

## LASER MIRRORS

Laser mirrors for femtosecond applications are designed to have a broad operating wavelength range and linear phase versus frequency characteristics (*low reflectance group delay dispersion (GDD)*). The coating is a single layer dielectric and has no phase shift over the operating wavelength region.

High reflectivity mirrors always have higher reflection broader operating region and lower pulse distortion for s-polarization than for p-polarization for the same dielectric coating. If possible use the mirrors with s-polarized beam. Our standard mirrors are suitable for fundamental Ti:Sapphire and Yb:KGW or KYW lasers and their doubled, tripled or quadrupled frequencies.

### SUBSTRATE

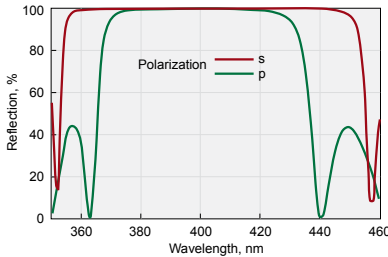
Material	UV grade Fused Silica or BK7 glass
S1 Surface Flatness	
S1 Surface Quality	20–10 scratch & dig (MIL-PRF-13830B)
S2 Surface Quality	Commercial polish
Diameter Tolerance	+0.00 mm -0.12 mm
Thickness Tolerance	±0.25 mm
Wedge	< 3 min
Chamfer	0.3 mm at 45° typical

### COATING

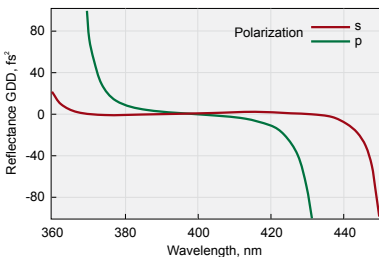
Technology	Electron beam multilayer dielectric or Ion beam sputtering
Adhesion and Durability	Per MIL-C-675A. Insoluble in lab solvents
Clear Aperture	Exceeds central 85% of diameter
Coating	Hard dielectric High Reflection R>99.5
Angle of Incidence	0 or 45±3°
Designed for average polarization	$R=(R_s+R_p)/2$
Laser Damage Threshold	>100 mJ/cm <sup>2</sup> , 50 fsec pulse, 800 nm typical
Coated Surface Flatness	

## Laser Line Wavelength

Substrate material: **BK7 grade A**



HR>99.5%@380-420 nm, AOI=45°



HRsp@380-420 GDD, AOI=45°

Size: **12.7 × 3 mm**

Wavelength, nm	R, % (s+p)/2 AOI=0° / AOI=45°	Catalogue number	
		AOI=0°	AOI=45°
380-420	99.8 / 99.5	031-0400-i0	031-0400
500-530	99.8 / 99.5	031-0515-i0	031-0515
760-840	99.8 / 99.5	031-0800-i0	031-0800
1000-1060	99.8 / 99.5	031-1030-i0	031-1030

Size: **25.4 × 6 mm**

Wavelength, nm	R, % (s+p)/2 AOI=0° / AOI=45°	Catalogue number	
		AOI=0°	AOI=45°
380-420	99.8 / 99.5	032-0400-i0	032-0400
500-530	99.8 / 99.5	032-0515-i0	032-0515
760-840	99.8 / 99.5	032-0800-i0	032-0800
1000-1060	99.8 / 99.5	032-1030-i0	032-1030

Size: **50.8 × 8 mm**

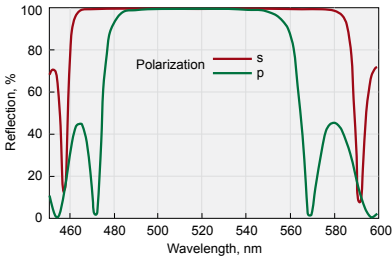
Wavelength, nm	R, % (s+p)/2 AOI=0° / AOI=45°	Catalogue number	
		AOI=0°	AOI=45°
380-420	99.8 / 99.5	035-0400-i0	035-0400
500-530	99.8 / 99.5	035-0515-i0	035-0515
760-840	99.8 / 99.5	035-0800-i0	035-0800
1000-1060	99.8 / 99.5	035-1030-i0	035-1030

Size: **76.2 × 12.7 mm**

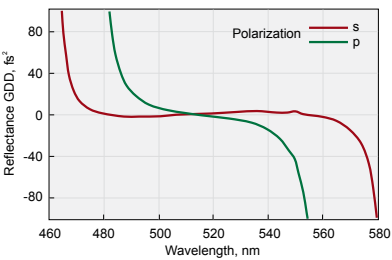
Wavelength, nm	R, % (s+p)/2 AOI=0° / AOI=45°	Catalogue number	
		AOI=0°	AOI=45°
380-420	99.8 / 99.5	037-0400-i0	037-0400
500-530	99.8 / 99.5	037-0515-i0	037-0515
760-840	99.8 / 99.5	037-0800-i0	037-0800
1000-1060	99.8 / 99.5	037-1030-i0	037-1030

## Laser Line Wavelength

Substrate material:  
UV grade Fused Silica



HR>99.5%@500-530 nm, AOI=45°



HRsp@500-530 GDD, AOI=45°

Recommended for high power laser applications operating in UV region.

