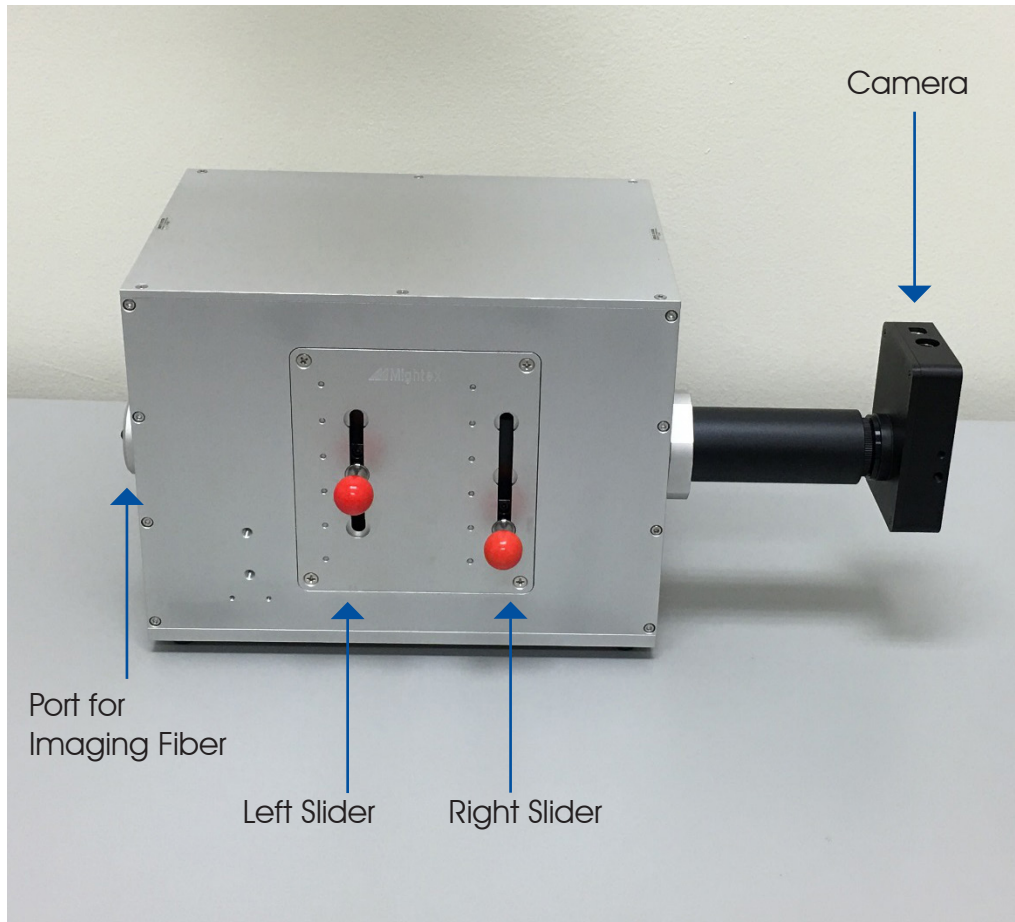


OASIS Implant Installation Guide

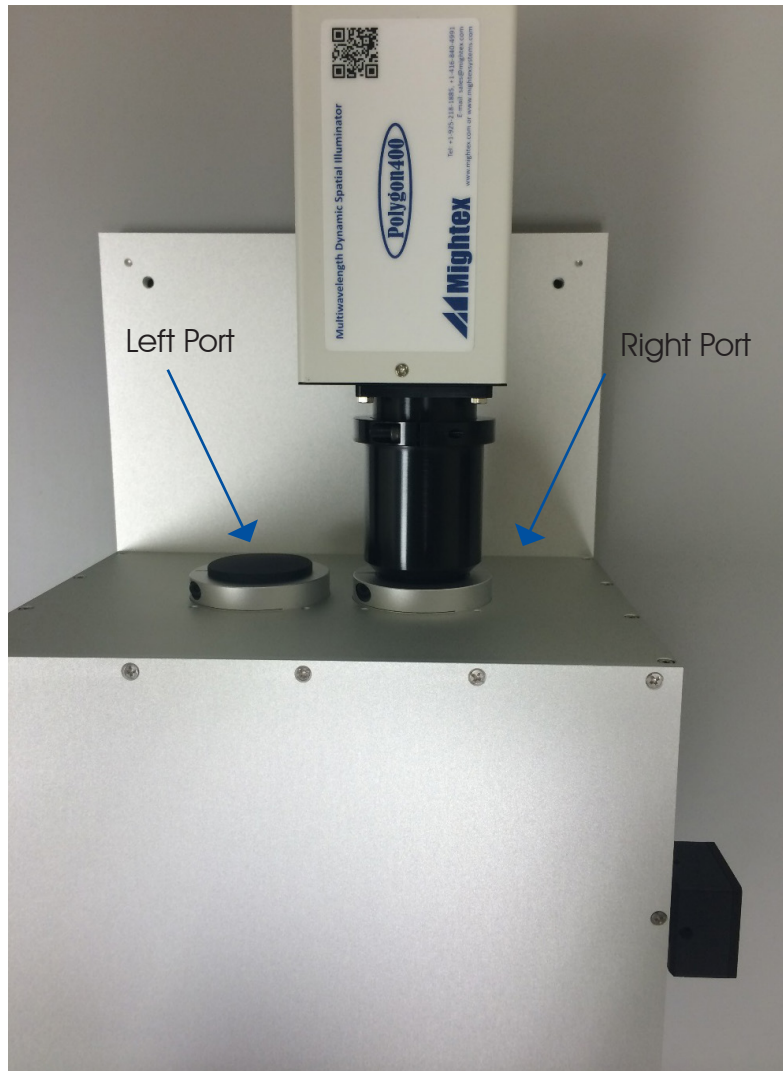
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Overview



