

**Optics**

Lenses & Microscope Components

Coatings

Mirrors & Beamsplitters

Prisms & Polarizers

Filters

Pinholes



**Opto-mechanics**

Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro Positioners

Motorized Positioners

**Optical Instruments**

Microscopes

Light Sources

*Optics*

# Pinholes

<b>Pinholes</b>	<i>UV/Visible Laser Pinholes</i>	102
	<i>Infrared Laser Pinholes</i>	103
	<i>Precision Pinholes</i>	104
	<i>Precision Optical Slits</i>	105
	<i>Precision Air Slits</i>	105

## Optics

Lenses & Microscope Components

Coatings

Mirrors & Beamsplitters

Prisms & Polarizers

Filters

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## Opto-mechanics

Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro Positioners

Motorized Positioners

## Optical Instruments

Microscopes

Light Sources

# UV/Visible Laser Pinholes

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Lenses & Microscope Components

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Filters

Pinholes

- **Designed for most UV and visible lasers**
- **Ideal for spatial filtering**



Ealing UV/Visible Laser Pinholes are specifically designed to work with most UV and visible lasers, such as Ar Ion, HeNe, or Kr. They are made from a specially developed molybdenum alloy, allowing for high power CW usage. Typical applications include spatial filtering and holography. They are supplied in either 16mm or 25mm diameter mounts.

## Opto-mechanics

Rails

Mounting Hardware

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Motorized Positioners

## Optical Instruments

Microscopes

Light Sources

### Specifications

**Pinhole Material:** Molybdenum

**Pinhole Thickness:** 20  $\mu\text{m} \pm 2.5 \mu\text{m}$

**Pinhole Centering in Mount:**  $\pm 0.2 \text{ mm}$

**Mount Diameter:**

16 mm  $\pm 0.13 \text{ mm}$

25 mm  $\pm 0.13 \text{ mm}$

**Mount Thickness:**

16 mm: 2.6 mm  $\pm 0.25 \text{ mm}$

25 mm: 1.2 mm  $\pm 0.25 \text{ mm}$

**Laser Damage Threshold:**

CW: 76 mW/cm<sup>2</sup>

Pulsed (10 nsec): 10mJ/cm<sup>2</sup>

### High Power Laser Precision Pinholes – UV and Visible

Diameter ( $\mu\text{m}$ )	Tolerance ( $\mu\text{m}$ )	16 mm Diameter		25 mm Diameter	
		Catalog Number	Price US	Catalog Number	Price US
2.0	$\pm 0.50$	43-5347	\$95.00	43-5487	\$95.00
5.0	$\pm 1$	43-5354	\$84.00	43-5495	\$84.00
10.0	$\pm 1$	43-5364	\$80.00	43-5503	\$80.00
15.0	$\pm 1$	43-5370	\$74.00	43-5511	\$74.00
20.0	$\pm 2$	43-5388	\$74.00	43-5529	\$74.00
25.0	$\pm 3$	43-5396	\$74.00	43-5537	\$74.00
35.0	$\pm 4$	43-5404	\$74.00	43-5545	\$74.00
50.0	$\pm 5$	43-5412	\$74.00	43-5552	\$74.00
60.0	$\pm 6$	43-5420	\$74.00	43-5560	\$74.00
70.0	$\pm 6$	43-5438	\$74.00	43-5578	\$74.00
80.0	$\pm 6$	43-5446	\$74.00	43-5586	\$74.00
90.0	$\pm 6$	43-5453	\$74.00	43-5594	\$74.00
100.0	$\pm 10$	43-5461	\$74.00	43-5602	\$74.00
200.0	$\pm 10$	43-5479	\$74.00	43-5610	\$74.00

### UV/Visible Laser Pinhole Kits

Catalog Number	Mount Diameter (mm)	Pinhole Sizes ( $\mu\text{m}$ )	Price US
43-6717	16	5, 10, 25, 35, 50, 100	\$460.00
43-6725	25	5, 10, 25, 35, 50, 100	\$460.00

# Infrared Laser Pinholes

- **Designed for most infrared lasers**
- **Ideal for spatial filtering**



These pinholes are provided for infrared wavelengths, including YAG and CO<sub>2</sub> lasers. They are capable of withstanding high power densities of up to 50 MW/cm<sup>2</sup>.

The copper substrate has been coated on the incident side with gold 1 μm thick. The reverse side is coated black to reduce reflections. These pinholes are supplied mounted in 16 mm and 25 mm mounts.

