



# Accessories

For the Cary 60 UV-Vis spectrophotometer

## The flexible Cary 60 UV-Vis

A wide range of accessories is available for the Cary 60 UV-Vis spectrophotometer, for both solid and liquid samples. These accessories extend the capabilities of the instrument, giving you confidence that you can measure a diverse range of real world sample types.

## Multicell holders and thermal (heating) accessories



### 18 cell multicell changer

This accessory can automate the measurement of up to 18 cells (cuvettes), moving each cuvette into the measurement position in turn. The PCB-1500 circulating water bath or other circulating water bath accessories can be used to control the temperature of samples. Sample temperatures can be monitored with an in-cuvette temperature probe.



### Single cell holder, Peltier thermostatted

Provides static, Peltier-controlled fixed temperature of a single cuvette. Ideal for single cell kinetics measurements. Electromagnetic stirring helps to ensure uniform temperature in the sample. The Cary temperature probe accessory can be used to monitor the temperature of the sample. For the use of microcells, the water thermostatted single cell holder is recommended.

### Single cell holder, water thermostatted

Standard cuvette holder with water jacket that allows control of the temperature of the sample. Ideal for single cuvette kinetics measurements. The PCB-1500 circulating water bath (or other circulating water bath) is used to pump water through the cell holder. This cell holder can be used with microcells. If stirring is required, the Peltier thermostatted single cell holder is recommended.

### Cylindrical cell holder, water thermostatted

Provides temperature control for long pathlength cylindrical cells. Ideal for reliable and reproducible temperature-controlled measurements of low concentration samples. The PCB-1500 circulating water bath (or other circulating water bath) is used to pump water through the cell holder.

### Temperature probe

Fitted with two probes, this accessory accurately measures temperature inside liquid samples in cuvettes.

### PCB-1500 circulating water bath

This general-purpose water bath can be used to control the temperature in Cary thermostatted accessories between ambient (room temperature) and 60 °C.

### Rapid mix and stopped-flow accessories

Two different accessories are available for measuring rapid reactions.

The RX2000 rapid mix accessory mixes reagents for stopped-flow kinetics experiments. A dead time of 6 ms, makes it possible to measure first-order reaction rates over 200 s<sup>-1</sup>. The syringes, mounted on a rigid drive platform, stop the flow precisely and instantaneously. Reagents travel in this inert sample circuit through an umbilical cord to the flow cell containing a high efficiency T-format mixer.

The SFA-20 is another stopped-flow accessory, used to mix reagents for short lived reactions. With a dead time of less than 8 ms, it allows reaction rates up to 100 s<sup>-1</sup> to be measured. The SFA-20 is available in versions for microvolume mixing or mixing of more than two reagents.



Temperature probe



RX2000 rapid mix accessory

## Fiber optics



The Cary 60 fiber optic coupler or the Cary 60 dip probe coupler convert the Cary 60 UV-Vis into a remote fiber optic measurement system. The room light immunity of the Cary 60 UV-Vis enables remote measurements outside the sample compartment. Fiber-optic probes quickly and easily plug into the SMA connectors on the couplers. [Agilent offers a range of fiber optic probes](#) such as dip probes, reflection probes, and transmission probes. Other fiber optic accessories can also be connected to the Cary 60 UV-Vis via the standard SMA connectors.

### Fiber optic coupler

The Cary 60 fiber optic coupler guides the light from the Cary 60 optics to SMA connectors at the front of the instrument. Suitable for use with a range of fiber-optic probes and solid sample measuring accessories such as the Cary 60 remote diffuse reflectance accessory.

### Fiber optic dip probe coupler

Designed to be used with a range of different dip probes, this accessory features a mounting arm that holds a probe in position and starts the measurement with a button press. This setup makes repetitive analyses quick and easy.

### Fiber optic probes

Many fiber-optic probes are available for use with the Cary 60 fiber optic coupler and the Cary 60 dip probe coupler. These probes are made from stainless steel, quartz, or Torlon to be used with different sample media and for different applications. For example, quartz probes are ideal for strongly acidic samples, and Torlon probes are useful for applications that require a nonmetallic probe. Probes are available in a range of diameters, lengths, and pathlengths. Some have removable tips, which allow you to change the pathlength by changing tips.

### Fiber optic reflection probe

Designed to measure specular (mirror-like) reflection off a sample surface. This probe connects to the Cary 60 fiber optic coupler and includes a sample holder. As the probe is outside the sample compartment, very large samples can be measured.



Fiber optic coupler



Fiber optic dip probe coupler



Fiber optic dip probes



## Transmission probe

This accessory uses two adjustable fibers mounted in a U-shaped block. The sample is positioned in the gap between the two fibers to measure transmission through thin (less than 5 mm) solid samples, such as sheets of glass or plastic.

## Cary 60 remote diffuse reflectance accessory

This accessory has been designed to measure diffuse (scattered) reflection off solid and powdered samples. The accessory is attached to the Cary 60 fiber optic coupler, allowing the remote measurement of samples that would not fit into the sample compartment. An inbuilt camera helps locate the measurement area of the sample.



Cary 60 remote diffuse reflectance accessory

## Accessories for solid samples



## Solid sample holder

Designed to hold solid samples upright in the Cary 60 UV-Vis sample compartment for transmission measurements. Various sample slides and supports help to accommodate samples of different shapes and sizes (down to 5 mm in diameter). The holder slides along rails to position samples of different thicknesses in the center of the sample compartment.

