

UV-VIS

VARIAN, INC.

# Cary® 50 UV-Vis

SPECTROPHOTOMETERS



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

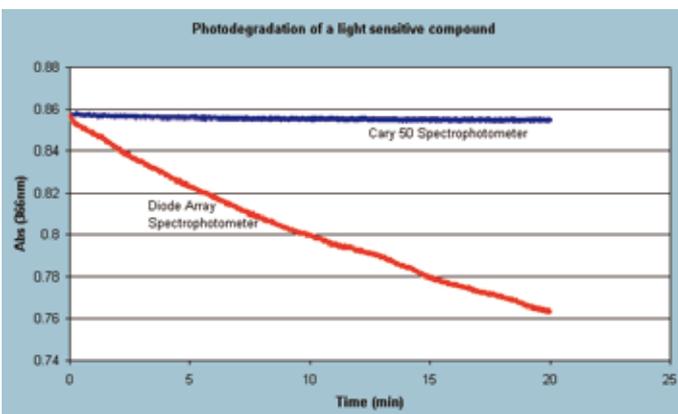
 Agilent Technologies

## As fast as a diode array, but better performance

By incorporating a Xenon flash lamp, Varian's Cary® 50\* offers many key advantages over traditional UV-Vis spectrophotometers:

- The maximum scan rate is 24,000 nanometers (nm) per minute. That means you can scan the whole wavelength range of 190–1100 nm in less than 3 seconds.
- With a data collection rate of an impressive 80 points per second, you'll have all the information you need about your kinetics assay.
- The Varian Cary 50 can measure samples up to 3 Abs so you won't have to dilute as often.
- The Xenon lamp has a very long lifetime— $3 \times 10^9$  flashes actually. So even if you measure continuously, seven days a week, the lamp will last at least a year. With less frequent use, you may never need to change it. That makes the Varian Cary 50 inexpensive to run.
- The Varian Cary 50's super-concentrated beam makes it ideal for fibre optic work, offering excellent coupling efficiency and light throughput. And, its room-light immunity makes shielding of a fibre optic probe unnecessary.

\*US Patent 6,002,477

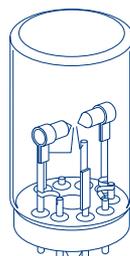
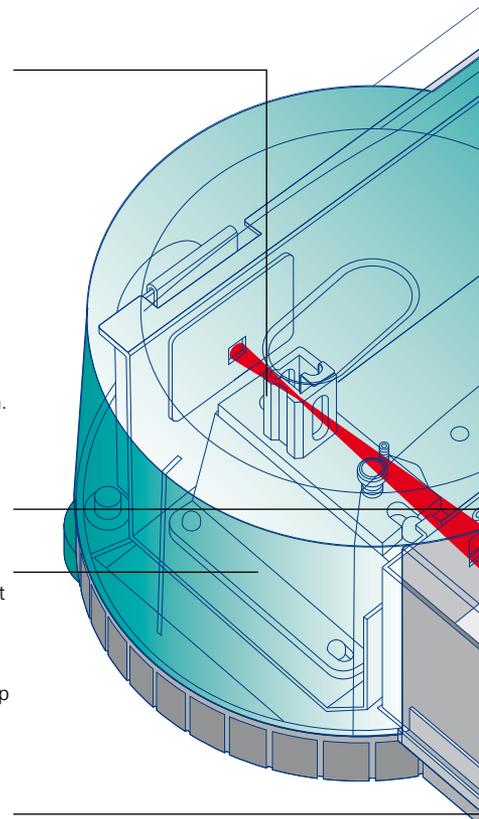


Excellent noise performance is achieved with the highly focussed and very intense light beam, even when using small aperture microcells.

Maintain peak integrity at every scan speed through split-beam, simultaneous reference correction. And because the Xenon lamp is very intense, splitting the beam will not effect the excellent noise performance.