Overview

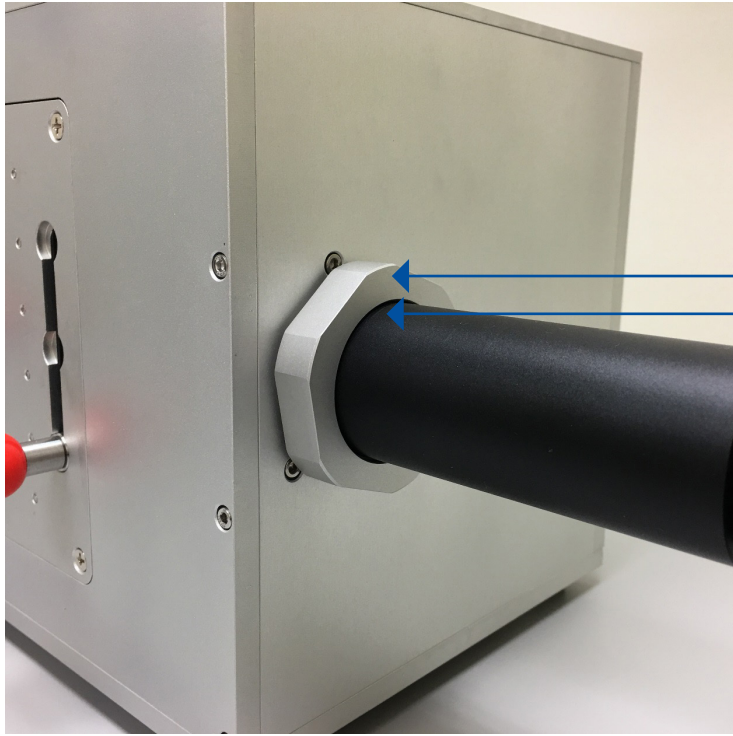


Installation

WARNING: Handle the device only via the baseplate and main body. Do not exert force on slider handles, fiber port, camera port or Polygon ports.

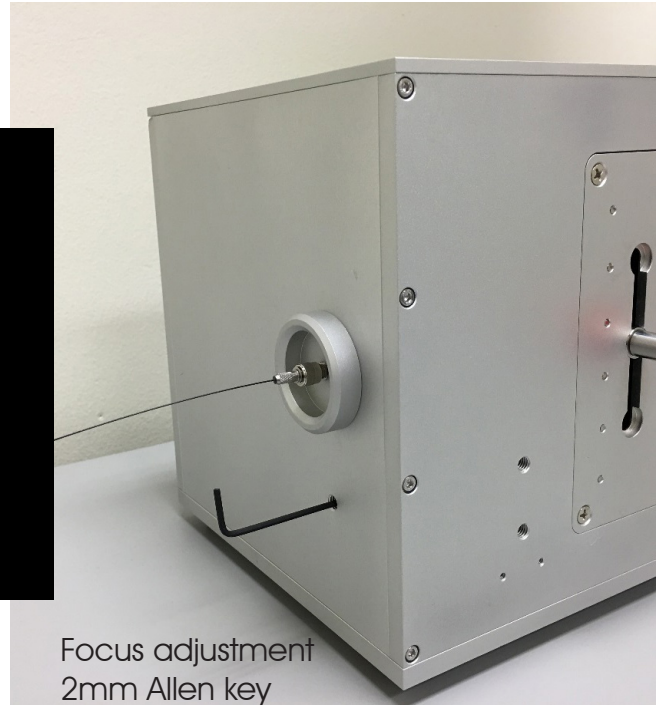
1. Install Polygon and/or wide-field illuminator into the back ports by inserting the front tube all the way into the port. The Polygon label should face up. Do NOT power up Polygon or the light source. The wide-field illuminator may have already been installed at the factory.
2. Install the imaging fiber into the SMA port. The imaging fiber has no protection tubing. Extreme care should be taken to prevent fiber breakage.
3. Filter sets are labeled on the front panel. Positions without labels are empty. Pull slider handle slightly out to move the filter slider.
4. Light from the imaging fiber will pass through the Left Slider first, then the Right Slider before reaching the camera. Make sure the filter set(s) in the light path has the correct characteristics to achieve the desired effects.

