

CUV-VIS, CUV-UV Cuvette Holders Installation Instructions

The CUV-VIS and CUV-UV cuvette holders for 1-cm path length cuvettes couple via SMA-terminated optical fibers to our spectrometers and light sources to create small-footprint spectrophotometric systems for absorbance and transmission experiments. These holders can be optimized for VIS-NIR (~360-1100 nm) or UV-VIS-NIR (~200-1100 nm) applications.

Parts Included

- Cuvette holder assembly for holding 1-cm cuvettes
- Two barbed fittings for connecting a temperature stabilizing water source
- Screwdriver for adjusting the fit of the cuvette
- Allen wrench for adjusting the collimating lenses

Installation

Attaching the Fibers

► **Procedure**

1. Attach one end of a SMA-terminated optical fiber to one of the collimating lenses. Attach the other end of this fiber – the illumination fiber – to a light source.
2. Attach another SMA-terminated optical fiber to the other collimating lens. Attach the other end of this fiber – the read fiber – to the spectrometer.

Using the Fiber Supports

► Procedure

1. Snap the clamps around the fibers after the fibers are screwed into the light source and spectrometer.
2. Lift the clamps until they support the fibers.
3. Unsnap the clamps to remove the fibers.
4. Insert the filter into the filter slot. The filter slot can accommodate filters up to 6 mm thick.
5. Clamp the filter in place by gently tightening the clamping screw finger-tight.

Adjusting the Fit of the Cuvette

The Cuvette Holder is designed to hold 1-cm square cuvettes. When properly adjusted, the cuvette should fit snugly into the holder.

► Procedure

1. Locate the two ball plunger screws.
2. Remove the fiber clamps for easier access to the screws.
3. Use the provided screwdriver to loosen the two ball plunger screws until the ball end of the screws is just visible in the cell holder and insert your cuvette into the holder.
4. Tighten the ball plunger screws until the ball contacts the cuvette and starts to compress. Do not over-tighten.

Using the Temperature Stabilization Feature

This feature is used to heat or cool the cuvette holder base and cuvette.

► Procedure

1. Remove the plugs from the top side of the base. (The plug on the right side of the base should stay in place but may require thread tape.)
2. Replace the plugs with the two barbed fittings (or any 1/8" NPT pipe thread fittings). Thread tape may be required on the fittings.
3. Connect the fittings to a water source. Water will circulate through the base.

Specifications

| Specification | Value |
|---|--|
| Path length | 1 cm |
| Collimating lenses (VIS-NIR) | BK 7 glass (~360 nm – 2 μm*), 5 mm diameter, f/2 |
| Collimating lenses (UV-VIS-NIR) | Quartz (200 nm-1.3 μm), 5 mm diameter, f/2 |
| Collimating lens termination | SMA 905 |
| Collimating lenses assembly (sample compartment) dimensions | 2.0" x 1.5" (LW) |
| Filter slot | accepts filters up to ¼" (6 mm) in thickness |
| Base material | aluminum |
| Base length | 5.5" |
| Connections in base | 800 (deuterium); 2,000 (tungsten) |
| Water input fittings | water inlet, water outlet, extra connection |
| Typical optical fibers specified for optimum performance (light throughput and optical resolution)** | 200 μm illumination fiber, 50 μm read fiber |
| <p>* Though the VIS-NIR lens is optimized for use to 2 μm, it can be configured to "see" only to 1100 nm with our S2000 spectrometer.</p> <p>** For all intents, there is no single combination of optical fibers that will satisfy the requirements of every application. As a rule, however, it is best to use a large-diameter (>50 μm) illumination fiber to get the maximum light throughput, and a small-diameter (<50 μm) read fiber to achieve the best optical resolution.</p> | |



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