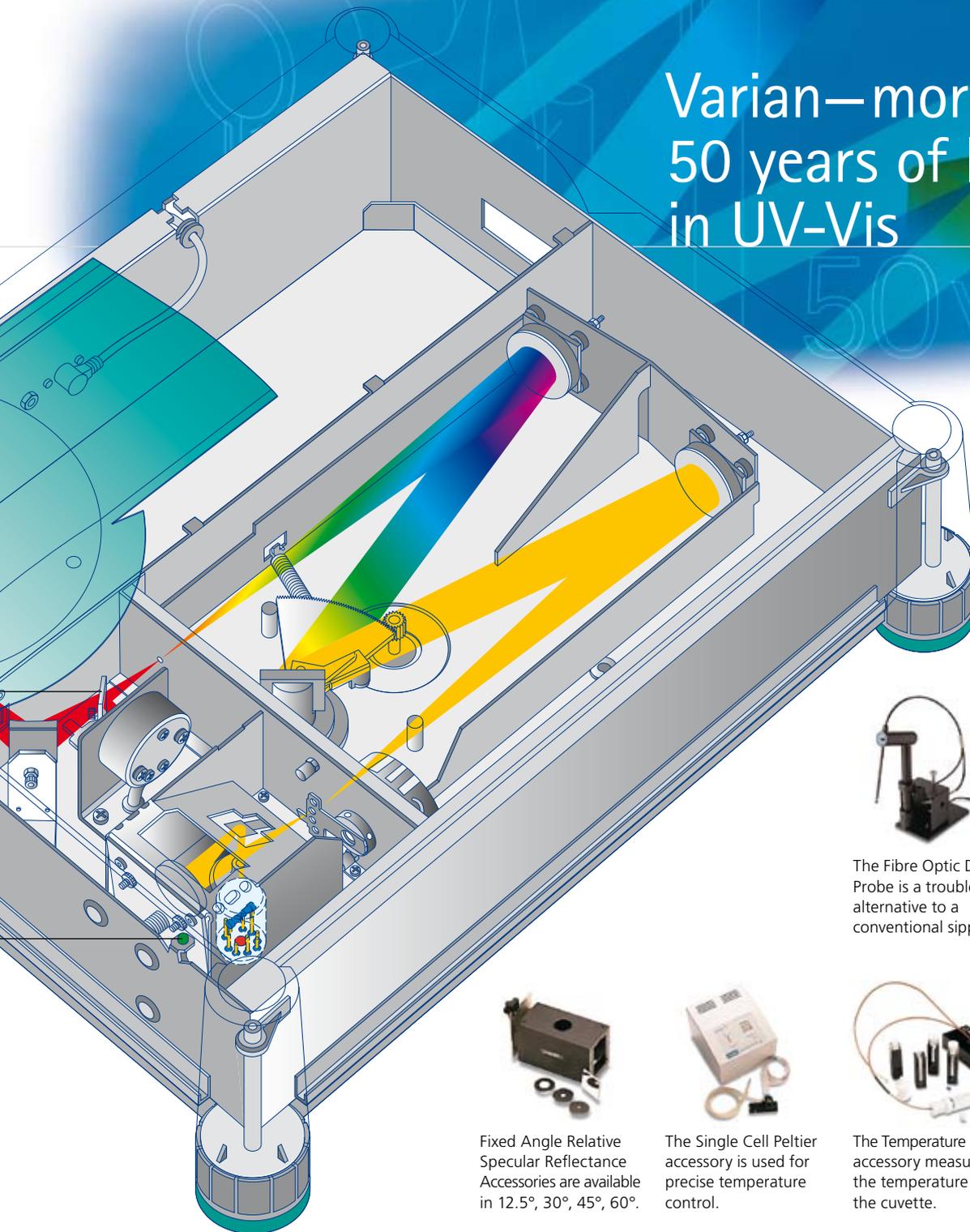
If your sample doesn't fit in the sample compartment, or if it's just easier to work with an open sample compartment, then leave the lid off. Thanks to the unique properties of the Xenon flash lamp the Cary 50 is not effected by room light.