Install Camera



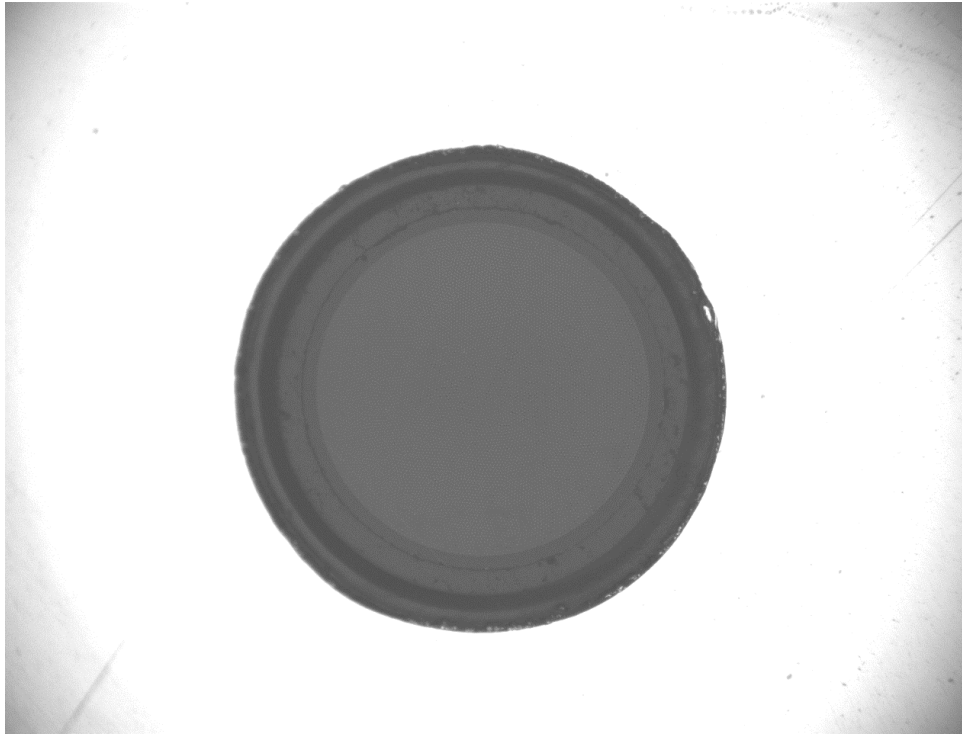
1. Thread the camera on the C-mount camera port.
2. Loosen the locking nut and rotate the camera so that it clocks correctly relative to the instrument case.
3. Note the small gap between the camera tube and the locking nut, this will be used to center the camera. See next page.

Testing Fiber and Camera



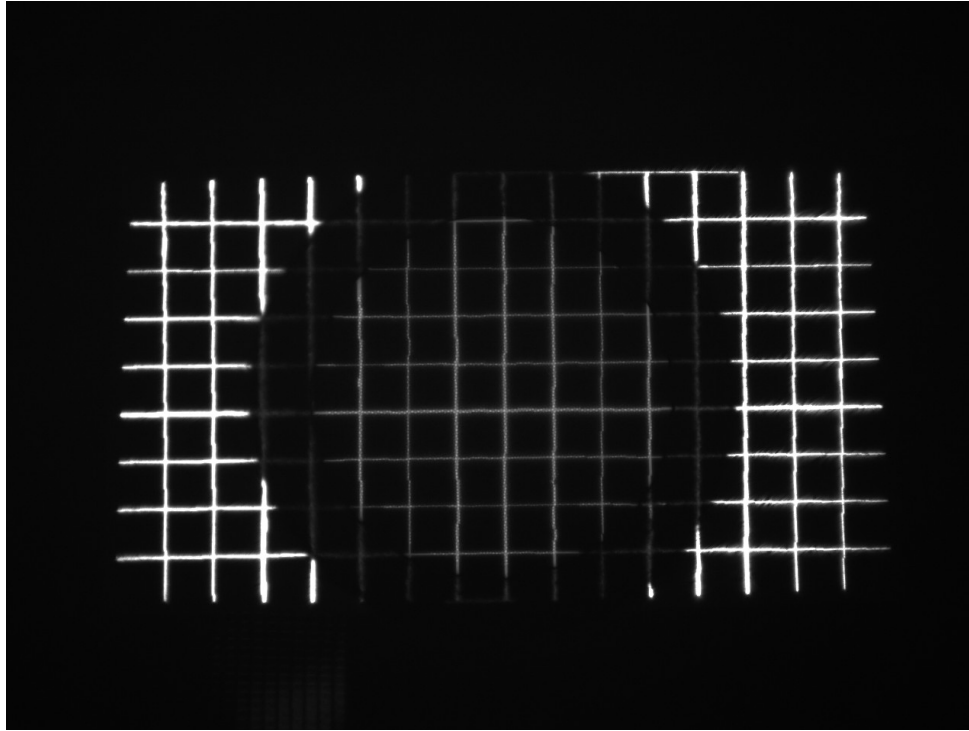
1. Launch your camera software. Make sure the entire camera FOV is displayed.
2. Aim the distal end of the fiber at a light source, such as ceiling lights. Increase the exposure time as necessary. You should see the following image.
3. Adjust the focus with the 2mm allen key so individual fiber elements become clearly visible. Remove the allen key immediately to avoid accidentally bumping into it and damaging the internal mechanism.
4. If necessary, loosen the locking nut and center the camera.

