

Safety information

Before using this accessory, you must read the Safety Practices and Hazards section in your Agilent Cary Eclipse User's Guide.

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

If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Introduction

The Fiber Optic Coupler is an accessory that enables the use of a fiber optic probe with the Agilent Cary Eclipse. This allows the user to examine the fluorescent properties of samples at locations remote from the instrument via an optical light guide.

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.

Installation

To install the Fiber Optic Coupler in the sample compartment, follow these steps:

- 1** Turn the Agilent Cary Eclipse instrument power off using the switch on the front right side of the instrument. You may leave the PC turned on.
- 2** Remove the sample compartment lid by sliding it all the way back. You will feel some resistance, but keep pushing to remove it completely. Remove the front panel by sliding it upwards. Ensure that the sample compartment is empty.
- 3** Carefully remove all of the packaging foam and accessory components from the box.

CAUTION

When handling the Fiber Optic Coupler, avoid placing fingers or thumbs in the coupler entrance, as they will touch the flat mirror. Always lift using the handle (Figure 1 i).

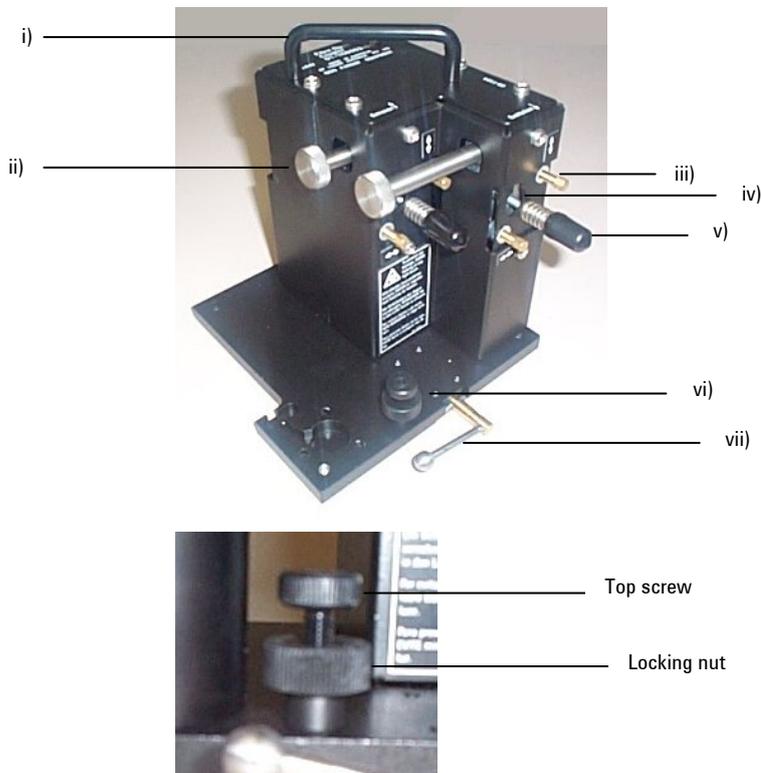


Figure 1. Fiber Optic Coupler accessory.

- i) Handle.
- ii) Holding screw (one of two).
- iii) Aligning adjuster (one of four).
- iv) Key hole (one of two).
- v) Focus control (one of two)—DO NOT ADJUST.
- vi) Stabilizing screw.
- vii) Fastening lever in open position.

Insert: Close up of stabilizing screw.

- 4 Ensure that the fastening lever (Figure 1 vii) is in the open position (i.e., to the left), and place the Fiber Optic Coupler in the sample compartment. Align the two locating holes on the base of the accessory with the locating pins on the floor at the rear of the sample compartment. Move the fastening lever from left to right to lock the accessory into position.
- 5 Adjust the stabilizing screw on the accessory base (Figure 1 vi), to stabilize the accessory. To do this, use your fingers to screw the top screw (Figure 1 Insert) clockwise until there is no side-to-side movement, then tighten the locking nut to lock the accessory into this position.
- 6 Attach the special sample compartment lid for use with the accessory onto the top of the instrument, by sliding it on from the back.
- 7 To connect the long Fiber Optic Probe (see Figure 2) to the coupler accessory:
 - a (a) Carefully remove the protective plastic caps from the two connector ends (Figure 2 ii) of the probe.
 - b Loosen the holding screws (Figure 1 ii) on the Fiber Optic accessory by turning them counterclockwise.