Cut operating costs. Because the Cary 50 gets its power from the PC it is only on when the PC is switched on.



Eliminate degradation of photosensitive samples. A diode array continuously exposes the sample to the entire wavelength range while the Xenon lamp only flashes when acquiring a data point and only exposes the sample to a very narrow wavelength range for each data point.

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



The Microplate Reader can be used to analyze up to 384 samples in microlitre volumes, at precisely controlled temperatures.



The Fibre Optic Dip Probe is a trouble-free alternative to a conventional sipper.



A range of fibre optic probes are available for Abs, %T, and %R measurements.



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



The Single Cell Peltier accessory is used for precise temperature control.



The Temperature Probe accessory measures the temperature inside the cuvette.



The Multicell Holder houses up to 18 cells and can be connected to a water bath.



The Sipper accessory delivers liquid samples to a flow cell.



The Solid Sample Holders are compatible with a range of sample types.



The Rapid Mix accessory is ideal for stopped flow kinetics measurements.



The PCB-150 water bath connects to any of the water-thermostatted cell holders.



A range of cell holders are compatible with most cell types.



The Fibre Optic Coupler allows you to connect a fibre optic probe to suit your application.

Varian's Cary® 50 Spectrophotometers

# Modular simplicity

Varian's Cary 50 is controlled by the innovative Cary WinUV software. With its modular design, Cary WinUV delivers the specific functionality you need today and makes it easy to upgrade whenever your requirements change.

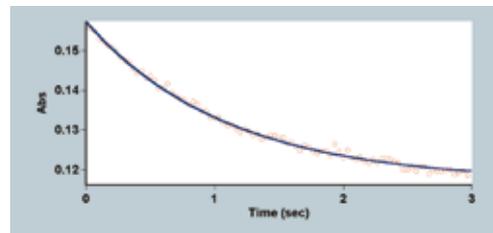
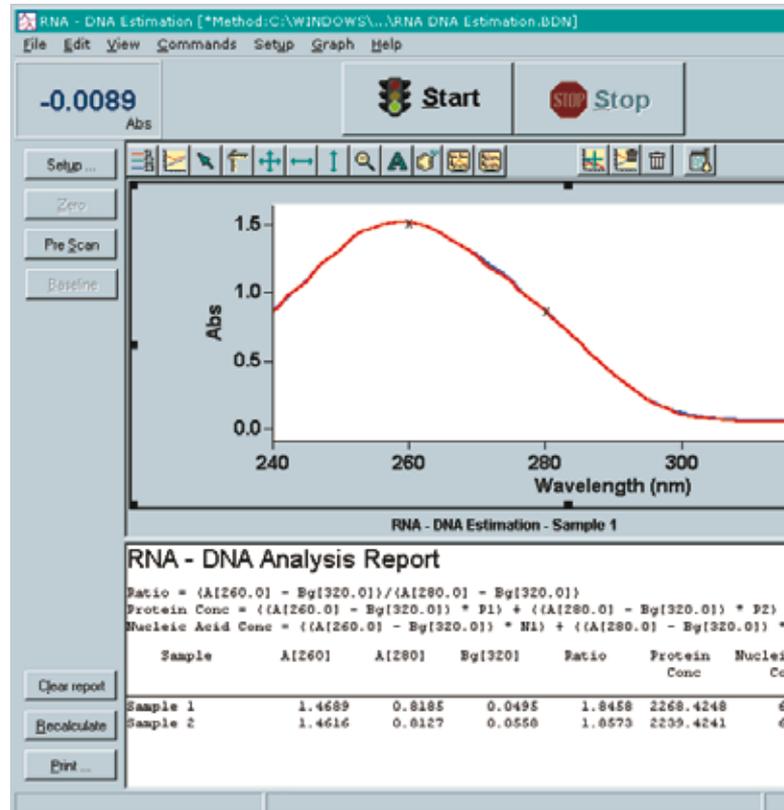
Three Varian Cary WinUV packages are available for the most common UV-Vis applications—Analysis, Bio, and Pharma. These intuitive packages consist of the following software modules:

- Scanning software with Maths module
- Simple Reads module
- Advanced Reads module
- Concentration module (with built-in protein concentration methods)
- Kinetics module
- Scanning Kinetics module
- Instrument Validation module
- GLP module for file security
- Applications Development Language (ADL)
- Enzyme Kinetics module<sup>1</sup>
- RNA/DNA module<sup>1</sup>
- 21 CFR 11 module<sup>2</sup>

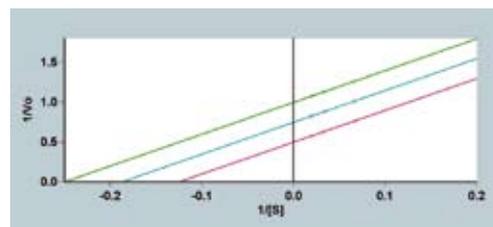
These packages are ideal for multi-user, multi-discipline laboratories.

<sup>1</sup> Only included in Bio and Pharma software packages.

<sup>2</sup> Only included in Pharma software package.

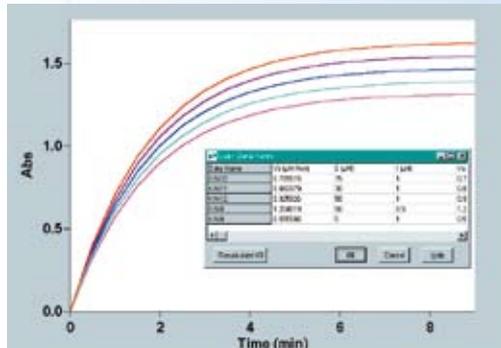
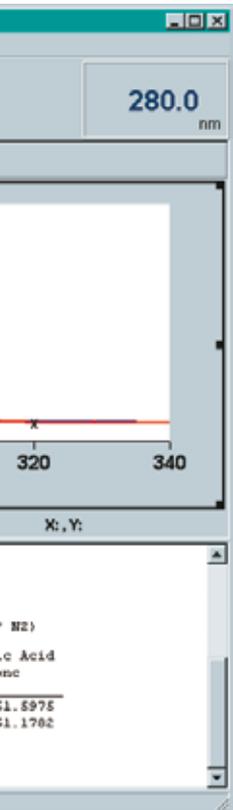


The Rapid Mix accessory allows you to automatically start an analysis in less than 1/10th of a second after the two components are mixed.

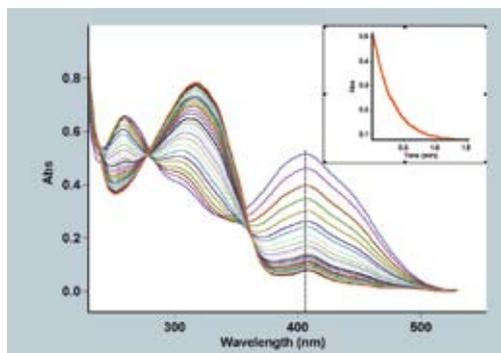


You can collect all your kinetics data and perform enzyme kinetics calculations in the same application. The following plots are available: Lineweaver-Burk, Eadie-Hofstee, Hanes-Woolf, Eadie-Scatchard, V<sub>0</sub> vs [S], Dixon 1/V<sub>0</sub> vs [I].

# Leading instruments for Life Science



Enter substrate and inhibitor concentrations into a User Data Form for  $V_0$  determinations.



The Cary 50's extremely fast scan speed means that you can repetitively scan your kinetics sample many times during the reaction. Shown are 30 scans collected over 1 minute. The insert shows the kinetics curve at 410 nm.