Test Widefield Illuminator



1. Insert the lightguide into the wide-field illuminator. Turn on the light source and keep intensity level at minimum.
2. Move the filter slider to the 90R/10T position.
3. You should see reflective light from the imaging fiber as well as the surrounding metal ferrule.

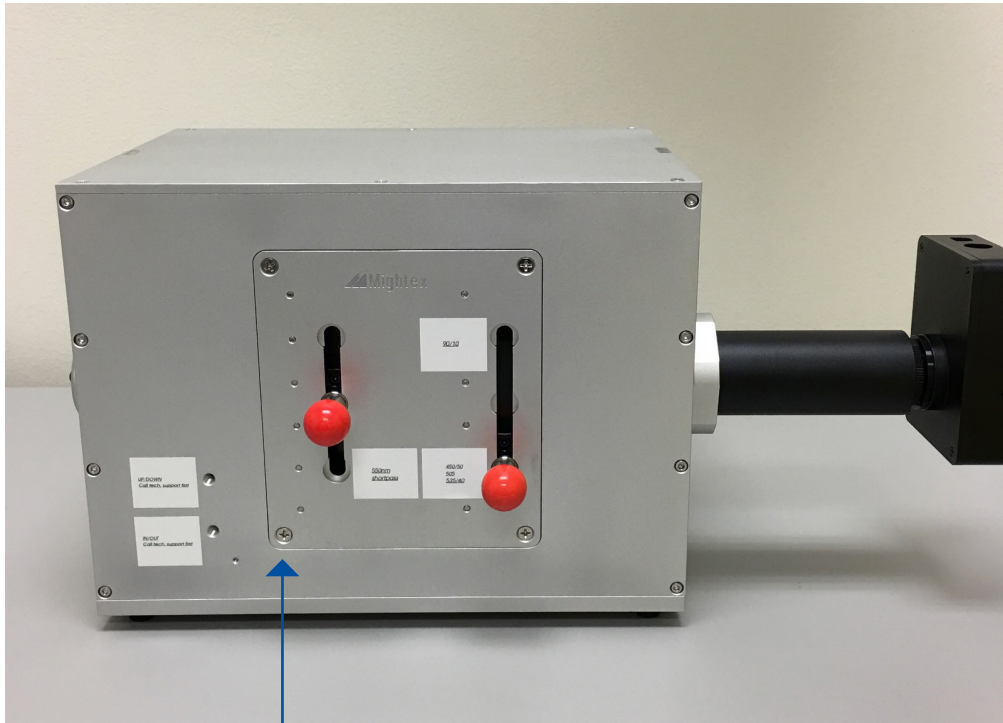
Test Polygon400



1. Launch Polygon software. Upload the grid image from the sample image folder.
2. Move the filter slider to the 90R/10T position.
3. Again keep the light source intensity at minimum to avoid oversaturating the camera. You should see the following image.

