 2 liters (4 pints) of waste must be provided by the user. It should be located below the sample compartment where it is protected by the bench and in full view of the operator.

Introduction

This page is intentionally left blank.

5 Troubleshooting, Maintenance and Spare Parts

Fuses	29
Spills	30
Spare Parts	31

All troubleshooting and maintenance procedures are in the Cary UV Help and Learning Center.

Double-click the Cary UV Help and Learning Center icon on the computer desktop, then search or use the table of contents to find the required information.

Any procedures not specifically mentioned in the Cary UV Help and Learning Center should be carried out only by Agilent field service engineers.

NOTE

The Help and Learning center refers only to maintenance procedures for the instrument. You should refer to your PC and printer manuals for their maintenance procedures, and to the Cary UV Help and Learning Center for the maintenance procedures for any accessories you ordered.

Fuses

The instrument contains a fuse assembly which is located at the back of the engine or side of the module next to the power cord and switch. To replace a fuse, disconnect the spectrophotometer from the power supply, and replace the blown fuse with one of the type and rating as indicated in the on the rear of the instrument. See the Cary UV Workstation Help and Learning Center for fuse replacement instructions.

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.

WARNING Electrical Shock and Fire Hazards



To prevent reduced safety protection or unwanted fusing, **ALWAYS** ensure that the code on the fuse cap matches the information printed next to the fuse holders.

Spills

Any spills should be wiped up immediately.

In Compact and Multicell modules only, any liquid spilled into the cuvette positions drains out through the drain tube located on the bottom of the module. It is recommended that an additional length of PTFE tubing is slid over the 6 mm OD drain tubing and inserted into a collection vessel to avoid liquid spilling onto the bench. The drain outlet tubing and vessel should be checked regularly for kinks in the tubing, blockages, or a full vessel. The Cary Flexible module does not include a drain tube, however the drain hole will direct any accidental spills directly onto the bench.

The exterior surfaces of the instrument should be kept clean. All cleaning should be done with a soft cloth. If necessary, this cloth can be dampened with water or a mild detergent. Do not use organic solvents or abrasive cleaning agents.

The RESPONSIBLE BODY shall ensure that:

- a) appropriate decontamination is carried out if hazardous material is spilled onto or into the equipment;
- b) no decontamination or cleaning agents are used which could cause a HAZARD as a result of a reaction with parts of the equipment or with material contained in it;
- c) the manufacturer or his agent is consulted if there is any doubt about the compatibility of decontamination or cleaning agents with parts of the equipment or with material contained in it.

Spare Parts

The following spare parts are available for use with your Cary 3500 UV-Vis instrument. Always use Agilent-supplied spare parts, unless otherwise indicated.

Table 6 Spare parts for Cary 3500 UV-Vis

Part	Part Number
Lamp module	G9864-67019
Temperature probe	G9889-60005
Magnetic stirrer bar PTFE star type	7418000400
Flow meter	K8003-60001
Purge tubing	3710043100

The following spare parts are available for use with your Cary UV-Vis Flexible module. Always use Agilent-supplied spare parts, unless otherwise indicated.

Table 7 Spare parts for Cary UV-Vis Flexible module

Part	Part Number
Cary utilities panel	G9886-67016
Cary accessory plate pin locators	G9886-67026
Cell holder set screw	G9886-67027
Cary accessory plate magnet	G9886-67000

Ordering details for other accessories are available on the Agilent Technologies website, www.agilent.com

This page is intentionally left blank.

In This Book

The manual describes the following:

- General Information and Safety Practices and Hazards
- Specifications
- Installation
- Introduction
- Troubleshooting, Maintenance and Spare Parts

www.agilent.com

© Agilent Technologies, Inc. 2023

Edition 4, 9/23



5994-0319EN

