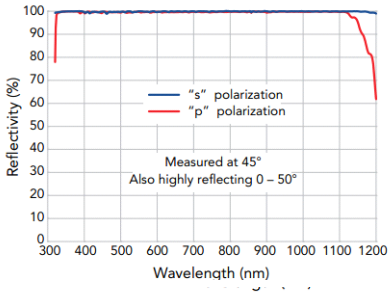
The MaxMirror is a unique high-performance laser mirror that covers an ultra-broad range of wavelengths – it can replace three or more conventional laser mirrors. In fact, it is so unique that it is patented (U.S. patent No. 6,894,838). The MaxMirror is a winner of the prestigious Photonics Circle of Excellence award, reserved for the most innovative new products of the year. And there is still nothing else like it on the market!

- **Very high reflectivity for:**
  - Near-UV, all Visible, and Near-IR wavelengths
  - All states of polarization
  - All angles from 0 to 50° inclusive – simultaneously
- High laser damage threshold and proven reliability
- Low-scattering

Winner of the 2003 Photonics Circle of Excellence award

Diameter	Absolute Surface Flatness	Mirror Side Part Number	Price
25.0 mm	< λ / 10	MM1-311-25	$275
25.0 mm	< λ / 5	MM1-311S-25	$165
25.4 mm (1.00")	< λ / 10	MM1-311-25.4	$275
25.4 mm (1.00")	< λ / 5	MM1-311S-25.4	$165
50.8 mm (2.00")	< λ / 4	MM1-311-50.8	$985
50.8 mm (2.00")	< λ / 2	MM1-311S-50.8	$495

Typical MaxMirror spectrum
Actual measured data shown.



Common Specifications

Property	Value	Comment
Wavelength Range	350 -1100 nm	*All specifications apply*
Wide Angle of Incidence Range	0 - 50°	Range over which Wide Angle Reflectivity specifications are met
Wide Angle Reflectivity	> 98.5%	For unpolarized light
	> 98.0%	For "s" polarization
	> 98.0%	For "p" polarization
Standard Angle of Incidence	45.0 ± 2.5° 0.0 ± 5.0°	Range over which Standard Reflectivity specifications are met
Standard Reflectivity	> 99.0%	For unpolarized light
	> 98.5% (> 99% typical)	For "s" polarization
	> 98.5% (> 99% typical)	For "p" polarization
Laser Damage Threshold	1 J/cm^2 @ 355 nm 2 J/cm^2 @ 532 nm 6 J/cm^2 @ 1064 nm	10 ns pulse width. *(see page 106)*
Substrate Material	NBK7 or better	
Coating Type	"Hard" ion-beam-sputtered	
Clear Aperture	> 80% of Outer Diameter	
Outer Diameter	25.0 or 25.4 or 50.8 mm + 0.0 / − 0.25 mm	
Thickness	9.52 ± 0.25 mm	Nominally 3/8"
Mirror Side Surface Flatness	See table above	Measured at λ = 633 nm
Mirror Side Surface Quality	20-10 scratch-dig (standard grade) or 40-20 (S-grade)	Measured within clear aperture
Mirror Side Bevel	0.75 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.	

ATFilms Ultra-high Reflectivity Mirrors

NEW

Semrock now offers ultra-high performance mirrors produced by ATFilms. These ultra-high reflectivity mirrors are manufactured with cutting-edge ion beam sputtering technology for use in demanding laser applications. The mirrors have reflectivities ranging from 99.97% to 99.999% depending on wavelength and can be used for cavities with finesses of more than 300,000 (wavelength dependent).

Using ATFilms' renowned market-leading substrate polishing capabilities applied with hard coatings, these mirrors are able to provide very low absorption scatter losses (as low as 1ppm) and high laser damage threshold levels. Semrock offers five prominent laser wavelengths from 355 – 1550 nm.

Contact ATFilms for additional wavelengths at www.atfilms.com.