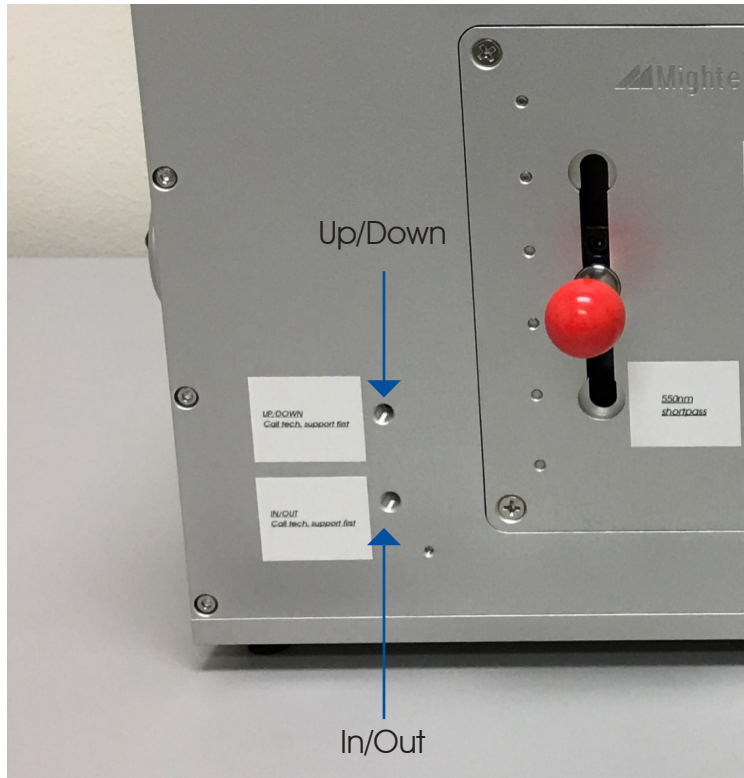
Note that the center circle is the core of the imaging fiber and thus the effective FOV. Only patterns inside the circular FOV will be transmitted to the distal end of the imaging fiber. The surrounding area are the metal ferrule of the SMA connector. These areas are highly reflective.

How to Change/Install Filters



1. Place both sliders in the middle position.
2. Remove these 4 screws while holding the door in place by hand.
3. Remove the entire slider assembly and install/change filters and dichroics (see filter installation guide for more detailed steps).
4. Place the assembly back, make sure the bottom edge of the door sits flat on the lower edge of the opening. Do not over tighten the 4 screws.

Adjust Fiber Position

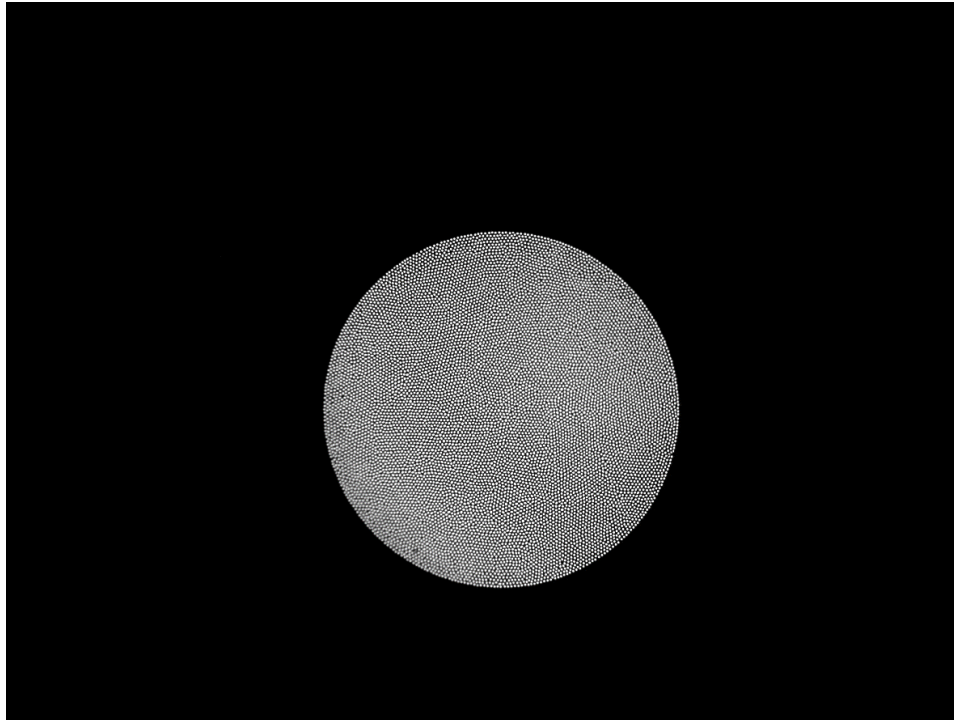


These adjustments will move the fiber relative to the field of view (FOV) of Polygon400.

Call technical support before performing these adjustments.