Size: 12.7 × 3 mm

Wavelength, nm	R, % (s+p)/2		Catalogue number	
	AOI=0°	AOI=45°	AOI=0°	AOI=45°
257-275	99.0 / 99.0	99.8 / 99.5	041-0266-i0	041-0266
333-353	99.8 / 99.5	99.8 / 99.5	041-0343-i0	041-0343
380-420	99.8 / 99.5	99.8 / 99.5	041-0400-i0	041-0400
500-530	99.8 / 99.5	99.8 / 99.5	041-0515-i0	041-0515
760-840	99.8 / 99.5	99.8 / 99.5	041-0800-i0	041-0800
1000-1060	99.8 / 99.5	99.8 / 99.5	041-1030-i0	041-1030

Size: 25.4 × 6 mm

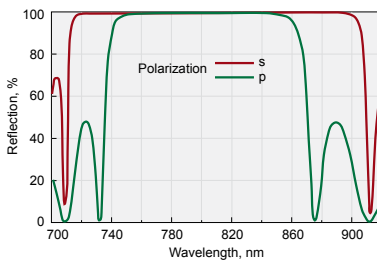
Wavelength, nm	R, % (s+p)/2		Catalogue number	
	AOI=0°	AOI=45°	AOI=0°	AOI=45°
257-275	99.0 / 99.0	99.8 / 99.5	042-0266-i0	042-0266
333-353	99.8 / 99.5	99.8 / 99.5	042-0343-i0	042-0343
380-420	99.8 / 99.5	99.8 / 99.5	042-0400-i0	042-0400
500-530	99.8 / 99.5	99.8 / 99.5	042-0515-i0	042-0515
760-840	99.8 / 99.5	99.8 / 99.5	042-0800-i0	042-0800
760-840	99.9 / 99.8	99.8 / 99.5	042-0800HHR-i0	042-0800HHR
1000-1060	99.8 / 99.5	99.8 / 99.5	042-1030-i0	042-1030

Size: 50.8 × 8 mm

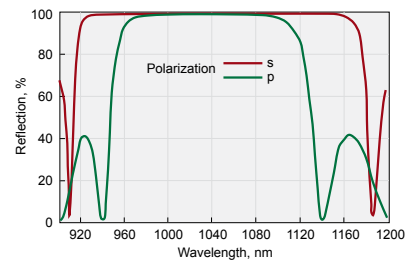
Wavelength, nm	R, % (s+p)/2		Catalogue number	
	AOI=0°	AOI=45°	AOI=0°	AOI=45°
257-275	99.0 / 99.0	99.8 / 99.5	045-0266-i0	045-0266
333-353	99.8 / 99.5	99.8 / 99.5	045-0343-i0	045-0343
380-420	99.8 / 99.5	99.8 / 99.5	045-0400-i0	045-0400
500-530	99.8 / 99.5	99.8 / 99.5	045-0515-i0	045-0515
760-840	99.8 / 99.5	99.8 / 99.5	045-0800-i0	045-0800
1000-1060	99.8 / 99.5	99.8 / 99.5	045-1030-i0	045-1030

Size: 76.2 × 12.7 mm

Wavelength, nm	R, % (s+p)/2		Catalogue number	
	AOI=0°	AOI=45°	AOI=0°	AOI=45°
257-275	99.0 / 99.0	99.8 / 99.5	047-0266-i0	047-0266
333-353	99.8 / 99.5	99.8 / 99.5	047-0343-i0	047-0343
380-420	99.8 / 99.5	99.8 / 99.5	047-0400-i0	047-0400
500-530	99.8 / 99.5	99.8 / 99.5	047-0515-i0	047-0515
760-840	99.8 / 99.5	99.8 / 99.5	047-0800-i0	047-0800
1000-1060	99.8 / 99.5	99.8 / 99.5	047-1030-i0	047-1030



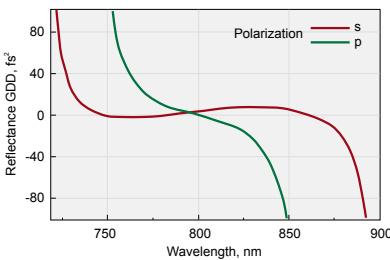
HR>99.5% @ 760-840 nm, AOI=45°



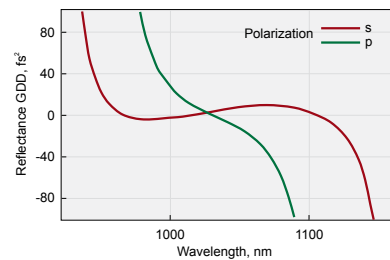
HR>99.5% @ 1000-1060 nm, AOI=45°

### RELATED PRODUCTS

Adapter for Mirror at 45° 840-0115  
See page 8.72



HRsp@760-840 GDD, AOI=45°



HRsp@1000-1060 GDD, AOI=45°