

The Spatial Filters use standard microscope objectives and $\frac{3}{8}$ " diameter pinhole disks, both available from Data Optics in a variety of sizes (refer to the section following this for information on sizes available). The objective lens is mounted in a sliding tube for coarse focus adjustment. The tube and objective lens can be readily removed for inspection or replacement without disturbing the pinhole. The pinhole disk is mounted in a holder which also can be easily removed. While holders are available for glue or magnetic mounting of the pinhole disk, the magnetic holder has the advantage of allowing the disks to be replaced readily. The pinhole holders are designed so that objective lenses of extremely short focal length may be used without obstruction of the emerging beam.

Micrometer actuators on the dovetail slides have a spherical face which, coupled with the return spring and adjustable gib, gives a smooth, fine focusing, free of backlash. Micrometer motion is 0.025" per turn for units specified with English units and 0.50 mm per turn for metric units.

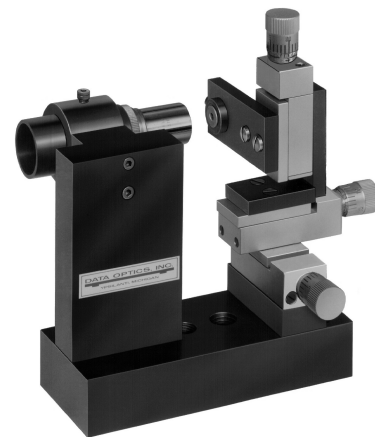
All mounts are made of black anodized aluminum tooling plate, coated with a flat black epoxy paint and have massive sections for rigidity. All mounts may be assembled right hand (as shown, standard) or left hand. Please specify when ordering (-L or -R). Mounts include one magnetic pinhole holder. Pinhole disks and objective lenses must be ordered separately.

Data Optics has developed a versatile Spatial Filter design which can be obtained in various arrangements. The base has $\frac{1}{4}$ -20 tapped holes so that it can be mounted on a 6" carrier and both $\frac{3}{8}$ -16 and $\frac{1}{2}$ -13 tapped holes for rod mounting. When mounted on a standard Data Optics carrier, the optical axis height is 5" above the rail or bench surface. Spatial filters can also be directly mounted on an optical table or breadboard.

5001 XYZ Spatial Filter

This Spatial Filter has 3-axis micrometer adjustment on the pinhole mount and a coarse 1-axis adjustment on the objective lens mount.

5001



5002 XY-Z Spatial Filter

This Spatial Filter has 2-axis micrometer adjustment on the pinhole mount and 1-axis micrometer adjustment on the objective lens mount.

5002



Spatial Filters

DATA OPTICS, INC.

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5003

5003 Z-XY-Z Beam Expander

This beam expander has a centrally mounted pinhole mount with 2-axis micrometer adjustment and objective lens mounts on either side with 1-axis micrometer adjustments.

5004 XYZ-Z Spatial Filter

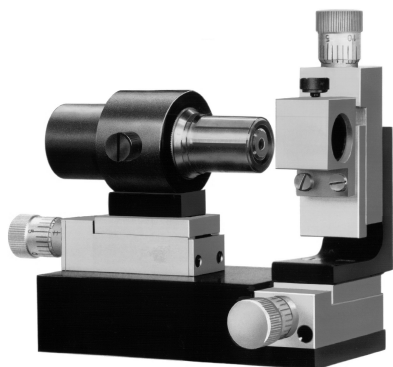
This Spatial Filter has 3-axis micrometer adjustment on the pinhole mount and 1-axis micrometer adjustment on the objective lens mount.

5005 XYZ-XYZ Spatial Filter

This Spatial Filter has 3-axis micrometer adjustment on the pinhole mount and 3-axis micrometer adjustment on the objective lens mount.

5006 XYZ-XY Spatial Filter

This Spatial Filter has 3-axis micrometer adjustment on the pinhole mount and 2-axis micrometer adjustment on the objective lens mount.



5010

5010 XY-Z Low Profile Spatial Filter

Low Profile Spatial Filter with 2-axis micrometer adjustment on the pinhole mount and 1-axis micrometer adjustment on the objective lens mount. The base has $\frac{1}{4}$ -20 tapped holes on the bottom and each side to facilitate various mounting arrangements. Optical height is 2.3" (58.4 mm).



5011

5011 XY-Z Compact Low Profile Spatial Filter

This Compact, Low Profile Spatial Filter has a tighter configuration, enabling it to be used in a wide variety of applications and set-ups. It has 2-axis micrometer adjustment on the pinhole mount and 1-axis micrometer adjustment on the objective lens mount. The base has $\frac{1}{4}$ -20 tapped holes on the bottom and each side to facilitate various mounting arrangements. Optical height is only 2.063" (52.4 mm).



