



4P20 Cuvette Port Insert for 4P Series Integrating Spheres

User Guide



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Chapter 1 General Information

1.1 Description

Thorlabs' 4P20 cuvette port insert holds cuvettes inside our 4P3 and 4P4 \varnothing 100 mm Modular Integrating Spheres. The cuvette port insert is designed to hold a 12.5 mm x 12.5 mm cuvette with a 10 mm path length (sold separately). Cuvettes with or without caps can be used to analyze liquid samples with the cuvette in an upright position.

1.2 Operation

The 4P20 insert consists of two parts: a cuvette holder and a base to secure the cuvette holder into the integrating sphere.

1.2.1 Mounting the Insert on the Integrating Sphere

To mount the 4P20 cuvette port insert on the top side of the 4P4 or 4P3 integrating spheres, remove the 4P10 port plug from the top position of the sphere and replace it with the 4P20 cuvette port insert. Secure the 4P20 insert to the integrating sphere using the two included M3 x 0.5, 8 mm long cap screws.



Figure 1 4P3 Sphere Shown with Port Plug Removed (Left) and Cuvette Insert Mounted (Right)

1.2.2 Cuvette Holder

The cuvette is inserted into the cuvette holder from below by following the steps illustrated in Figure 2. First lift the cuvette holder from the base. With the cuvette holder in one hand, pull and hold the safety catch with your index finger like a trigger. Then, push the release button down with your thumb and slide the cuvette up into the holder. Release both buttons to secure the cuvette. The holder can now be placed back into the base.

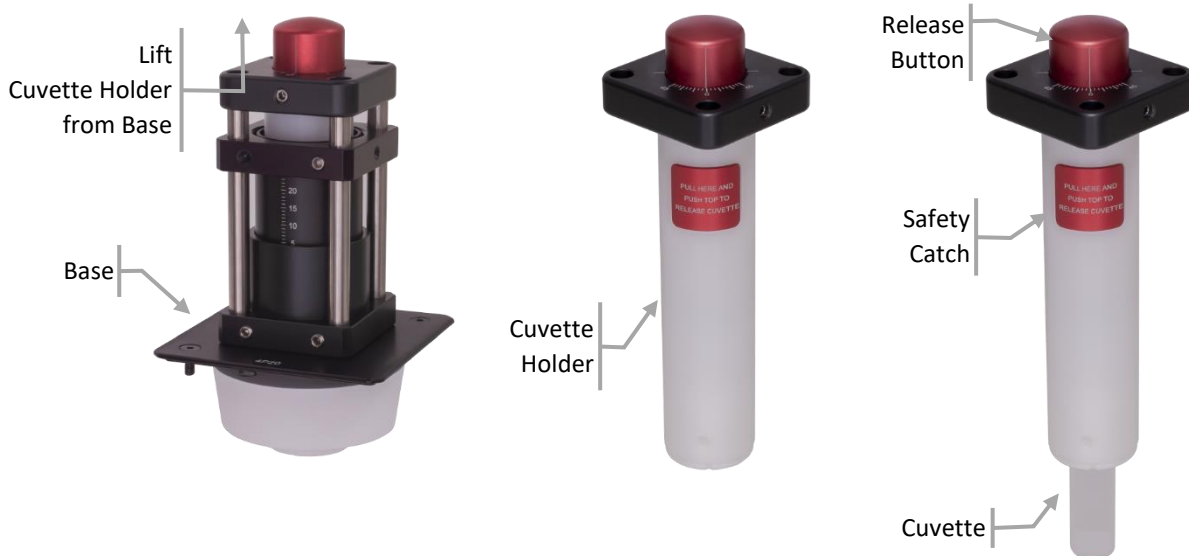


Figure 2 Lift the cuvette holder from the base and press the safety catch and release button to insert or release the cuvette.

1.2.3 Rotating the Cuvette

Use the release button on the cuvette holder to coarsely rotate the cuvette to any angle. The rotational position can be fixed with the 8-32 locking set screw on the side of the cuvette holder. Please do not fasten the setscrew too tight to avoid deformation of the soft holder material.

