

UV-VIS

VARIAN, INC.

Cary® 100/300 UV-Vis

SPECTROPHOTOMETERS



VARIAN

Unmatched quality and performance

Outstanding performance, flexibility, and ease of use are what you can expect from Varian's Cary® range of UV-Vis spectrophotometers. And, that's just the start.

With a Varian UV-Vis spectrophotometer, you get a top quality instrument that will meet your requirements and exceed your expectations today and into the future.

Whatever your lab's UV-Vis needs, Varian, Inc. has the instrument for you. Varian's Cary 100 is ideal for routine laboratory work, while our Cary 300 is the cost-effective, research-grade instrument of choice for laboratories doing analyses of biological or highly absorbing samples.



Industry leading Cary 100 and 300 design features

Varian's Cary 300 has a premonochromator, extending its range past 5.0 absorbance units (Abs). The Cary 100 has a working range past 3.5 Abs.

A phase locked wavelength drive prevents peak shifts and peak suppression at high scan speeds.

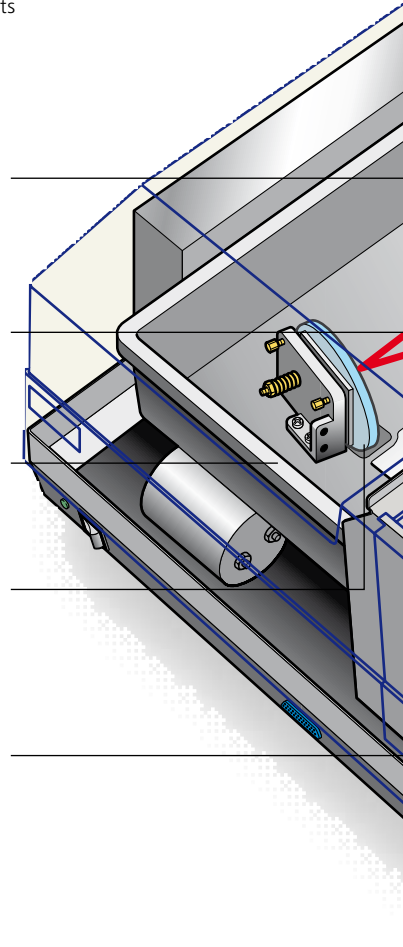
Variable slits provide optimum control over spectral resolution.

The sealed optics prevent exposure to corrosive environments.