Ealing Infrared Laser Precision Pinholes are manufactured using high precision laser drilling techniques to ensure reproducible quality. To clean these components, they can be gently air blown or immersed in an ultrasonic water bath. Note that acetone should not be used.

## Specifications

**Pinhole Material:** Copper  
**Pinhole Diameter Tolerance:** ±2.5 μm  
**Pinhole Centering in Mount:** ±0.2 mm  
**Mount Diameter:**  
 16 mm ± 0.13 mm  
 25 mm ± 0.13 mm  
**Mount Thickness:**  
 16 mm: 2.6 mm ± 0.25 mm  
 25 mm: 1.2 mm ± 0.25 mm  
**Laser Damage Threshold:**  
 CW: 50 mW/cm<sup>2</sup> @ 1064 nm

## Adjustable Pinhole Mounts



Adjustable pinhole mounts are also available on page 114.

## Infrared Laser Pinholes

Diameter (μm)	Tolerance (μm)	Thickness (μm)	16 mm Diameter		25 mm Diameter	
			Catalog Number	Price US	Catalog Number	Price US
5.0	±1	25	43-5628	\$98.00	43-5768	\$98.00
10.0	±1	25	43-5636	\$98.00	43-5776	\$98.00
25.0	±1	50	43-5644	\$72.00	43-5784	\$72.00
35.0	±1	50	43-5651	\$72.00	43-5792	\$72.00
50.0	±1	50	43-5669	\$72.00	43-5800	\$72.00
60.0	±1	50	43-5677	\$72.00	43-5818	\$72.00
70.0	±1	50	43-5685	\$72.00	43-5826	\$72.00
80.0	±1	50	43-5693	\$72.00	43-5834	\$72.00
90.0	±1	50	43-5701	\$72.00	43-5842	\$72.00
100.0	±1	50	43-5719	\$72.00	43-5859	\$72.00
200.0	±1	50	43-5727	\$72.00	43-5867	\$72.00
300.0	±1	50	43-5735	\$72.00	43-5875	\$72.00
400.0	±1	50	43-5743	\$72.00	43-5883	\$72.00
500.0	±1	50	43-5750	\$72.00	43-5891	\$72.00

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- Optical Instruments
- Microscopes
- Light Sources

# Precision Pinholes



- **Designed for general laboratory use**
- **Range of pinhole sizes available**

Precision Pinholes can be used in a wide variety of optical applications, including spatial filtering, creating point light sources, photography and image analysis and processing.

Ealing Precision Pinholes are available with diameters from 1 to 1000  $\mu\text{m}$ . Each pinhole aperture is round, calibrated and free from edge distortion. The aperture is centered to  $\pm 0.13$  mm within a stainless steel 302 series disc 9.5 mm diameter.

Pinholes are supplied mounted in 16 mm and 25 mm black, anodized mounts.

## Specifications

**Pinhole Thickness:** 13  $\mu\text{m} \pm 2.5 \mu\text{m}$

**Pinhole Centering in Mount:**  $\pm 0.2$  mm

**Mount Diameter:**

16 mm  $\pm 0.13$  mm

25 mm  $\pm 0.13$  mm

**Mount Thickness:**

16 mm: 2.6 mm  $\pm 0.25$  mm

25 mm: 1.2 mm  $\pm 0.25$  mm

## Precision Pinholes

Diameter ( $\mu\text{m}$ )	Tolerance ( $\mu\text{m}$ )	16 mm Diameter		25 mm Diameter	
		Catalog Number	Price US	Catalog Number	Price US
1.0	$\pm 0.50$	43-5008	\$99.00	43-5172	\$99.00
2.5	$\pm 0.75$	43-5016	\$79.00	43-5180	\$79.00
5.0	$\pm 1$	43-5024	\$65.00	43-5198	\$65.00
10.0	$\pm 1$	43-5032	\$54.00	43-5206	\$54.00
12.5	$\pm 1$	43-5040	\$54.00	43-5214	\$54.00
15.0	$\pm 2$	43-5057	\$49.00	43-5222	\$49.00
17.5	$\pm 2$	43-5065	\$49.00	43-5230	\$49.00
25.0	$\pm 3$	43-5073	\$49.00	43-5248	\$49.00
35.0	$\pm 4$	43-5081	\$49.00	43-5255	\$49.00
50.0	$\pm 5$	43-5099	\$49.00	43-5263	\$49.00
70.0	$\pm 7$	43-5107	\$49.00	43-5271	\$49.00
100.0	$\pm 10$	43-5115	\$49.00	43-5289	\$49.00
200.0	$\pm 20$	43-5123	\$49.00	43-5297	\$49.00
400.0	$\pm 40$	43-5131	\$49.00	43-5305	\$49.00
600.0	$\pm 60$	43-5149	\$49.00	43-5313	\$49.00
800.0	$\pm 80$	43-5156	\$49.00	43-5321	\$49.00
1000.0	$\pm 100$	43-5164	\$49.00	43-5339	\$49.00

