

Solid Sample Holder Accessory

Installation category I

Pollution degree 2

Equipment class III

Introduction

The Solid Sample Holder for the Agilent Cary Eclipse is an accessory that enables you to perform fluorescence measurements on solid samples.

It consists of a vertical sample mounting 'slide' supported by optical rails attached to the accessory baseplate.

Three optional kits are available for mounting specific types of solid sample. They are:

- Edge mounting kit
- Powder holder and single crystal holding kit
- Cuvette holder kit



Figure 1. The Solid Sample Holder accessory.

- | | |
|--------------------------------------|----------------------------|
| a) The 'slide' | d) Optional cuvette holder |
| b) The accessory base | e) Optional edge mounter |
| c) Clamps used for attaching samples | f) Optional powder holder |



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Unpacking notes

Your accessory is packed in foam-lined cardboard boxes. Check that you have received all of the components listed in the packing list included with the shipment.

Installation

If you ordered the Solid Sample Holder without any of the additional (optional) mounting kits, follow the standard installation procedure.

If you ordered one of the optional kits, follow the installation procedure that corresponds to your kit on the following pages.

Standard installation

- 1 Attach the slide to the accessory base (see Figure 1). To do this:
 - a Completely remove the lower half of the clamping mechanism by taking out the screw that holds the two parts together (see Figure 2 (ii)).

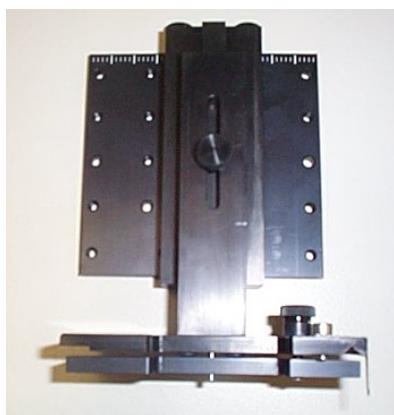


Figure 2 showing the screw (ii) separating the lower half of the clamping mechanism (i), and the groove (iii) where one optical rail fits.

- b Slide the lower half of the clamp under the two optical rails on the accessory base. Orient it so that the cut-out edge is facing the angular adjustment locking screw (see Figure 3 (iii)).

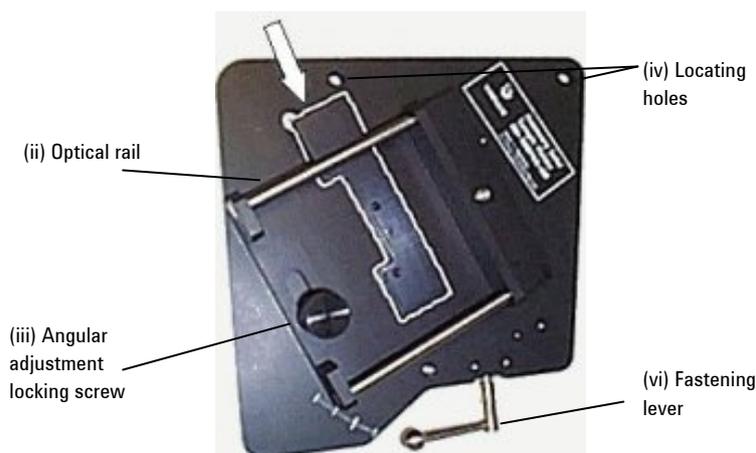


Figure 3 showing (i) how to position the lower half of the clamp (outlined in white) under the optical rails (ii) on the accessory base. Locating holes (iv) and fastening lever (vi) are also labeled.

Powder holder and single crystal holding kit installation

If you ordered the optional powder holder and single crystal holding kit, follow the appropriate installation procedure below.

To install the single crystal holder:

- 1 Follow step 1 of the standard installation procedure.
- 2 Attach the crystal holder (see Figure 4) to the slide face using the two screws provided. The three-holed side should form a 'shelf'. Place your crystal into the hole that most securely holds your crystal.



Figure 4. The single crystal holder.

- 3 Follow step 3 of the standard installation procedure.

To install the powder holder:

- 1 Follow step 1 of the standard installation procedure.
- 2 Attach the rectangular plate with a semi-circle cut out of it to the face of the slide. Do this using the four screws and the hexagonal ball screwdriver. Ensure the flat side of the plate is facing away from the slide.
- 3 Position the powder receptacle (see Figure 5 (iii)) with the small silver rod pointing upwards.
- 4 Using gloves or lens tissue, carefully place a silica disk (see Figure 5 (ii)) into the powder holder receptacle. Beware of contaminating the disk with fingerprints.

NOTE

The kit comes with a spare silica disk and a spare powder holder receptacle.

- 5 Put some sample into the powder receptacle, ensuring a thin layer is covering the silica.
- 6 Place the powder receptacle into the larger powder holder 'shell' (see Figure 5 (iv)). **To do this:**
 - a Grasp the small silver rod of the powder receptacle between the thumb and forefinger.
 - b Lift the powder receptacle, keeping it horizontal at all times to avoid spilling the powder.
 - c Place the receptacle into the center of the shell cavity.

- 7 Ensuring that the protruding black metal column (see Figure 5 (v)) is on the inside, (in order to securely press the sample up against the silica disk), screw the lid (see Figure 5 (i)) of the powder holder onto the shell.