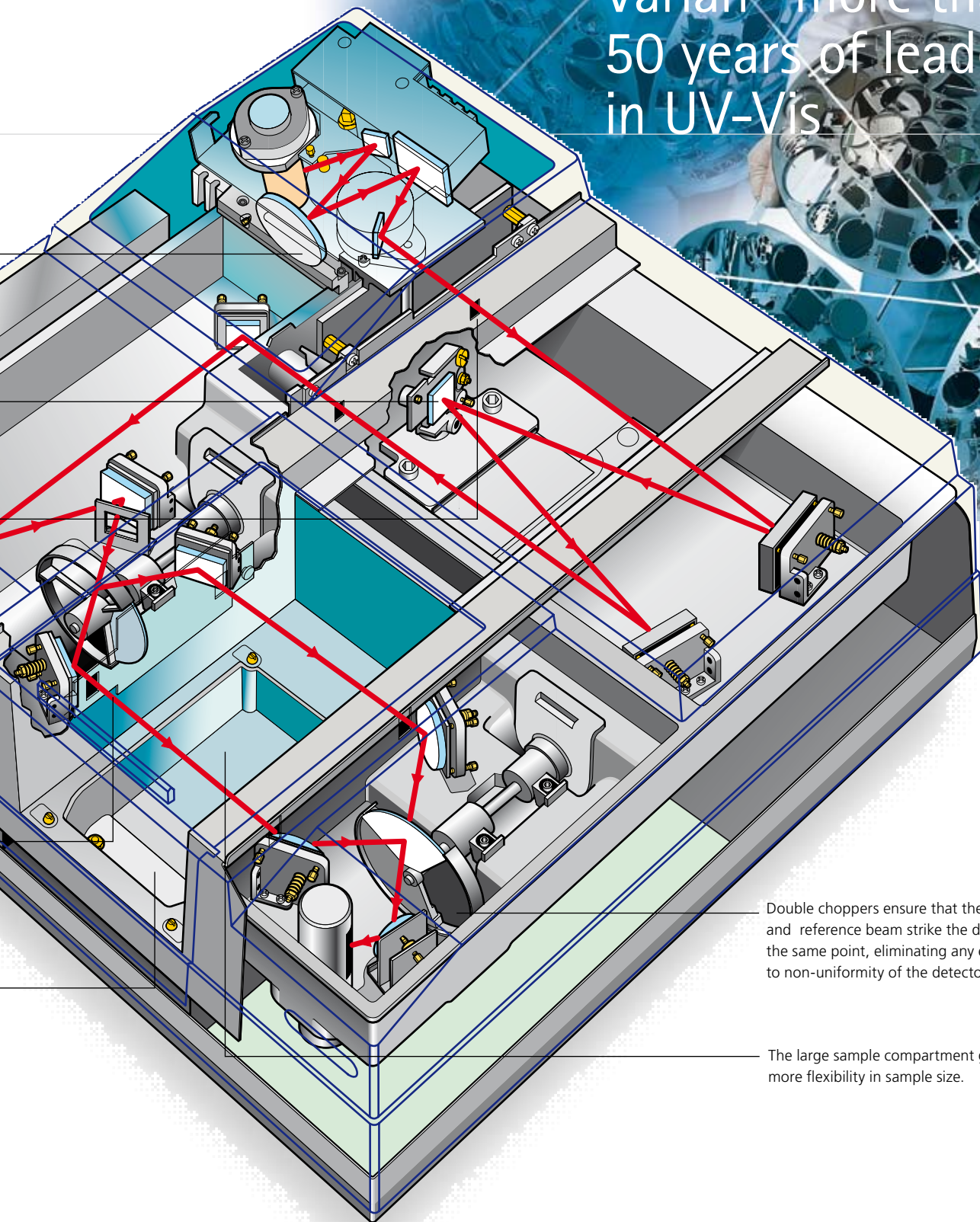
Quartz overcoating protects the optics from the environment and allows cleaning without damage to their reflective surface.

Although the Cary 100 and 300 both have a double beam design you can elect to operate them in single, double, or dual-single beam modes.

The Accessory Controller offers centralized accessory control, making it easier to service the instrument because of the single set of accessory electronics. In addition, the controller allows you to communicate with non-Varian accessories.



Varian—more than 50 years of leadership in UV-Vis



Double choppers ensure that the sample and reference beam strike the detector at the same point, eliminating any errors due to non-uniformity of the detector.

The large sample compartment gives you more flexibility in sample size.

