

8 x 6 Water-Thermostatted Multicell Holder Series II Accessory

Overvoltage Category II

Pollution Degree 2

Equipment Class III

Safety information

Before using this accessory, you must read the Safety Practices and Hazards section in your Cary user's guide.

A link to the Safety section can also be found on the main page of the Cary WinUV Help.

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired and your safety may be at risk.

Introduction

The 8 x 6 Water-Thermostatted Multicell Holder Series II accessory is designed to be used only with the Cary 100/300 UV-Vis spectrophotometers.

NOTE

If you do not have a Series II Cary 100 or 300, you will need to have a Series II base fitted inside your instrument for use with the Multicell Holder accessory.

The Water-Thermostatted Multicell Holder consists of a staggered arrangement of two sets of cell holders. The front set has eight cell positions, and the rear set has six. The cells are designed to be used with the Extended Sample Compartment and the optional Temperature Probe accessory. The Multicell Holder can be used to measure up to fourteen samples (where supported by the software), producing fourteen single beam measurements.

Cells in the accessory can be easily removed by raising the cell lifter knob at the front of the Multicell Holder.

Self-masking microcells may also be used with the Multicell Holder. This includes the 80 μ L microcell.

For multicell functionality, the Accessory Controller Board and appropriate Extended Sample Compartment are also required.



Agilent Technologies

Unpacking notes

Your accessory is packed in foam-lined cardboard boxes. Check that you have received all of the items in the accessory kit by referring to the packing list included with the shipment.

Inspect all parts for damage during transit. Report any damage immediately. Refer to the accessory by model and part number.



Figure 1a) The 8 x 6 Water-Thermostatted Multicell Holder



Figure 1b) The baseplate with tubing that sits in the Extended Sample Compartment. You will also receive hosing to connect to the water bath hoses.

Installation

General requirement:

An installed Accessory Controller board.

NOTE

Calibration of the cell holder must be performed before it can be used for measurements. Use the Align application.

You will need:

- 1 Philips screwdriver
- 1 flat-blade screwdriver
- The Extended Sample Compartment.

To install the Water-Thermostatted Multicell Holder accessory:

- 1 Turn off the spectrophotometer. You may leave the computer turned on.
- 2 Ensure the sample compartment is empty.
- 3 Gently lift the Multicell Holder onto the edge of the instrument, with the accessory resting on the lip of the sample compartment (see Figure 2).



Figure 2. Resting the Multicell Holder accessory on the edge of the instrument. Note that the 6 x 6 Multicell Holder is pictured, however the installation procedure is the same for the 8 x 6 Multicell Holder.

8 x 6 Water-Thermostatted Multicell Holder Series II Accessory

- 4 While the accessory is resting in this position, connect the two plugs attached to the accessory to the sockets positioned in the base of the instrument (see Figure 3).



Figure 3. Connecting the two plugs on the accessory to the two sockets located in the base of the instrument. Note that the 6 x 6 Multicell Holder is pictured, however the installation procedure is the same for the 8 x 6 Multicell Holder.

- 5 Place the accessory into the sample compartment. Guide pins on the base of the accessory will sit in locating holes on the base of the instrument, correctly positioning the accessory.
- 6 Using a Philips screwdriver, tighten the front holding screw located on the right side of the accessory (see Figure 4).



Figure 4. Tightening the front holding screw

- 7 Place a hand on the front of the accessory and gently slide the top half of the accessory forward to expose the two rear holding screws (see Figure 5).



Figure 5. Sliding the top half of the accessory forward. Note that the 6 x 6 Multicell Holder is pictured, however the installation procedure is the same for the 8 x 6 Multicell Holder.

- 8 Using the Philips screwdriver, tighten the two holding screws located at the rear of the accessory.
- 9 Once the two rear holding screws have been tightened, slide the top half of the accessory back into position, towards the rear of the instrument sample compartment.
- 10 Remove the baseplate from the Extended Sample Compartment. Slot the baseplate attached to the Multicell Holder into the Extended Sample Compartment. Ensure that the switch and knob on the baseplate are facing towards the instrument (see Figure 6).

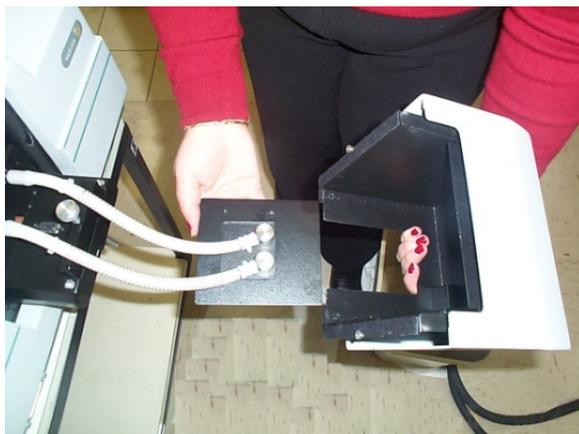


Figure 6. Slotting the accessory baseplate into the Extended Sample Compartment

- 11 Attach the Extended Sample Compartment to the instrument by slotting the pins into the keyholes beside the sample compartment (see Figure 7).



Figure 7. Attaching the Extended Sample Compartment to the instrument

The accessory must now be configured before use.

Configuring the accessory using the software

To configure the accessory:

- 1 Open the **Align** application.
- 2 Click the **Calibrate Cell Changer** tab, then the **Calibrate** tab.
- 3 Select your cell changer type (in this case, **Series II 8 x 6**).
- 4 Click **Start Calibration**. The instrument will automatically go to dual single-beam mode, step through the first six positions to establish the peak center of each position, and will apply the factors to the back positions. This alignment can be undertaken with or without microcells in the cell chambers; peak results will be identical.
- 5 Once the cells have been calibrated, click **Apply New Data** and the peak positions will be transferred to all applications that use the Series II 8 x 6. If another cell changer is used, it will need to be calibrated so the correct factors are used in the software.