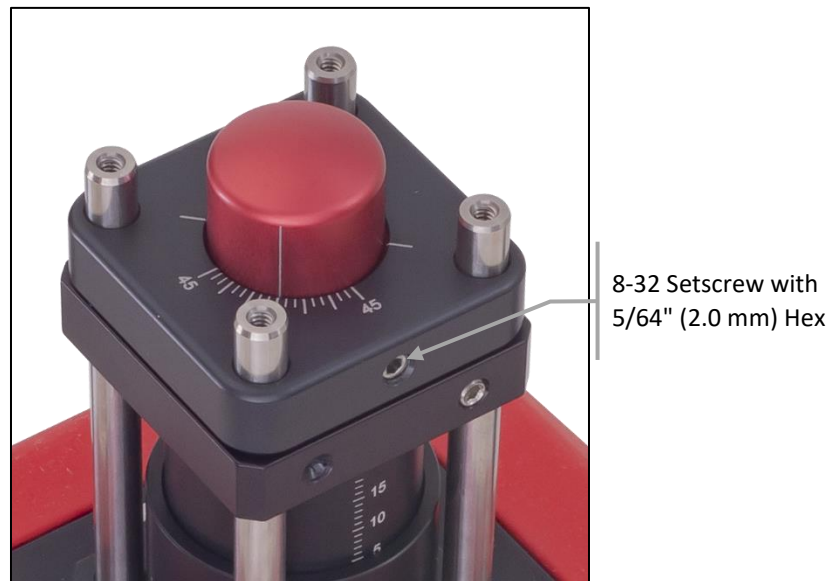


Figure 3 Cuvette Holder Detail

1.2.4 Height Adjustment of the Cuvette Inside the Integrating Sphere

The height at which the cuvette is positioned in the integrating sphere can be adjusted at the base of the insert. Hold the top part of the base while loosening the M4 setscrew shown below. Carefully slide the cuvette holder and top part of the base down. The vertical scale on the insert base will adjust. Once the desired position is reached, tighten the M4 setscrew lightly.

**Attention**

Do not loosen any screws other than those indicated as this will damage the 4P20 cuvette port insert and the integrating sphere.



Figure 4 Loosen the M4 Setscrew to Raise and Lower the Cuvette

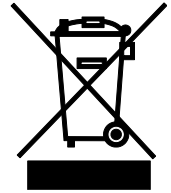
1.2.5 Cuvette Replacement

The base of the 4P20 insert can remain attached to the Integrating sphere while the cuvette holder is removed and reinserted. The cuvette height and rotation inside the integrating sphere will stay the same. Slide the cuvette holder upwards out of the 4P20 base. To remove the cuvette, first push the safety catch and then the release button as described above. With both pushed in, the cuvette can be removed from the cuvette holder. To insert a new cuvette, please follow the instructions above.

If a cuvette with a cap is used, it is recommended to use cuvettes with airtight stoppers, since PTFE top caps tend to get stuck in the port Insert. A cuvette without a cap is held in place by eight $\text{\O}3$ mm glass balls. If a cap with a maximum height of 10 mm is used, the cuvette will still be held in place with four of the glass balls.

Chapter 2 Warranty and RMA Information

Thorlabs verifies our compliance with the WEEE (Waste Electrical and Electronic Equipment) directive of the European Community and the corresponding national laws. Accordingly, all end users in the EC may return “end of life” Annex I category electrical and electronic equipment sold after August 13, 2005 to Thorlabs, without incurring disposal charges. Eligible units are marked with the crossed out “wheelie bin” logo (see right), were sold to and are currently owned by a company or institute within the EC and are not disassembled or contaminated. Contact Thorlabs for more information. Waste treatment is your own responsibility. “End of life” units must be returned to Thorlabs or handed to a company specializing in waste recovery. Do not dispose of the unit in a litter bin or at a public waste disposal site. It is the user’s responsibility to delete all private data stored on the device prior to disposal.



Annex I

2.1 Return of Devices

This precision device is only serviceable if returned and properly packed into the complete original packaging including the complete shipment plus the cardboard insert that holds the enclosed devices. If necessary, ask for replacement packaging. Refer servicing to qualified personnel.

Chapter 3 Thorlabs Worldwide Contacts

For technical support or sales inquiries, please visit us at www.thorlabs.com/contact for our most up-to-date contact information.



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