Varian's Cary® 100/300 Spectrophotometers

Modular simplicity

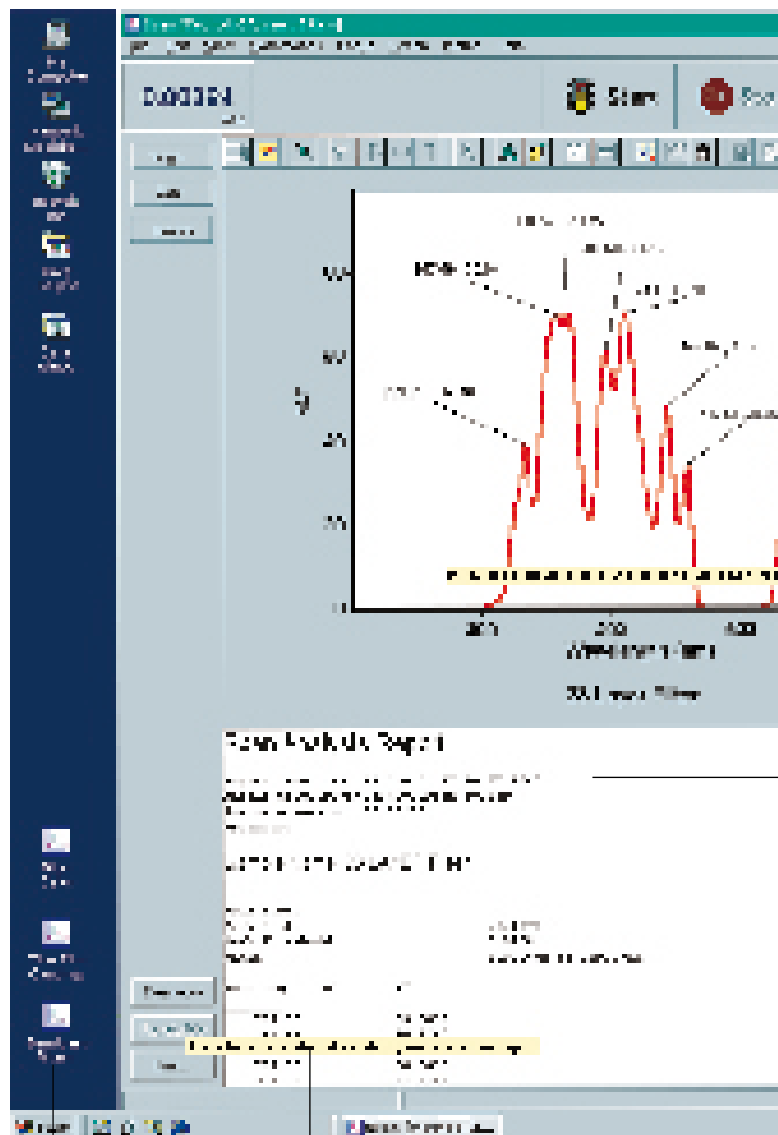
Varian's Cary 100 and Cary 300 spectrophotometers are controlled by the intuitive Cary WinUV software. With its modular design the Cary WinUV lets you buy only the functionality you need and makes it easy to upgrade, if your requirements change.

Three Varian Cary WinUV packages are available for the most common UV-Vis applications—Analysis, Bio, and Pharma.

Cary WinUV Analysis Package

The Cary Analysis package is available for both Varian's Cary 100 and 300 instruments. It consists of the following software modules:

- Scanning software with Maths module
- Simple Reads module
- Advanced Reads module
- Concentration module
- Kinetics module
- Scanning Kinetics module
- Instrument Validation module
- GLP module for file security
- Applications Development Language (ADL)



Auto load icons

Just click on the appropriate icon and the application and the correct method will load, ready for you to measure samples.

Hint text

Having trouble figuring out what a particular button or control does? Just hold the mouse pointer over the object until the hint text pops up with an explanation.

Quantitative analysis made easy



Single window operation

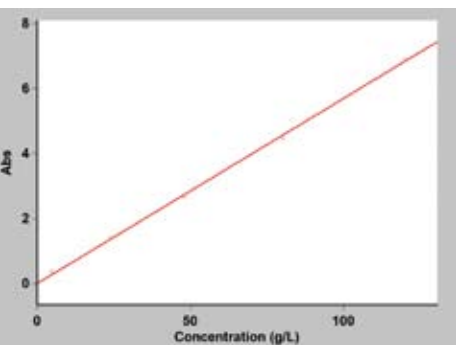
All controls can be accessed from this window, making operation quick and easy.

Graphics toolbar

The Cary WinUV software features a toolbar to give you quick access to the most common graphics operations, such as zooming, adding text, and changing the axes ranges.

Batch files

You can store all method and report parameters, calculations and graphical displays, and the actual data in one file. This saves time as you simply recall one file instead of several.



The Varian Cary 300's excellent linearity makes it ideal for measuring samples as high as 6 Abs accurately and with confidence.

What about concentration measurements?

Varian, Inc. offers excellent concentration measurement capabilities via our Cary Concentration application, which is supplied as standard with all Varian UV-Vis systems. As part of the Cary WinUV Analysis package, this software is ideal for quality control laboratories and for those who perform quantitative measurements, which require the occasional wavelength scan.

Up to 30 standards and 500 samples

Choose the level of precision you want in your results. With up to 30 standards and five replicates (multiple readings on the same aliquot) to use, you have maximum flexibility. And, built-in weight and volume correction gives you the final result without requiring additional calculations.

Flexible sample handling choices

If you deal with diverse samples, your productivity solution is Varian's Sample Preparation System (SPS). The SPS3 autosampler features:

- Fastest-ever sample to sample changes
- High sample capacity to enhance laboratory productivity
- Advanced rinse options to reduce carry-over
- Flexible configuration with economical laboratory racks for different tube types and probes
- Optional environmental enclosure for purging/fume extraction



The SPS3 autosampler—fast and accurate.