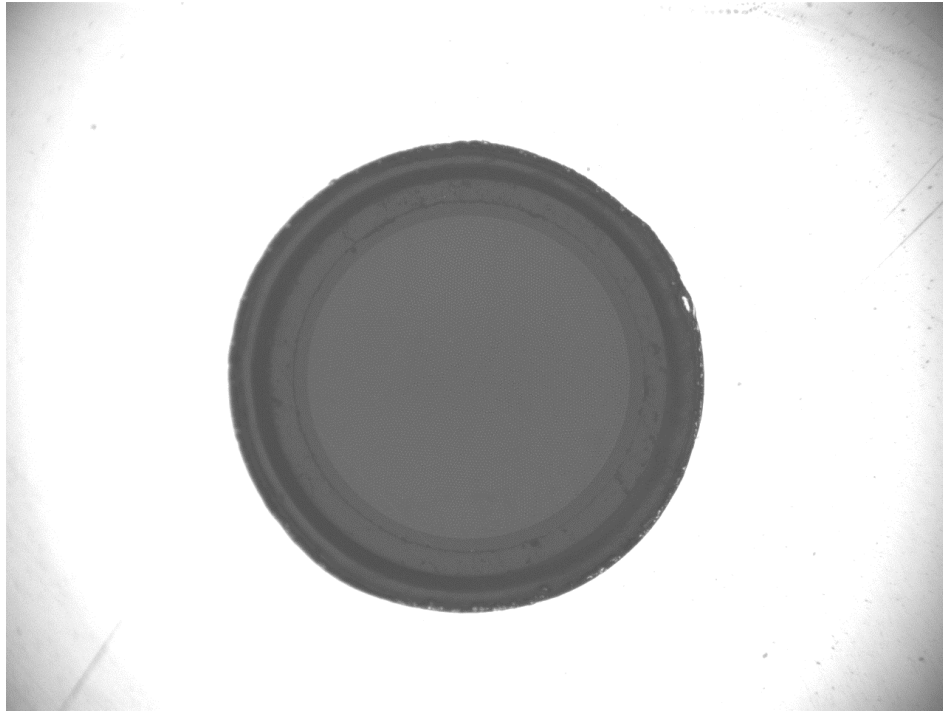
Use a 2mm allen key (same as for focus adjustment) to make small adjustments. Use the camera to track the position of the fiber.

How to Clean Fiber (Distal End)



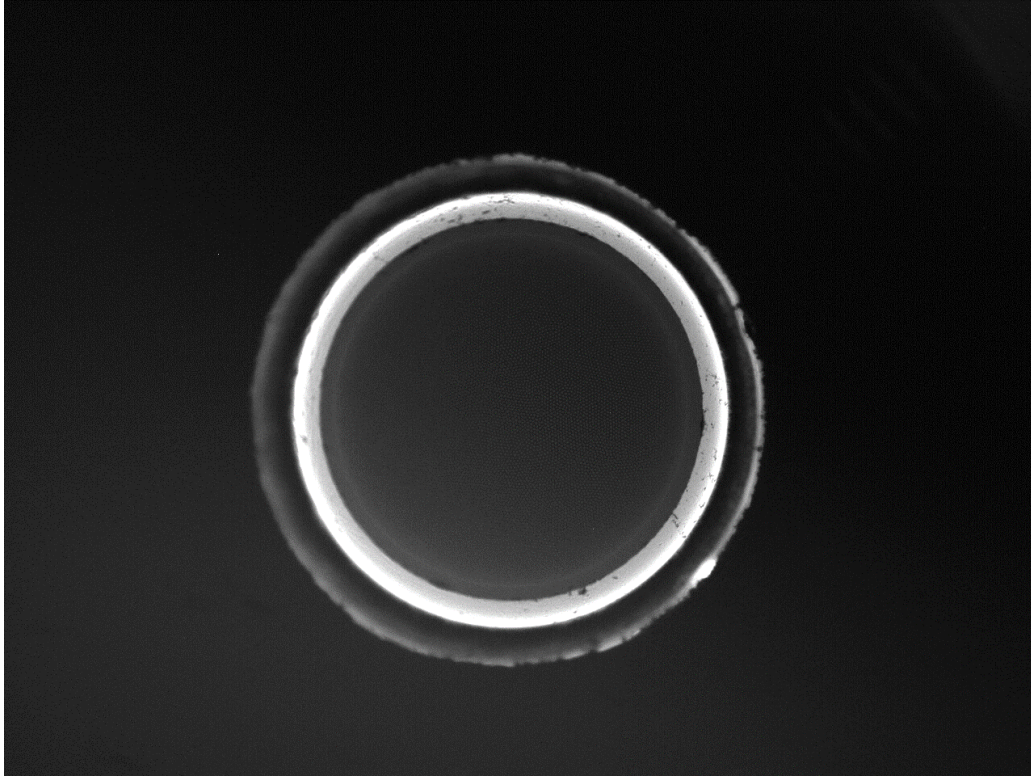
1. Turn off light source(s) on OASIS Implant. Aim the distal end to an external light source such as a ceiling light.
2. Adjust camera exposure time to get a clear and unsaturated image.
3. Look for dark spots in the image. This is dust on the image fiber.
4. Clean the distal end using a Q-tip or lens tissue with IPA. Re-check the camera image.
5. You may need to repeat step 4 several times until the entire image becomes uniform without dark spots.

