Square One

Cuvette Holder

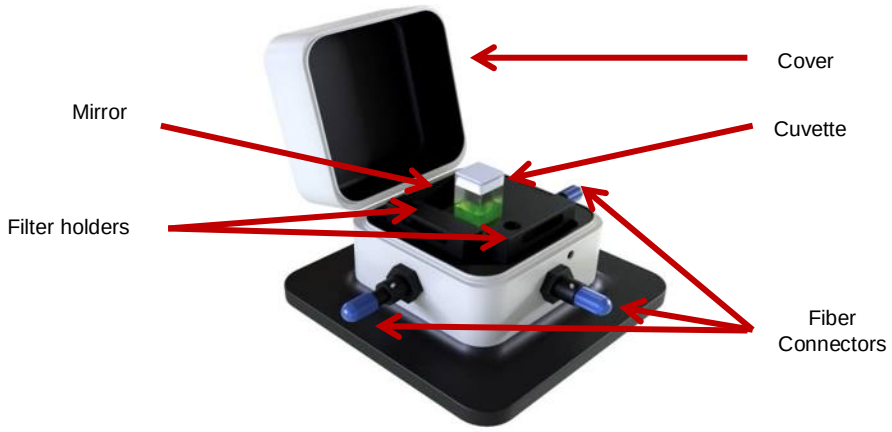
Quick Start Guide

The SQ1-ALL Cuvette Holder for 1-cm pathlength cuvettes couples via SMA-terminated optical fibers to spectrometers and light sources to create small-footprint spectrophotometric systems for absorbance and fluorescence experiments. The SQ1-ALL Cuvette Holder has a fully integrated cover for eliminating ambient light and has 2 filter slots to enable filtering illumination light entering the cuvette holder and/or detected light leaving the cuvette holder. The unit is designed to snugly hold 1-cm square cuvettes without user adjustment, providing high data repeatability.

Parts Included

- Cuvette holder assembly for 1 cm cuvettes
    - 2 filter holders
    - 1 mirror
- 10 disposable cuvettes
- Allen wrench for adjusting the collimating lenses

Installation



Attaching the Fibers

1. Remove the aluminum caps from the desired connectors.
2. 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.
3. Attach another SMA-terminated optical fiber to the other collimating lens. Attach the other end of this fiber – the read fiber – to the spectrometer.

NOTE

The connector on the front of the unit is only used for fluorescence applications.

Inserting Filters

1. Open the lid of the SQ1-ALL.
2. Remove the desired filter holder(s) from the unit.
3. Place filter on the surface of the holder and clip to secure.
4. Replace filter holder in unit.

Inserting the Cuvette

1. Open the lid of the SQ1-ALL.
2. Firmly place cuvette in unit. No adjustment is necessary after insertion.
3. Close lid.

Specifications

Dimensions	3.96” x 4.37” x 2.7” (L x W x H)
Weight	1.4 lb (0.6 kg)
Pathlength	1 cm
Z dimension	15 mm
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" (L x W)
Filter slots	2 slots
Optical filters	Accepts optical filters to 12.5 and 25 mm diameters. Filters may not be thicker than 4 mm.
Base material	aluminum
Typical optical fibers specified for optimum performance*	200 µm illumination fiber, 50 µm read fiber
*** 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.**	

FAQ

What is the “Z” dimension of the cuvette holder?

The “Z” dimension, 15 mm, is the optical height for placement of the light beam transmitting through the cuvette and is especially important with small-volume sampling.

Can I use the collimating lenses in the cuvette holder assembly for other applications?

Yes. The 74-UV collimating lenses included with the holder can be unscrewed and used separately in any fixture for applications that require a fiber for free-beam coupling, such as on-line transmission or reflection.

How do the 74-MSP mirror screw plugs (accessory item) increase signal in the cuvette holder for fluorescence measurements?

It’s not so much that the screw plugs increase signal as they redirect some of the signal that otherwise is lost as it transmits through the sample compartment. Each plug – you’ll need two –screws into a collimating lens port on the cuvette holder to redirect energy back to the sample or back into the collimating lens. The plugs are 0.3" (7.5 mm) UV-enhanced aluminum-coated reflection mirrors designed to collect the fluorescence that otherwise would be lost and to reflect the excitation energy back through the sample.

Which of the 3 connectors should I use?

Light is normally directed toward the sample from one of the side ports. For absorbance measurements, the spectrometer is placed in-line with the light. For fluorescence measurements the spectrometer is connected to the front connector.

Unlock the Unknown

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Chat with us at **oceaninsight.com**.
info@oceaninsight.com • **US** +1 727-733-2447
EUROPE +31 26-3190500 • **ASIA** +86 21-6295-6600