Varian UV-Vis: The Choice for Life Science Measurements



The Diffuse Reflectance Accessory is ideal for turbid solutions. The scattered light is gathered by the integrating sphere which minimizes the level of 'noise' in your data.



The Temperature Probe Accessory allows the measurement of the temperature inside the cuvette.

Why is a Varian UV-Vis the choice for life science measurements?

Besides offering best-in-class UV-Vis instruments for life science applications, Varian provides a comprehensive suite of powerful software applications.

Cary WinUV Bio and Pharma Packages

- Scanning software with Maths module
- Simple Reads module
- Advanced Reads module
- Concentration module (with built-in protein concentration methods)
- Kinetics module
- Enzyme Kinetics module
- Scanning Kinetics module
- RNA/DNA module
- Thermal denaturation and renaturation module
- Instrument Validate module
- Applications Development Language (ADL)

Plus, Varian's Cary WinUV Pharma package includes 21 CFR 11 software to help you achieve compliance with the U.S. FDA 21 CFR 11 ruling.

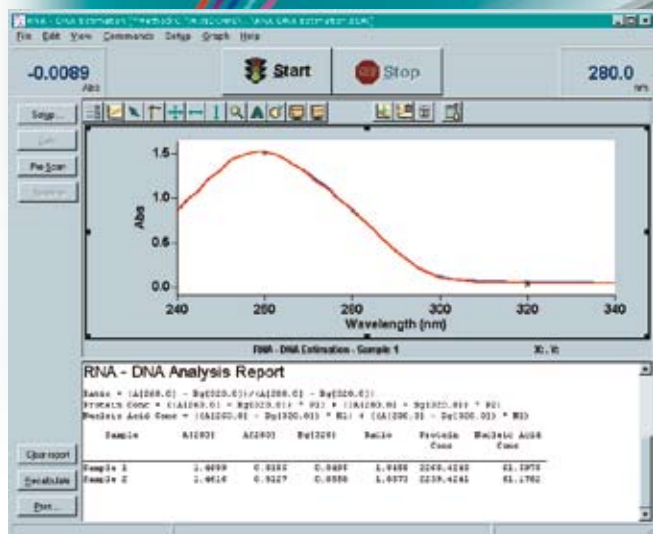
What other advances make Varian UV-Vis the life science leader?

The stirring mechanism of the Cary Peltier thermostatted cell holders relies on a rotating magnetic field, generated by an alternating electric current. This ensures reliable operation with no fluctuations in stirring speed and allows complete control over the speed of the stirring. Up to 12 cells can be stirred at a constant rate for extended periods of time.

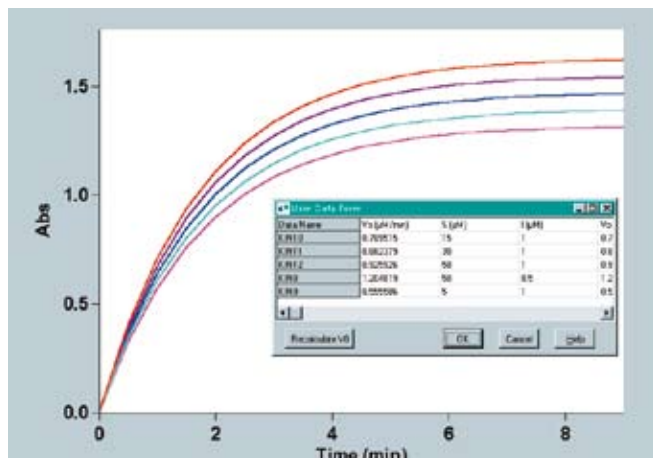
Excellent temperature control

The temperature control of the Peltier thermostatted cell holders (either the multicell or single cell versions) is extremely stable over time, with a typical variation being ± 0.05 °C. The cell to cell variation is also minimal with a maximum difference of 0.2 °C at 37 °C. The temperature inside the cuvette can be monitored with the Temperature Probe accessory.