NOTE

It is recommended that all cell holder positions are calibrated for a micro-cuvette calibration.

NOTE

If you wish to calibrate all the cell positions and have only a limited number of cuvettes, simply place the cuvettes into the first cell positions, moving through each cell by following the prompts. It is also recommended for a micro-cuvette calibration to use the cuvettes that will be used when measuring a sample.

Once the cell positions are calibrated, the Cary WinUV software will use these optimized positions for measurement.

Operation

Once installed, cells can be placed in the Multicell Holder and readings taken. If a sample and its blank are to be simultaneously measured, then they must be placed in the same relative positions in the front and rear holders of the Multicell Holder.

The software automatically controls the movement of cells into and out of the light beam. Other features of the Multicell Holder are manually controlled.

Cell lifter

The Cell lifter knob enables the cell to be lifted. To lift the cells, pull the knob upwards.

Using microcells

If you have only a small volume of sample, you may wish to use microcells in the Multicell Holder. Self-masking microcells are recommended for the best possible results. It is not advisable to use unmasked microcells in the Multicell Holder, because the light may reflect from the inside walls of the cells, giving rise to spurious results.

NOTE

If you are using the Multicell Holder to perform single-cell measurements (that is, the Sample Transport will be stationary during the measurement), you can use any cell you wish as long as the 'Z' height (the distance between the bottom of the cell and the center of the cell aperture) is 20 mm. Self-masking cells are recommended.

These microcells are available from Agilent:

Description	Path length	Path width	Volume	Material	Quantity
Stoppered black-walled semi, 0.9 mL	10 mm	4 mm	0.9 mL	UV	2
Stoppered black-walled, 80 µL	10 mm	4 mm	80 µL	UV	1
Disposable 1.5 mL	10 mm	4 mm	1.5 mL	PS	500

Thermostating

If you wish to use the accessory with water-thermostating, then simply connect the tubing provided with the accessory to your water bath. It is important that you use the correct tubing to connect the accessory to your water bath, because using the wrong tubing (for example, tubing that is too stiff or heavy) may cause the Sample Transport to malfunction, giving rise to errors caused by interference with the motion of the sample transport.

You should set the temperature that you require on the water bath and start the pump on the water bath so that water is circulating through the Multicell Holder. You should then load your samples and wait for the temperature to equilibrate. The time taken for a stable temperature to be reached will depend upon several factors, including the ambient temperature, how many samples you have loaded and the temperature set.

You can monitor the temperature inside your cuvettes, by using the optional Temperature Probe accessory. This has two probes, which can be placed in any of the cuvettes. The temperature can be displayed on the screen by setting the appropriate field in the software.

NOTE

You can use up to four probes by connecting another Temperature Probe accessory to the external accessory port. Use the provided extension lead to reach to the sample compartment.

NOTE

If you are not using all of the cell positions in the Multicell Holder, you may wish to place a cuvette with a blank solution in one of the unused cell positions. You can then place the Temperature Probe accessory (if fitted) in this cuvette and monitor the temperature without having to worry about blocking the light beam.

If you are using a water bath or temperature controller, you will need to ensure you use the correct coolant. For Agilent water baths and temperature controllers, automotive cooling corrosion inhibitor that is suitable for use with aluminum is acceptable for this purpose.

Removal

To remove the Multicell Holder accessory from the instrument:

- 1 Turn off the instrument.
- 2 Unscrew the front locating screw and then gently slide the top of the accessory forward.
- 3 Unscrew the two rear holding screws and then reposition the top of the accessory by sliding it towards the back of the instrument sample compartment.
- 4 Position a hand at the front and the rear of the accessory and lift the accessory directly upward until the two plugs are visible.
- 5 Disconnect the two plugs from the sockets in the bottom of the sample compartment floor, and then completely remove the accessory.

Specifications

Environmental conditions

Your accessory is designed only for indoor use. It is suitable for the categories stated on the front of this instruction sheet.

Condition	Altitude	Temperature (°C)	Humidity (%RH) non-condensing
Non-operating (transport)	0–2133 m (0–7000 ft)	5–45	20–80
Operating within performance specifications	0–853 m (0–2800 ft)	10–35	8–80
	853–2133 m (2800–7000 ft)	10–25	8–80

Weights

- Packed: 8 kg (17.6 lb)
- Unpacked: 3 kg (6.6 lb)

Dimensions

- Packed: 370 x 680 x 350 mm (14.5 x 26.7 x 13.7 in)
- Unpacked: 140 x 330 x 170 mm (5.5 x 13 x 6.6 in)

Connections

Electrical

- Spectrophotometer via flying lead, 25-pin D-range connector
- Spectrophotometer via flying lead, 15-pin D-range connectors

Water

- Connection barbs: 10-mm external diameter
- Hoses: 2 m long
- Maximum pressure: 70 kPa (10 psi)
- Maximum temperature: 95 °C
- Minimum temperature: 5 °C

Cuvettes

Standard quartz or plastic cuvettes may be used in the Multicell Holder. If microcells are used, it is recommended that they be self-masking and that the 'Z' height (distance from the bottom of the cell to the center of the light beam) be 20 mm.

Maintenance and cleaning

The outside of the Multicell Holder should be kept clean by wiping with a dampened (with either water or alcohol) soft cloth. Do not use abrasive cleaning agents. If the inside of the cuvette positions require cleaning, wrap a dampened soft cloth around a metal rod or spatula and gently wipe the inside surfaces.

Technical assistance

For technical assistance regarding this accessory, e-mail contact_us@agilent.com.

This information is subject to change without notice.



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