

MaxMirror® Ultra-broadband Mirrors

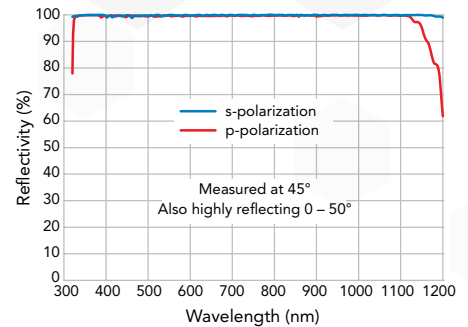


Semrock's patented MaxMirror is a unique high-performance laser mirror that is optimized for life sciences applications. This mirror covers an ultra-broad range of wavelengths (350 – 1100nm) – it can replace three or more conventional laser mirrors. U.S. Patent No. 6,894,838.

- › Very highly reflecting (>99%) over:
 - › Near-UV, all Visible, and Near-IR wavelengths
 - › All states of polarization
 - › All angles from 0 to 50° inclusive – simultaneously
- › Low-scattering
- › 6 mm substrate thickness, compatible with popular mounts



MAXMIRROR PERFORMANCE ACTUAL MEASURED DATA



	English Units		Metric Units		Absolute Surface Flatness	Price
	Diameter	Part Number	Diameter	Part Number		
New	12.7 mm (0.5")	MM3-311-12.7	12.5 mm	MM3-311-12.5	< λ/10	\$199
New	12.7 mm (0.5")	MM3-311S-12.7	12.5 mm	MM3-311S-12.5	< λ/5	\$99
New	25.4 mm (1.0")	MM3-311-25.4	25 mm	MM3-311-25	< λ/10	\$349
New	25.4 mm (1.0")	MM3-311S-25.4	25 mm	MM3-311S-25	< λ/5	\$179

Common Specifications

Property	Value	Comment
Wavelength Range	350 – 1100 nm	All specifications apply
Angle of Incidence Range	0° – 50°	
Average Reflectivity	> 99.0%	
Laser Damage Threshold	1 J/cm ² @ 355 nm 2 J/cm ² @ 532 nm 6 J/cm ² @ 1064 nm 1 J/cm ² @ 532 nm (S-Grade only spec)	10 ns pulse width
Substrate Material	Fused Silica	
Coating Type	"Hard" ion-beam-sputtered	
Clear Aperture	> 90% of Outer Diameter	
Outer Diameter Tolerance	+ 0.0 / - 0.1 mm (12.5 mm; 12.7 mm) + 0.0 / - 0.25 mm (25.0 mm; 25.4 mm)	
Thickness and Tolerance	6.0 ± 0.2 mm	
Mirror Side Surface Flatness	< λ/10 (12.5 mm; 12.7 mm; 25.0 mm; 25.4 mm) < λ/5 (12.5 mm; 12.7 mm; 25.0 mm; 25.4 mm) (S-Grade)	Measured at λ = 633 nm within clear aperture
Mirror Side Surface Quality	20-10 scratch-dig (12.5 mm; 12.7 mm; 25.0 mm; 25.4 mm) 40-20 scratch-dig (12.5 mm; 12.7 mm; 25.0 mm; 25.4 mm) (S-Grade)	Measured within clear aperture
Mirror Side Bevel	0.3 mm maximum	
Pulse Dispersion	The MaxMirror will not introduce appreciable pulse broadening for most laser pulses that are > 1 picosecond; however, pulse distortion is likely for significantly shorter laser pulses, including femtosecond pulses.	
Reliability and Durability	Ion-beam-sputtered, hard-coating technology with unrivaled filter life. MaxMirror ultra-broadband mirrors are rigorously tested and proven to MIL-STD-810F and MIL-C-48497A environmental standards.	

Polarizers
Mirrors
Edge Filters
Dichroic Beamsplitters
Laser-line Filters
Laser Diode Filters
NIR Filters
Notch Filters
Lamp Clean-up Filters
More

General Purpose Mirrors



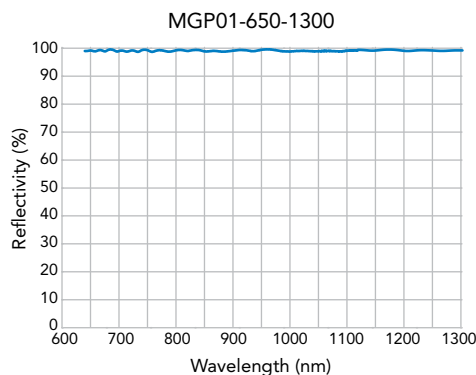
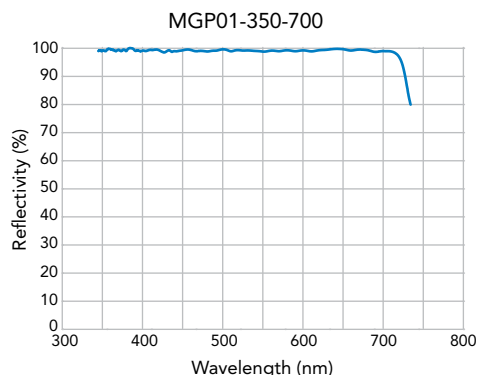
Semrock general purpose mirrors offer the ability to have hard-coated mirrors in a thinner-than-standard thickness. These mirrors can be used in microscopes or by researchers looking to do beam steering. With high reflectivity and convenient 25.2 mm x 35.6 mm x 1.05 mm size, these MGP mirrors allow the flexibility needed in a laboratory or research setting.

- › High reflectivity over the visible or near-infrared region
- › Ideal mirror for photo-bleaching samples
- › Imaging flat (~100 m radius of curvature)
- › Proven no burn-out durability – for lasting and reliable performance

Reflection Band	Flatness	Size	Glass Thickness	Part Number	Price
$R_{avg} > 98\%$ 350–700 nm	Imaging	25.2 x 35.6 mm	1.05 mm	MGP01-350-700-25x36	\$355
$R_{avg} > 98\%$ 650–1300 nm	Imaging	25.2 x 35.6 mm	1.05 mm	MGP01-650-1300-25x36	\$355



ACTUAL MEASURED DATA FROM TYPICAL FILTERS IS SHOWN



Common Specifications

Property	Value	Comment
Angle of Incidence	45° ± 1.5°	
Surface Figure	Imaging Flat	Contributes less than 1.5x Airy Disk diameter to the RMS spot size of a focused, reflected beam with a diameter up to 10 mm.
Substrate Material	Fused Silica	
Coating Type	“Hard” ion-beam-sputtered	
Clear Aperture	80% of glass dimension	Elliptical
Transverse Dimension	25.2 x 35.6 mm +/- 0.1mm	
Thickness & Tolerance	1.05 mm +/- 0.05 mm	
Surface Quality	60-40 Scratch-dig	
Pulse Dispersion	The General Purpose Mirrors will not introduce appreciable pulse broadening for most laser pulses that are > 1 picosecond; however, pulse distortion is likely for significantly shorter laser pulses, including femtosecond pulses.	
Reliability & Durability	Ion-beam-sputtered, hard-coating technology with unrivaled filter life. General Purpose Mirrors are rigorously tested and proven to MIL-STD-810F and MIL-C-48497A environmental standards.	
Orientation	Reflective coating side should face towards light source (see page 38).	

Able to mount in filter cubes (see page 31) or Semrock’s Filter Holder (see page 75).