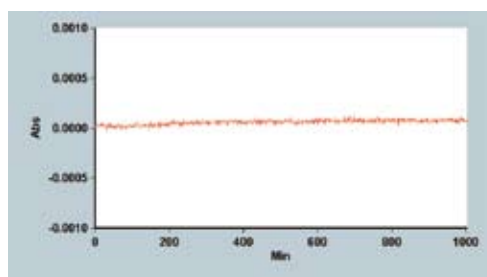
Performance and reliability



The RNA/DNA Estimation application has built-in methods that enable you to determine the purity and type of nucleic acid present in your sample. Warburg and Christian calculations are also available for nucleic acid and protein quantification.



Enter sample information such as the pH, ionic strength, etc., in the User Data Form. This information is then stored with the data file.



The optical design of the Varian UV-Vis instruments ensures excellent photometric stability. This means that any absorbance change you observe during a kinetics run is due only to the sample, not to drift in the instrument.

The best kinetics analysis available

What functionality does Varian offer for kinetics measurements?

The Cary WinUV Bio Package includes the Kinetics and Enzyme Kinetics modules designed specifically for the rigorous demands of kinetics data acquisition and interpretation. These applications are the ideal tools for determining reaction rates and enzyme activity.

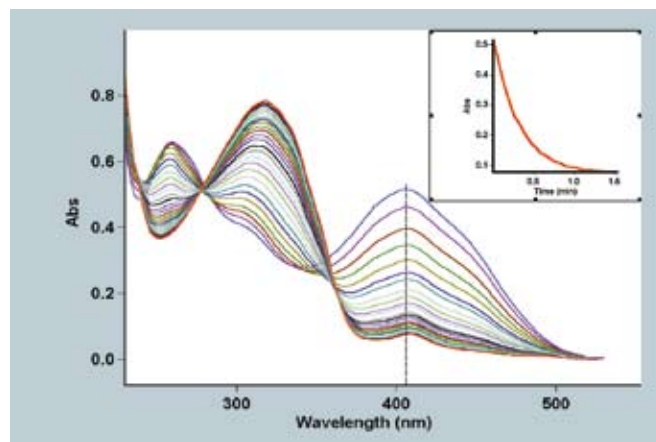
Can I vary the data collection rate?

You certainly can. With the Kinetics application, you can vary the data collection rate depending on the reaction. For example, if you have a reaction that starts off very fast and then slows, you may choose to collect data at different rates over the course of the reaction—fast at the start (up to 30 data points per second) and then slower during the later part of the reaction. To do this, you simply specify multiple data collection rates for different time segments of the assay.

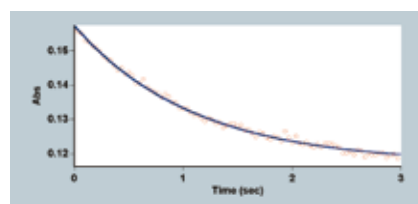
The Kinetics software also accommodates long, slow reactions and is capable of collecting data for up to 8000 minutes without the restriction of a limited number of data points in a file.

Need an extension?

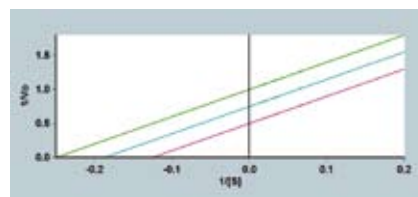
If you decide during an assay that you need to change the end time, you can extend the length of the assay without stopping the measurement. By using the Pause function prior to opening the sample compartment lid to add reagents, and using the Continue function once the lid is closed, you can also prevent spikes in your data.



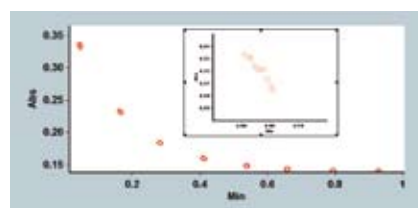
With a mouse-click you can obtain a kinetics curve from a series of repetitive curves. The insert shows the kinetics curve at 410 nm.



The Rapid Mix accessory allows you to automatically start an analysis in less than 1/10th of a second after the two components are mixed.



You can collect your kinetics data and perform enzyme kinetics calculations all in the same application. The following plots are available: Lineweaver-Burk, Eadie-Hofstee, Hanes-Woolf, Eadie-Scatchard, V₀ vs [S], Dixon 1/V₀ vs [I].