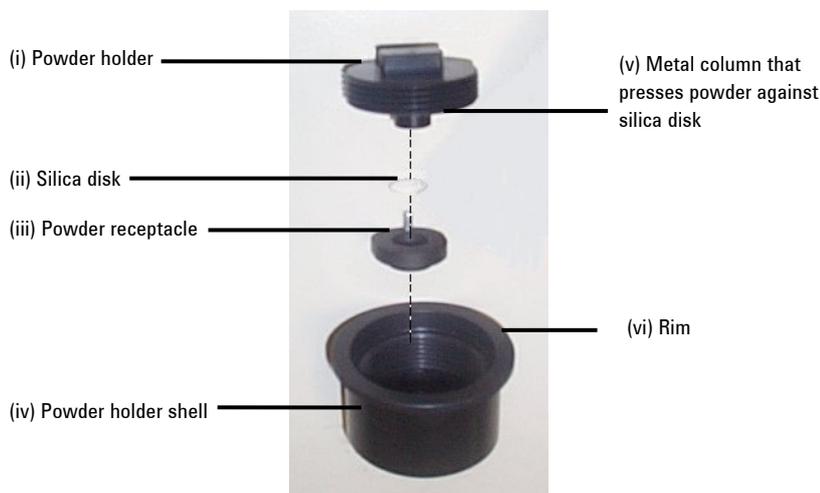


Figure 5. Exploded view of the powder holder. The sample sits between the silica disk (ii) and the column of the lid (v).

- 8 Take the assembled powder holder and slide the rim (see Figure 5 (vi)) into the semi-circle groove on the accessory slide face created in step 2.
- 9 Follow step 3 of the standard installation procedure.

NOTE

When disassembling the powder holder, ensure that the silica disk is facing down when you unscrew the lid, to prevent spillage of powder.

Cuvette holder kit installation

If you ordered the optional Cuvette holder kit, follow the installation procedure below.

- 1 Follow step 1 of the standard installation procedure.
- 2 Attach the cell holder to the slide by aligning the two holes on the cell holder with the two holes at the bottom of the slide and using the hexagonal ball screwdriver to screw in two screws. Ensure that the open side of the cell holder is facing outwards.
- 3 Insert the cuvette containing the sample.
- 4 Follow step 5 of the standard installation procedure.

Operation

The solid sample holder accessory provides both rotational and translational adjustment of the sample. The angle of incidence of the excitation may be varied from 20°–35°. This is the angle between the exciting light and a line perpendicular to the surface of the sample mounting slide (refer to Figures 6 and 7). The angle of incidence is indicated by the position of the corner of the “stage” relative to the graduated markings on the accessory baseplate (Figure 6). The markings are at intervals of one degree. The largest mark indicates an angle of incidence of 30°.

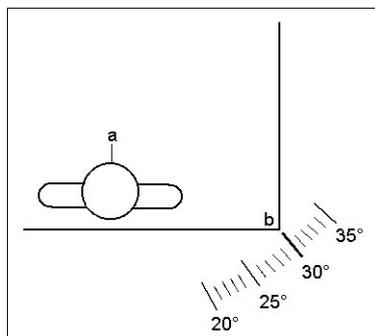


Figure 6: a) Angular adjustment locking screw. b) Corner of stage. Markings indicate the angle of incidence of the exciting light on the sample mounting slide.

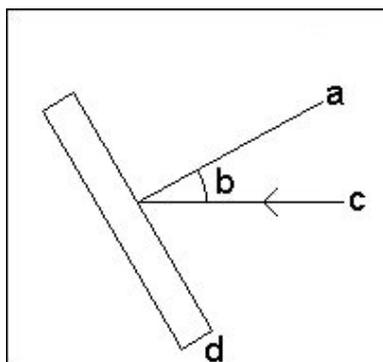


Figure 7. Angle of incidence of excitation. a) Normal b) Angle of incidence c) Excitation d) Slide

To alter the angle of incidence:

- 1 Loosen the angular adjustment thumbscrew (large thumbscrew).
- 2 Rotate the stage to the desired orientation.
- 3 Lock the stage into position by rotating the thumbscrew until finger-tight. It is recommended that you use the Kinetics application to perform this procedure. Alternatively, you can use the Advanced Reads application. To optimize measurement of a particular sample with the solid sample holder accessory, it is recommended that you initially monitor both the fluorescence intensity and the signal intensity at the excitation wavelength. Rotate the accessory “stage” (Figure 6(b)) to alter the angle of incidence of the exciting light.

Samples of varying depth may be moved to the focal position by loosening the thumbscrew that tightens the clamps around the optical rails, and sliding the entire mount forward or backward as required. This ensures the exciting light interacts with the sample directly in front of the emission window thus enhancing the collection of emission.

The contribution to the total signal from scattered exciting light is inherently greater when measuring opaque solids as compared to clear (non-scattering) liquids measured at the traditional right angle orientation. For this reason, it is highly recommended that excitation and emission filters be used. This can be achieved using the Cary Eclipse software by setting both the “Excitation filter” and “Emission filter” selections on the Options tab of Setup to **AUTO**. If required, further reduction of scattered excitation could be achieved by placing appropriate cut-off and/or bandpass filters in the filter holders provided in the instrument sample chamber.

Specifications

Weight

Packed	3.4 kg (7.4 lbs)
Unpacked	1.5 kg (3.35 lbs)

Dimensions (W x D x H)

Packed	290 x 250 x 250 mm (11.42 x 9.84 x 9.84 inches)
Unpacked	190 x 190 x 200 mm (7.48 x 7.48 x 7.87 inches)

Maintenance and cleaning

All cleaning should be done with a soft cloth. If necessary, this cloth can be dampened with water or a mild detergent to clean black painted surfaces. Do not use organic solvents or abrasive cleaning agents.

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This information is subject to change without notice.



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