Figure 2. Fiber Optic Probe. i) Cable plug. ii) Connector ends. iii) Probe tip. iv) Remote read button. v) Metal join.

- c** Swing open the small cover on the sample compartment lid. Support the end of the probe to which a probe tip will be attached (see Figure 2 iii). While supporting this end, carefully thread the two connector ends of the probe and the cable plug (Figure 2, ii and i respectively) down through the hole.
- d** Insert the two connector ends into the two key holes (Figure 1 iv) in the coupler accessory, ensuring that the metal pins are pointing directly upwards. (It does not matter which connector end is inserted into which slot.) Push the ends as far as they will go so that the face on the end of the connectors presses up against a metal stop.
- e** Tighten the holding screws until finger-tight. Check that the probe connectors are securely held in place.

CAUTION

Fasteners should be finger-tight only. Do not over-tighten or you may damage the connectors.

- f** Connect the cable plug to the D-shaped 25 pin port on the left side of the rear sample compartment wall.
- g** Secure the probe in the sample compartment lid by tightening the thumb screw up against the metal join (Figures 2 v and 3 i.) Then close the small cover (Figure 3 ii).



Figure 3. Securing the probe in the sample compartment lid.

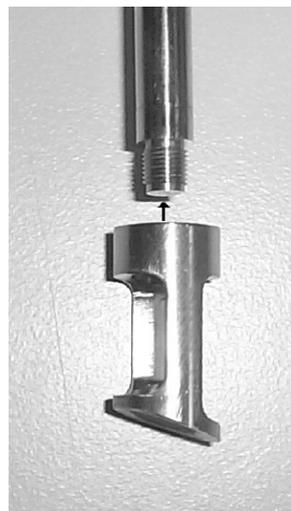
- h Replace the front panel that you removed in step 2 and close the sample compartment lid.
- i Screw a probe tip onto the end of the probe (Figure 2 iii). You may use either a solid sample probe tip (see Figure 4), or a liquid probe tip (10 mm or 20 mm—both are available as a single kit, see Figure 4 ii).

NOTE

If you are using a liquid probe tip and are going to align the accessory, leave the tip off, as it needs to be off for alignment.



(i)



(ii)

Figure 4.

(i) Connection of a solid sample probe tip to the Fiber Optic Probe.

(ii) Connection of a liquid probe tip to the Fiber Optic Probe.

WARNING

Danger to eyes, avoid looking at the light beam.



To ensure that the fiber optic system will operate at maximum performance, it is necessary to optimize the efficiency with which light passes through the coupling device before experimentation begins.

NOTE

Alignment needs to be done only once—there is no need to align the coupler each time the accessory is removed and re-installed.

To align the accessory:

- 1 Turn the Agilent Cary Eclipse instrument power on using the switch on the front right side of the instrument.
- 2 Start the Align application by clicking **Start** in the Windows Taskbar, then **Programs/Cary Eclipse/Align**. The spectrophotometer will begin taking continuous readings.
- 3 Any fluorescent material can be used for alignment. We recommend using the supplied white alignment card.

If using the solid sample tip, clamp the probe against a white area on the card/fluorescent material. The solid sample tip should be oriented as depicted in Figure 5.

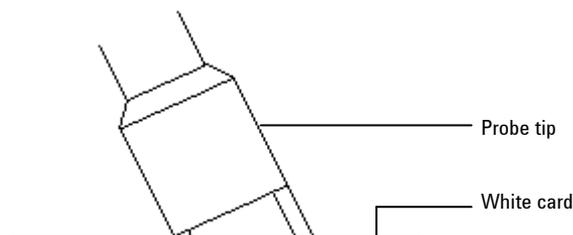


Figure 5. Close up of the solid sample tip as it should be positioned against the white alignment card.

If using a liquid probe tip, ensure the probe tip is removed. Hold the end of the probe against the card/fluorescent material at an angle of approximately 45° to avoid scattered excitation light. Use a clamp to hold the probe in this position.

- 4 In the Align application, click the Cary tab. If using the white card, set the parameters as depicted in Figure 6 then click **Apply**. If using a different fluorescent material, set appropriate excitation and emission wavelengths.