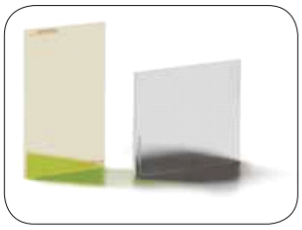
- Ultra-high reflectivity for common laser wavelengths
- Scatter & absorption as low as 1ppm
- Ideal for cavity ring-down (CRD) spectroscopy applications
- Available in flat (∞) or curved (50cm or 100cm radius of curvature) surfaces

Laser Line	Reflectivity	Curvature	Part Number
355 nm	99.97%	∞	HRM01-355RINF-25.4
		50 cm	HRM01-355R50-25.4
		100 cm	HRM01-R100-25.4
405 nm	99.995%	∞	HRM01-405RINF-25.4
		50 cm	HRM01-405R50-25.4
		100 cm	HRM01-405R100-25.4
532 nm	99.997%	∞	HRM01-532RINF-25.4
		50 cm	HRM01-532R50-25.4
		100 cm	HRM01-532R0-25.4
1064 nm	99.999%	∞	HRM01-1064RINF-25.4
		50 cm	HRM01-1064R50-25.4
		100 cm	HRM01-1064R100-25.4
1550 nm	99.999%	50 cm	HRM01-1550R50-25.4
		100 cm	HRM01-1550R100-25.4

Common Specifications

Property	Value	Comment
Angle of Incidence	0.0° ± 1.5°	
Surface Figure	λ/10	Side 1, per inch with radius of curvature removed
RMS Surface Roughness	< 1Å	Side 1
Wedge	< 10 arcmin	
Substrate Material	Fused Silica	
Coating Type	"Hard" ion-beam-sputtered	
Clear Aperture	> 80% of outer diameter	
Outer Diameter	25.4 mm +0/-0.1 mm	
Thickness	6.35 nm +/- 0.25 mm	
Surface Quality	10-5 (Side1) 20-10 (Side 2)	Measured within clear aperture
Reliability and Durability	Ion-beam-sputtered, hard-coating technology with unrivaled filter life. Ultra-high reflectivity mirrors are rigorously tested and proven to MIL-STD-810F and MIL-C-48497A environmental standards.	

NEW General Purpose Mirrors

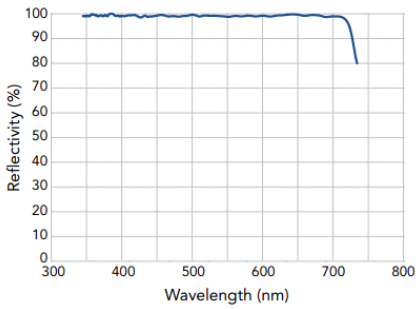


Semrock general purpose mirrors offer the ability to have hard-coated mirrors in a thinner-than-standard thickness. These mirrors can be used in microscopes or by researchers looking to do beam steering. With high reflectivity and convenient 25.2 mm x 35.6 mm x 1.05mm size, these MGP mirrors allow the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

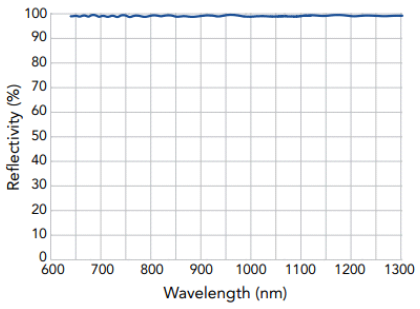
- High reflectivity over the visible or near-infrared region
- Ideal mirror for photo-bleaching samples
- Imaging flat (~ 100 m radius of curvature)
- Proven no burn-out durability – for lasting and reliable performance

Reflection Band	Flatness	Size	Glass Thickness	Part Number	Price	
R_{avg} > 98% 350-700 nm	Imaging	25.2 x 35.6 mm	1.1 mm	MGP01-350-700-25x36	$345	NEW
R_{avg} > 98% 650-1300 nm	Imaging	25.2 x 35.6 mm	1.1 mm	MPG01-650-1300-25x36	$345	NEW

Actual measured data from typical filters is shown



MGP01-350-700



MGP01-650-1300

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	Fused Silica	
Coating Type	"Hard" ion-beam-sputtered	
Clear Aperture	80% of glass dimension	
Glass Size	25.2 mm x 35.6 ± 0.1mm	
Glass Thickness	1.05 mm ± 0.05 mm	
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.	