## Fixed angle specular reflectance accessory

Sliding into the solid sample holder, this accessory is suitable for measuring the specular (mirror-like) reflection off a sample surface. Available in three different configurations: Fixed angles of 30°, 45°, or 60°. The sample is placed face-down on top of the accessory for measurement.

## Variable angle transmission holder

This accessory fits onto the solid sample holder, allowing transmission measurements of thin solid samples at differing angles of incidence. Beam deflection (refraction) through thin samples is not as significant as thick samples so beam translation compensation is typically not required.

## Polarizer and depolarizer accessories

Several polarizer and depolarizer accessories are available to control the plane polarization of the light beam in the Cary 60 UV-Vis. These polarizers/depolarizers are mounted on the solid sample holder and can be placed in series on the mounting rails, together with the sample.



Solid sample holder



Fixed angle specular reflectance accessory

## Cuvette holders and specialized cuvettes



### Standard cell holder

The standard cell holder provided with the Cary 60 UV-Vis instrument. The cell holder can be used with 10 x10 mm cuvettes (full and microcells) to analyze liquid samples—the most common type of UV-Vis analysis. One is supplied (with mounting base) with the Cary 60 UV-Vis instrument, but they can be ordered separately (one is shown in the TrayCell image, following).

### Long pathlength rectangular cell holder

Holds 20, 50, and 100 mm rectangular cells and rectangular flow cells.

### Test tube holder

Designed to hold a single 16 mm diameter test tube upright, in the center of the Cary 60 UV-Vis sample compartment. Thanks to the room light immunity of the Cary 60 UV-Vis, measurements can be performed with the sample compartment open to accommodate tubes of different heights.

### Cylindrical cell holder

Designed to hold our 19 mm diameter cylindrical cells of between 10 to 100 mm pathlength.

### Variable pathlength rectangular cell holders

These cell holders slide onto the Solid Sample Holder. Available in two versions:

- For rectangular cells of 5, 10, 20, 30, 40, or 50 mm pathlength
- For rectangular cells of 5, 10, 20, 30, 40, 50, or 100 mm pathlength

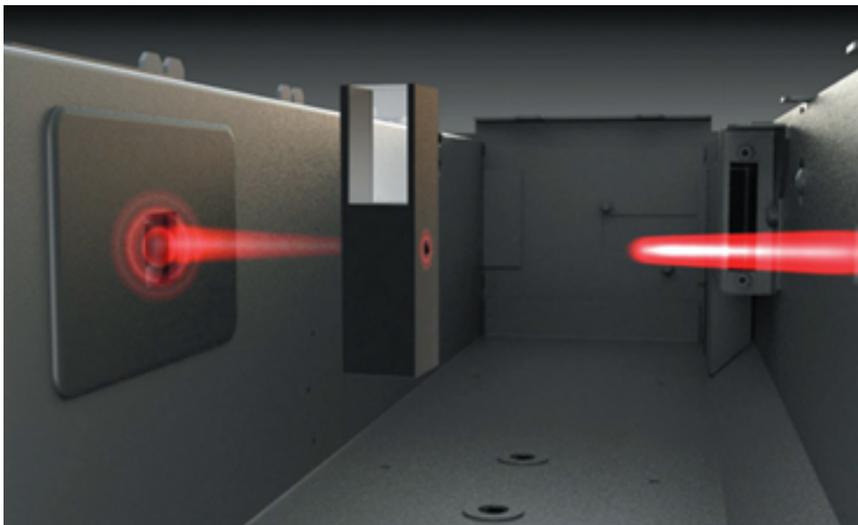
### Microvolume TrayCell

The TrayCell has been designed for short pathlength measurements of 0.1, 0.2, and 2 mm pathlength. The TrayCell fits into the standard Cary 60 UV-Vis cell holder and can be filled, measured, and cleaned in seconds. The TrayCell is a convenient way to perform highly precise measurement of low volume samples (5  $\mu$ L or less) such as DNA/RNA or protein samples.



Microvolume TrayCell

## Cuvettes, flow cells, and microcells



Agilent offers a wide range of [cuvettes](#), including flow cells and microvolume cuvettes for the use with the Cary 60 UV-Vis. The highly focused beam makes the Cary 60 UV-Vis ideal for measuring small volumes in microvolume cuvettes.

### Extended sample compartment

Required for the 18 cell multicell changer, the extended sample compartment can also be used just to provide more room in the sample compartment. The Cary 60 UV-Vis has room light immunity, so can be operated with the sample compartment lid open. However, samples may be photo-sensitive or need to be enclosed for other reasons. The extended sample compartment is the ideal solution for this situation.

### Dissolution

Combining an Agilent 708-DS dissolution apparatus, a fiber optic multiplexer or 18-cell changer (fitted with flow cells), with a Cary 60 UV-Vis spectrophotometer creates a complete online UV-dissolution system.



Cuvettes, microcells, flow cell, and cylindrical cells



Extended sample compartment, fitted to the Cary 60 UV-Vis



Agilent 708-DS dissolution apparatus and Cary 60 UV-Vis, configured with a fiber optic multiplexer

### Learn more:

[www.agilent.com/chem/cary60](http://www.agilent.com/chem/cary60)

DE.44488.7926967593

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© Agilent Technologies, Inc. 2021  
Published in the USA, November 5, 2021  
5994-4069EN