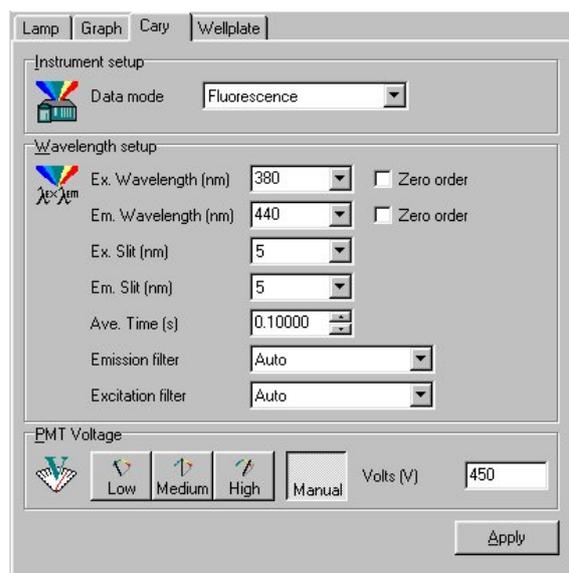


Figure 6. Align application Cary page settings for alignment using white card.

- 5 To maximize the "Int" (intensity) reading in the top left corner of the screen (hence the amount of light reaching the detector), you may need to turn the gold adjusters (Figure 1 iii).

To do this:

- a Slide back the lid enough to remove the sample compartment front panel.
- b Using the supplied 5.5 mm spin-tight, slowly turn the vertical excitation adjuster to the left. If the intensity reading starts to decrease, turn the adjuster to the right.
- c Keep turning the adjuster in the direction that causes the intensity value to increase. When you reach a point where the value starts to decrease, you have just passed the point of maximum intensity. Turn the adjuster very slightly back the other way to find this maximum value.

TIP: You may find it easier to view the intensity reading graphically. To do this, click the **Graph** tab. Zoom in on the graph for a more precise view of the intensity.

- d Repeat steps (b) and (c) for the horizontal excitation adjuster to maximize the signal. Then, repeat steps (b) through (d) until turning either adjuster in any direction results in a decrease in intensity.

CAUTION

Do not alter any other screws on the accessory, especially the two focus controls (Figure 1v).

- e Now that you have optimized the light entering the excitation fibers, you will need to maximize the fluorescence emission reaching the detector. To do this, repeat steps (b) to (d) for the emission vertical and horizontal gold adjusters.

The instrument is over-range if the reading reaches 1000 a.u. If this occurs, it will be necessary to reduce the photo-multiplier tube (PMT) voltage on the Cary page in order to continue the alignment procedure. As a guide, a 10% change in PMT voltage causes a two-fold change in the intensity measured.

- 6 Once you have maximized the intensity using the adjusters, the coupler is satisfactorily aligned. Replace the front panel, close the lid and close the Align application.

If using the liquid probe tip, you can now screw the tip onto the end of the probe (Figure 4 ii).

Operation

To use the Fiber Optic Coupler:

- 1 Start the application you will be using and set the instrument parameters according to your analytical requirements.
- 2 Present the probe to the sample and press the red Remote Read button (Figure 2 iv) on the probe to start the data collection.

Specifications

For environmental and power supply requirements, refer to your Agilent Cary Eclipse operating instructions. This product is suitable for indoor use only.

Weight

Packed	3.75 kg (8.27 lb)
Unpacked	2.25 kg (4.96 lb)

Dimensions

Packed (includes lid)	330 x 260 x 470 mm (12.9 x 10.2 x 18.5 in)
Unpacked	160 x 160 x 160 mm (6.3 x 6.3 x 6.3 in)
Lid unpacked	350 x 210 x 50 mm (13.8 x 8.3 x 2.0 in)

Maintenance and cleaning

The outside of the Fiber Optic Coupler should be kept clean by wiping with a damp cloth (dampened with water or alcohol). Do not use abrasive cleaning agents. Rinse the probe tips and the end of the probe with water after use and dry before storing. Avoid bending the cable sharply as this can damage the cable.

Technical assistance

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

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This information is subject to change without notice.



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Part Number: 8510186600

Edition 04/12

Issue 5

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and 2012**

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