## Focusing on data quality

The light beam in the Cary 50 sample compartment is very narrowly focused and extremely intense. This design ensures that approximately 80% of the beam passes through the small aperture of a 40  $\mu$ L microcell. With this much energy available, your data will be smooth and much more precise.

## 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 80 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 for long, slow reactions and is capable of collecting data for up to 8000 minutes.

## Need an extension?

No problem. 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.

The RNA/DNA module offers pre-programmed parameters for routine analyses such as protein and nucleic acid estimation.

# Quantitative analysis made easy

## What about concentration measurements?

Supplied as standard, the concentration measurements available with the Varian Cary® 50 make it ideal for quality control laboratories and for those who perform quantitative measurements with a requirement for the occasional wavelength scan.

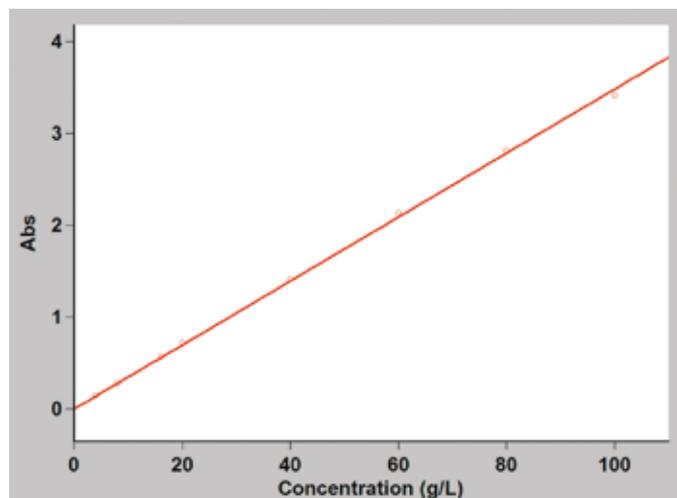
## Up to 30 standards

You can choose the level of precision you want in your results by making use of up to 30 standards and up to five replicates (multiple readings on the same aliquot). 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 Varian Cary 50's excellent linearity makes it ideal for measuring samples up to 3.5 Abs accurately and with confidence.



The SPS3 autosampler—fast and accurate

# Performance and reliability

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

Varian's Cary 50 is equipped with a range of tools to make instrument testing easy. Validation software is supplied with each package 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, telediagnosics, 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.

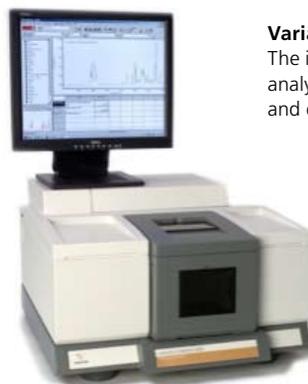
## Can I get my instrument recertified?

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, Inc. offers a recertification service, which 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.

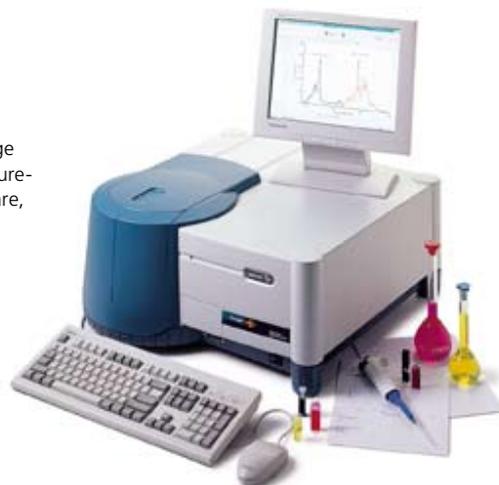


### Varian 2000 FT-IR.

The instrument of choice for mid-IR analysis where reliability, performance, and ease-of-use are essential.

### 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® 50 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



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