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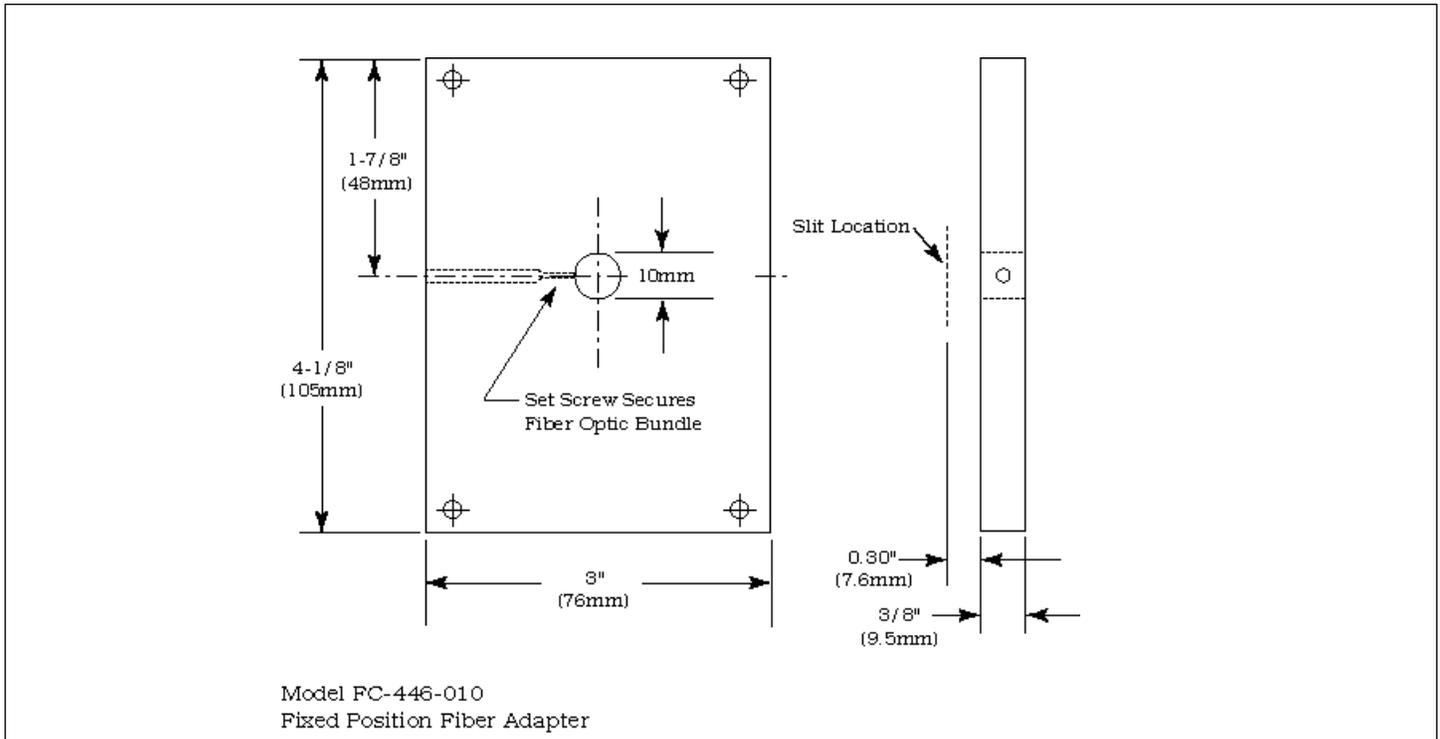
**Web Site:** [www.acton-research.com](http://www.acton-research.com)

**Operating Instructions  
for  
FC-446-010  
Fixed Position  
Fiber Optic Adapter**

# Model FC-446-010

## Fixed Position Fiber Optic Adapter for Acton Research SpectraPro® Monochromators and Spectrographs

Description: The FC-446-010 is a fixed position fiber optic adapter designed for use with SpectraPro series monochromators and spectrographs. It provides a simple, low cost means of using fiber optic bundles with SpectraPro monochromators and spectrographs. The FC-446-010 does not include adjustments for fiber positioning; these are available on the Models FC-446-020 and FC-446-030 assemblies.



The diagram below shows the FC-446-010:

The assembly is designed for use with 10mm diameter fiber optic bundles. The following procedure is recommended for installing and aligning the FC-446-010 and fiber optic bundles.

### Fiber Optic Bundle Requirements:

The standard FC-0446-010 adapter does not include a fiber optic bundle. These are available from Acton Research Corporation, or can be provided by the customer. The fiber optic bundle must terminate in a 10mm diameter (+0.00/-0.050mm) ferrule with a length of at least 25mm. A 50mm long ferrule is recommended for easier handling. The end of the ferrule should be flat, and the total fiber bundle can be any length.

### Mounting the FC-446-010 to standard SpectraPro Slit Assemblies:

Position the FC-446-010 against the slit assembly so that the red dot is facing up, and secure in position using the four 8-32 screws provided.

### Installing the Fiber Optic Bundle:

For installation of the fibers, it is recommended that the fibers be illuminated with a suitable light source, and a light detection system be used to detect signal levels. A light source with line output is recommended, such as a mercury pen-ray source. If no line output is available, the monochromator or spectrograph center wavelength can be set to 0nm to provide a line (non-dispersed zero order image of the fiber).

1. Slide the 10mm diameter ferrule into the FC-446-010 until it just contacts the slit assembly.

2. After contact is made, pull the fiber ferrule back slightly so that it is not in contact with the slit assembly. This allows easy slit width adjustments without interference from the fiber ferrule.

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**CAUTION: On some SpectraPro monochromators and spectrographs, the fiber ferrule can come into direct contact with the slit blades, and on others it can contact the slit height baffle. Never force the fiber optic bundle against the slits or height baffle, or permanent damage may result.**  
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3. Set the entrance slit width to match the diameter of the fibers. While monitoring the signal level, rotate the fiber bundle until maximum signal is detected. This is especially important if the fibers are arranged in a specific orientation (a line of fibers for example).
4. Close the slit width to approximately 50% of the fiber diameter and repeat step #3. This will enable more precise fiber alignment.
5. When the fiber has been rotated for maximum signal, tighten the set screw to secure the fiber in the FC-446-010.
6. If using a CCD, check the image of the fibers. If necessary, the fiber bundle can be moved in or out very slightly to optimize the image quality of the fibers through the system. If this is done, it may be necessary to repeat step 3 above to insure correct fiber alignment with the slit.