5020

5020 XY-Z In-Line Spatial Filter

This Spatial Filter has all of the elements mounted directly over the center line of the rod mounting holes. It has 2-axis micrometer adjustment on the pinhole mount and 1-axis micrometer adjustment on the objective lens mount. Not for use with Series 133 carriers.

5121 XY-Z In-Line Spatial Filter on Series 76 Carrier

This Spatial Filter is identical to the 5020, but it is built directly on a Series 76 carrier with clamping knob and pinion mechanism.

Other arrangements are available on request.

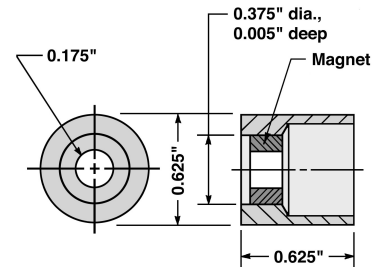
5121

Pinhole Mounts

Pinhole disks are fragile and expensive. A pinhole mount for each disk will help reduce pinhole damage due to handling. One magnetic pinhole mount is supplied with each spatial filter or beam expander.

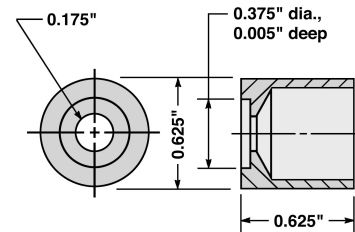
5008 Magnetic Pinhole Mount

This pinhole mount is of the magnetic type and holds standard 0.375" diameter pinhole disks as shown below. Absence of retainer rings, etc., permits the objective lens to be brought very close to the pinhole without obstruction. Disks can be easily mounted or removed from the recess provided in the mounting surface. For non-magnetic pinhole disks, 0.375" magnetic shim washers are available from Data Optics to use on top of the disk.

5008

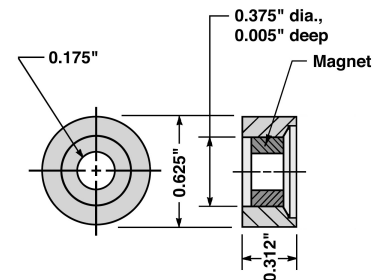
5009 Adhesive Pinhole Mount

This pinhole mount is of the adhesive type which requires the pinhole disk to be retained by glue or tape. Very similar to the magnetic pinhole mount above, with a recess provided in the mounting surface for standard 0.375" pinhole disks as shown below.

5009

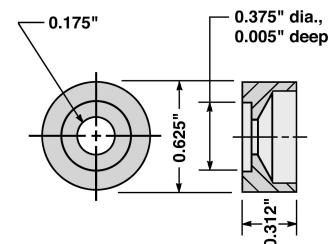
5018 Compact Magnetic Pinhole Mount

Shallow version of the 5008 Magnetic Pinhole Mount. Should be used with the 5011 Compact Low Profile Spatial Filter. May also be used with any other spatial filter where coarse adjustment of the pinhole along the Z axis is not necessary or where an extremely wide cone of light is anticipated.

5018

5019 Compact Adhesive Pinhole Mount

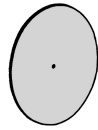
Shallow version of the 5009 Adhesive Pinhole Mount. Should be used with the 5011 Compact Low Profile Spatial Filter. May also be used with any other spatial filter where coarse adjustment of the pinhole along the Z axis is not necessary or where an extremely wide cone of light is anticipated.

5019

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Precision Pinholes

Precision pinhole disks in Standard, High Power and Super High Power models are available, both mounted and unmounted. All pinhole disks are 0.375" diameter and are also compatible with spatial filters from other manufacturers. Standard power pinholes are made of 302 stainless steel; high power pinholes are made of a special moly alloy to withstand use with Argon and Krypton lasers up to 20 watts continuous power; and super high power pinholes are made from beryllium copper with gold plating on one side and graphite coated on the other and are intended for use with high pulse power IR lasers. Please refer to the current price list for the Table of Precision Pinholes and Slits.

Objective Lenses

Microscope objective lenses for use with spatial filters and beam expanders are available individually in powers of 5X, 10X, 20X, 40X and 60X, or as a set of all 5. These objective lenses have been proven in major research laboratories to be of superior quality for spatial filtering. They can also be used in spatial filters from other manufacturers as well. Please refer to the current price list.

Film Drives and Liquid Gates

Manual 35mm Film Drive

A precision 35mm Film Drive is available from Data Optics with manual film advance for use with roll or cut film. Either perforated or unperforated film, or microfiche cards can be accommodated by the design. A vacuum connection is provided to insure film flatness against the aperture glass, if required. Optional condenser lens assembly, projection light source, lens mount and 8"x10" vacuum copy board are also available.

The film drive utilizes a standard vertical support and can be mounted on any appropriate Data Optics carrier or plain base. When used with the optional units mentioned above, a complete camera system can be assembled on a table rail or optical bench.