How to Clean Fiber (SMA End)



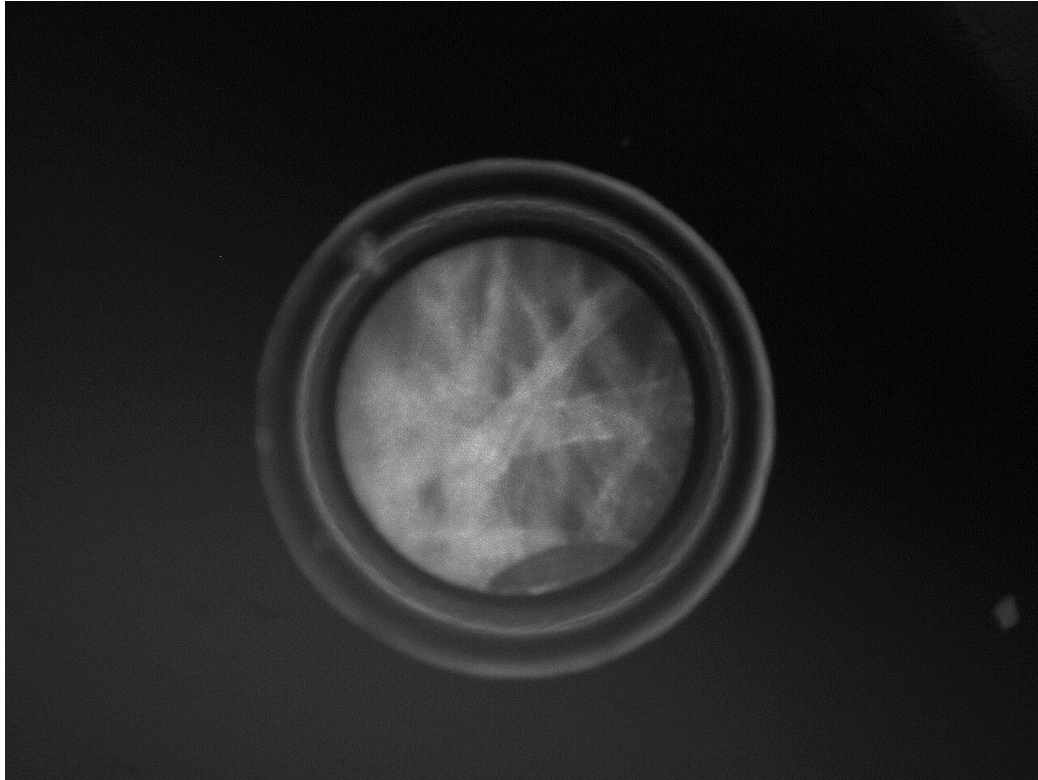
1. Move filter slider to 90R/10T position.
2. Turn on the widefield illuminator (or Polygon400 with a uniform pattern) only slightly (a couple of mA).
3. Reduce camera exposure time and gain to near minimum in order to obtain an un-saturated image.
4. Look for dark spots in the image. This is dust on the connector end of the imaging fiber.
5. Clean the connector end using lens tissue with IPA. Re-check the camera image.

Autofluorescence of Imaging Fiber



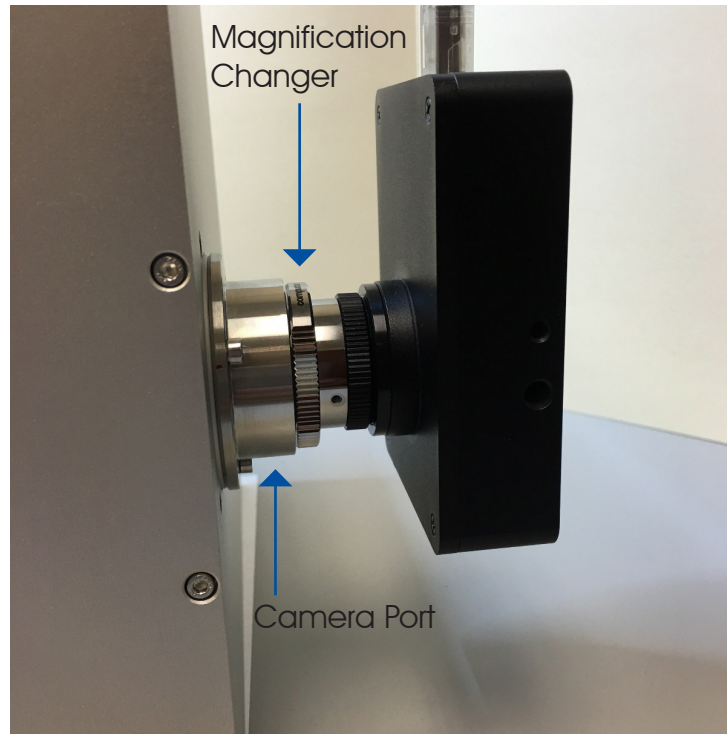
1. Move filter slider to GFP position.
2. Turn on wide-field illuminator.
3. Adjust light intensity, camera exposure time and gain till the core of the imaging fiber becomes just visible due to fluorescence of the fiber itself.
4. Note that auto fluorescence from the surrounding layers are stronger.
5. Make a note of the settings of light intensity, ET and gain. In actual experiments make sure auto fluorescence is not a significant contributor to your images.