## Precision Pinhole Kits

Mount Diameter (mm)	Pinhole Sizes ( $\mu\text{m}$ )	Catalog Number	Price US
16	5, 10, 25, 35, 50, 100	43-6691	\$315.00
25	5, 10, 25, 35, 50, 100	43-6709	\$315.00

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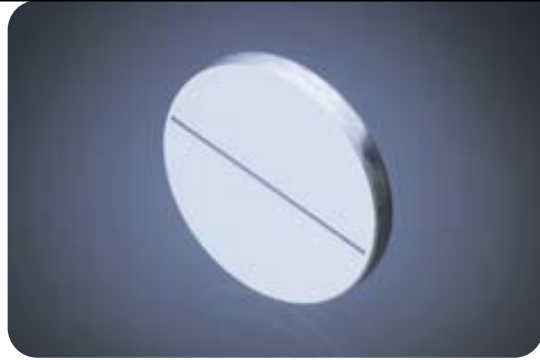
### Optical Instruments

Microscopes

Light Sources

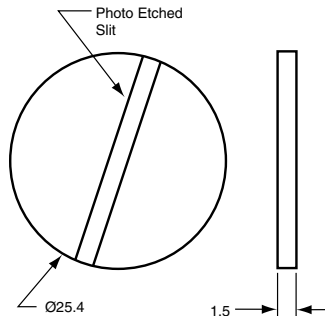
# Precision Optical Slits

Precision Optical Slits are commonly used for generating a line spread function, as entrance and exit slits in spectrophotometers and in a wide range of imaging and alignment applications. Ealing Precision Optical Slits are photo-etched on a chromium-coated optical glass substrate. Slits of widths 10-500  $\mu\text{m}$  extend across the whole substrate diameter of 25.4 mm.



## Specifications

**Diameter:** 25.4 mm  
**Thickness:** 1.5 mm  
**Background transmission:**  
 Optical density 3  
**Slit width Tolerance:**  $\pm 5\%$



## Precision Optical Slits

Catalog Number	Slit Width ( $\mu\text{m}$ )	Price US
43-5925	10	\$150.00
43-5941	25	\$150.00
43-5966	50	\$150.00
43-5974	100	\$150.00
43-5982	200	\$150.00

# Precision Air Slits

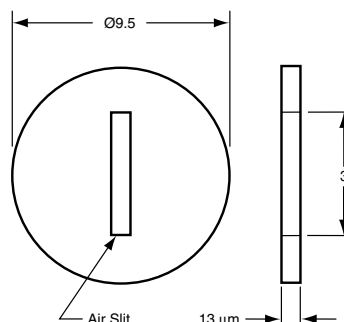
Precision Air Slits are micro-machined from solid opaque material. They can be used in all the same applications as Optical Slits. Since they do not rely on transmission through glass they are not wavelength dependent. In addition there is no coating and hence no possibility of pinhole effects in high power applications. Ealing Precision Air Slits are individually micro-machined in a 9.5 mm diameter stainless steel disc.



Magnified photo showing edge quality of Precision Air Slit

## Specifications

**Diameter:** 9.5 mm  
**Thickness:** 13  $\mu\text{m}$   
**Slit length:** 3 mm  
**Dimensions Tolerance:**  $\pm 10\%$



## Precision Air Slits

Catalog Number	Slit Width ( $\mu\text{m}$ )	Price US
43-6022	5	\$101.00
43-6030	10	\$101.00
43-6048	25	\$101.00
43-6055	50	\$74.00
43-6063	75	\$74.00
43-6071	100	\$74.00
43-6089	200	\$74.00
43-6097	300	\$74.00
43-6105	400	\$74.00
43-6113	500	\$74.00

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Lenses & Microscope Components

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Opto-mechanics

Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro Positioners

Motorized Positioners

Optical Instruments

Microscopes

Light Sources