Why do 12 experiments when you can do 1? The Dwell Time option allows you to measure multiple data points per cell before moving to the next cell. Note how many data points were acquired by using the Dwell Time feature—the insert is a zoomed section showing data points collected over 0.015 min.

Unrivaled temperature control

Thermal denaturation/renaturation measurements

The Varian Cary Bio Package includes the Thermal application software. Designed for DNA thermal melting experiments, it offers a number of unique features.

Temperature control

The Temperature Controller accessory connects to the electrothermal multicell holder and allows temperature ramp rates as slow as 0.06 °C/min to be selected for high resolution DNA thermal melting experiments.

You can define up to 20 different temperature ramp rates and directions in the same data file. This ensures the highest possible accuracy for determining the thermal melting temperature by slowing the ramp rate and thus reducing the data interval close to the predicted thermal melt temperature. You can even specify the temperature you want your samples held at after the run has finished, eliminating the possibility of destroying them if they are held at high temperatures. For the ultimate in temperature control, use the Cary Temperature Probe accessory to obtain temperature data from directly inside cuvette.

Comprehensive built-in calculations

The Thermal application software allows you to calculate the thermal melt temperature by either the first derivative method or the alpha method. Calculations of thermodynamic parameters for ΔS , ΔH , K at T_m , ΔG and K at user defined temperatures are also available.

Collect Temperatures

Start °C: 15.0 Temperature Monitor: Probe 1

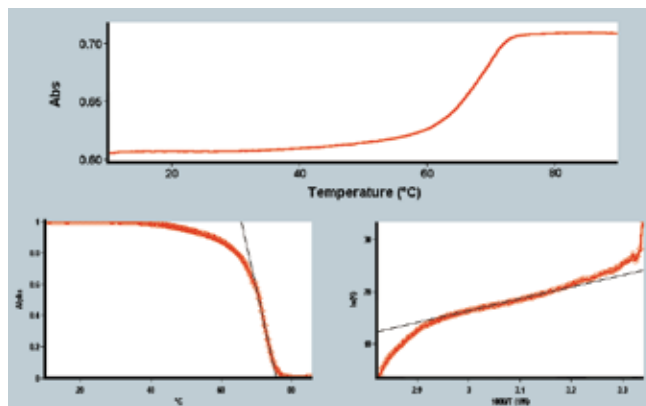
Return to °C: 25.0

Simple Collect Number of Stages: 4

Advanced collect

Stage	Collect Data	Data Interval	Rate (°C/min)	End (°C)	Hold (min)
1	<input type="checkbox"/>	2.00	2.00	95.00	2.00
2	<input type="checkbox"/>	2.00	2.00	15.00	2.00
3	<input checked="" type="checkbox"/>	0.20	0.50	95.00	5.00

You can select up to 20 thermal denaturation and renaturation ramps within one data file. This means you can do annealing and thermal melt experiments all in one vessel.



With the excellent signal to noise performance of the Varian UV-Vis instruments, you can detect very small absorbance changes in T_m curves with ease.



Performance enhancing accessories

As your needs change, so can the capabilities of your Varian UV-Vis spectrophotometer. Buy the accessories you need today, or in the future. The Varian Cary spectrophotometers are designed to make full use of these powerful accessories, and allow for fast, easy upgrades.



Depolarizer and Polarizer.



Brewster Angle Holder.



Fixed Angle Relative Specular Reflectance Accessories. Available in 12.5°, 30°, 45°, 60°.



Cary 100/300 Specular Reflectance Accessory.



Labsphere DRA-CA-301 Diffuse Reflectance Accessory.



Rear Beam Attenuator.



6x6 Multicell Holder-Peltier thermostattable.



Cary 100/300 8x6 Multicell Holder ambient/water.



Total Fluorescence Accessory.



Solid Sample Holders.



Temperature Controller.



PCB-150 Peltier Water Bath.



Peltier 1x1 Thermostatted Cell Holder.



Cary 100/300 Extended Sample Compartment.



Cell Holders.



Temperature Probe.



Routine Sampler Accessory-Peltier.



Sipper.



Double Aperture Kit.



Instrument Testing Kits.