How to Demonstrate/Verify Fluorescence Imaging



1. Use the same settings as in the auto-fluorescence demonstration.
2. Find a piece of lens cleaning tissue.
3. Bring the distal end of the imaging fiber in contact with the lens tissue. Be careful not to break the fiber.
4. You will see fluorescence image of the textures (fibers) in the lens tissue.

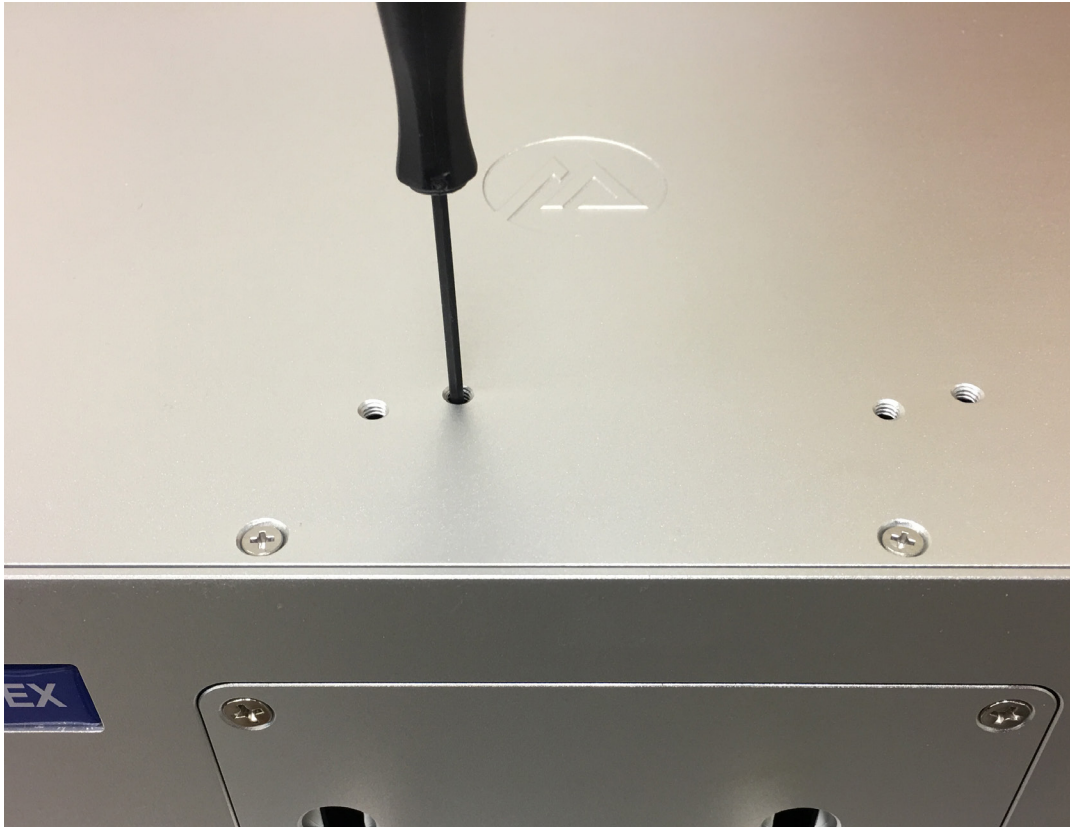
Install Magnification Changer



The magnification changer should be installed directly on the camera port. Make sure there's no ring/spacer between the camera port and magnification changer.

A C-mount camera is then mounted on the magnification changer.

Center the Illumination Field



If the illumination field is not centered at the fiber, you can adjust the corresponding filter slider to center the illumination field. This can be performed by inserting the 2mm allen key (same as focus and fiber adjustment) into the top above the filter slider.

NOTE. First raise the filter slider to the top position, then insert the allen to adjust the position. This will be more difficult when the filter slider is in a lower position.

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