Rapid Mix Accessory.



Sample Transport fitted with Film Holder.



Cary 100/300 Fibre Optic Coupler.

Making compliance and validation easy

What about testing the performance of a Varian UV-Vis instrument?

Varian's Cary® instruments are equipped with a range of tools to make instrument testing easy. Supplied with each package is the Validate software module, which automates the testing of the instrument hardware.

Compliance and validation

If you need to validate your Varian UV-Vis system, validation documentation is available for instruments, software and accessories. Varian, Inc. service organizations around the world support validation of our instruments in a number of ways, including training programs, support agreements, hotlines, teliagnostics, service contracts, and certification. Check with your local Varian, Inc. office for an overview of the validation documentation and services that Varian, Inc. provides.

Eliminate compliance headaches

Optional 21 CFR 11 software, included in the Cary Pharma software package, helps you achieve compliance with the U.S. FDA 21 CFR 11 ruling, and provides:

- Multi-level access with specific privileges for each user
- Secure electronic records, full data audit trails, and three levels of electronic signing

Can I get my instrument recertified?

At installation, your instrument will be checked against specifications. As part of your ongoing validation program, you may want to have your instrument recertified to ensure that it is still meeting those specifications. Varian offers a recertification service that involves an on-site visit from a Varian engineer who is equipped with various traceable standards and other test equipment. This means that you don't have to purchase and maintain expensive standard materials, and if the instrument needs adjustment, the engineer will fix it for you.

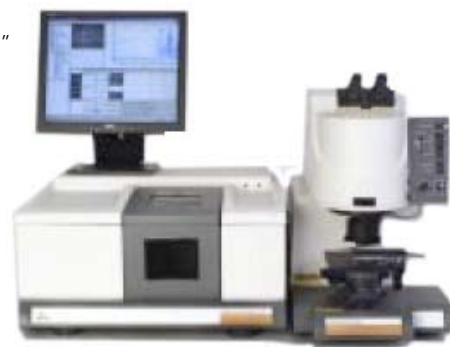
The complete solution...

Varian, Inc. provides the answers that scientists need through a growing number of analytical solutions, including Fluorescence, FT-IR, UV-Vis-NIR, NMR, HPLC, LC/MS, and more.

These products deliver the highest level of sensitivity and structural and compositional information – allowing you to do more than ever before. What's more, with Varian's full range of sample prep products, consumables, software solutions, and industry-leading support and training, you get the complete solution you need and want.

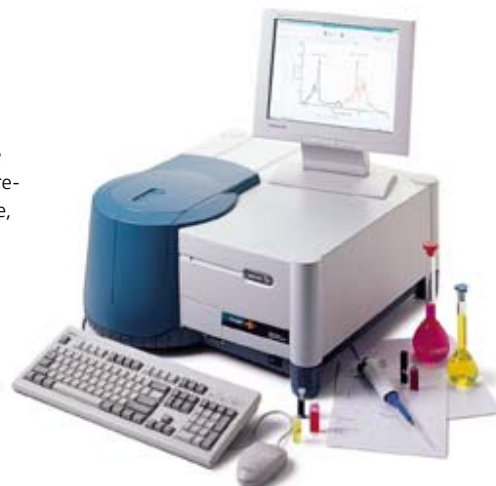
Varian FastImageIR™.

The most affordable "true" FT-IR Imaging system on the market, providing unmatched high spatial resolution, speed and ease-of-use.



Varian Cary Eclipse.

With xenon flash lamp technology, a wide range of accessories, and feature-packed, intuitive software, this high performance fluorescence spectrophotometer provides solutions to meet your most challenging molecular spectroscopy needs.



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Cary® 100/300 UV-Vis

SPECTROPHOTOMETERS

Varian, Inc. is committed to a process of continuous improvement, driving us to exceed customer expectations in everything we do.

Varian, Inc. – serving markets worldwide

Biosciences

Pharmaceuticals

Clinical Research and Forensics

Food and Agriculture

Chemical Analysis

Environmental

Fuels and Energy

Material Sciences



VARIAN GC • LC • MS • AA • ICP • UV-Vis-NIR • FT-IR • Raman • Fluorescence • Dissolution • NMR • MRI • Consumable Products • Data Systems

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