

FemtoLine Laser Optics

LASER MIRRORS

Laser mirrors for femtosecond applications are designed to have a broad operating wavelength range and linear phase versus frequency characteristics (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

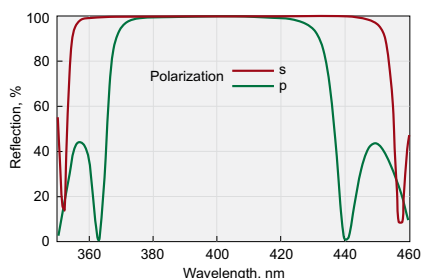
Material	UV grade Fused Silica or BK7 glass
S1 surface flatness	$\lambda/10$ at 633 nm
S1 surface quality	20-10 scratch & dig (MIL-PRF-13830B)
S2 surface quality	Commercial polish
Diameter tolerance	+0.00 mm -0.12 mm
Thickness tolerance	± 0.25 mm
Wedge	< 3 min
Chamfer	0.3 mm at 45° typical

Coating

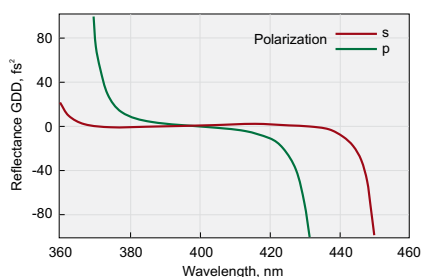
Technology	Electron beam multilayer dielectric
Adhesion and durability	Per MIL-C-675A. Insoluble in lab solvents
Clear aperture	Exceeds central 85% of diameter
Angle of incidence	0 or 45±3°
Designed for average polarization	$R=(R_s+R_p)/2$
Laser damage threshold	>100 mJ/cm², 50 fsec pulse, 50 Hz, 800 nm typical
Coated surface flatness	$\lambda/10$ at 633 nm over clear aperture

LOW GDD ULTRAFAST MIRRORS

Substrate material: BK7 grade A



HR>99.5% @ 380 – 420 nm, AOI=45°



HRsp @ 380 – 420 GDD, AOI=45°

Related Products

Adapter for Mirror at 45° 840-0115

Find more at EksmaOptics.com

Wavelength, nm	AOI=0°		AOI=45°	
	R, % (s+p)/2	Catalogue number	R, % (s+p)/2	Catalogue number

Size – Ø12.7 × 3 mm

380 – 420	99.7	031-0400-i0	99.5	031-0400
500 – 530	99.7	031-0515-i0	99.5	031-0515
760 – 840	99.7	031-0800-i0	99.5	031-0800
1000 – 1060	99.7	031-1030-i0	99.5	031-1030

Size – Ø12.7 × 6 mm

380 – 420	99.7	031-0400T6-i0	99.5	031-0400T6
500 – 530	99.7	031-0515T6-i0	99.5	031-0515T6
760 – 840	99.7	031-0800T6-i0	99.5	031-0800T6
1000 – 1060	99.7	031-1030T6-i0	99.5	031-1030T6

Size – Ø25.4 × 6 mm

380 – 420	99.7	032-0400-i0	99.5	032-0400
500 – 530	99.7	032-0515-i0	99.5	032-0515
760 – 840	99.7	032-0800-i0	99.5	032-0800
1000 – 1060	99.7	032-1030-i0	99.5	032-1030

Size – Ø50.8 × 8 mm

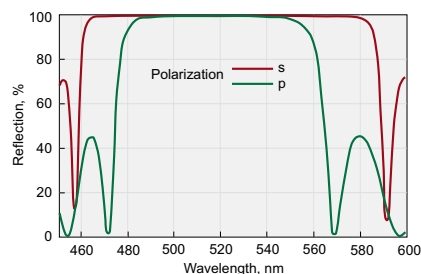
380 – 420	99.7	035-0400-i0	99.5	035-0400
500 – 530	99.7	035-0515-i0	99.5	035-0515
760 – 840	99.7	035-0800-i0	99.5	035-0800
1000 – 1060	99.7	035-1030-i0	99.5	035-1030

Size – Ø76.2 × 12.7 mm

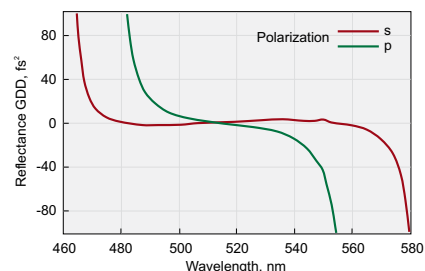
380 – 420	99.7	037-0400-i0	99.5	037-0400
500 – 530	99.7	037-0515-i0	99.5	037-0515
760 – 840	99.7	037-0800-i0	99.5	037-0800
1000 – 1060	99.7	037-1030-i0	99.5	037-1030

LOW GDD ULTRAFAST MIRRORS

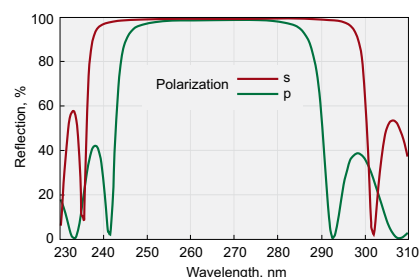
Substrate material: UV grade Fused Silica



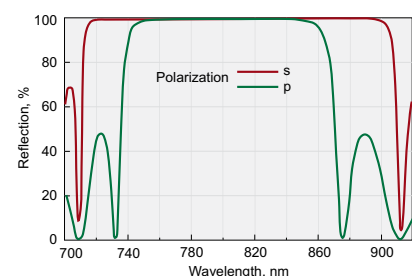
HR>99.5% @ 500-530 nm, AOI=45°



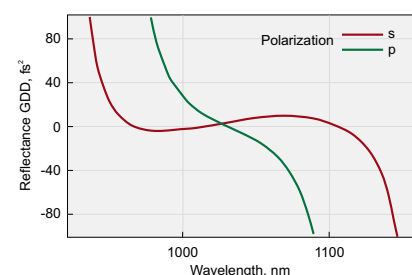
HRsp @ 500-530 GDD, AOI=45°



HR>99% @ 257-275 nm, AOI=45°



HR>99.5% @ 760-840 nm, AOI=45°



HRsp @ 1000-1060 GDD, AOI=45°

Wavelength, nm	AOI=0°		AOI=45°	
	R, % (s+p)/2	Catalogue number	R, % (s+p)/2	Catalogue number

Size - Ø12.7 × 3 mm

257 - 275	99.0	041-0266-i0	99.0	041-0266
333 - 353	99.7	041-0343-i0	99.5	041-0343
380 - 420	99.7	041-0400-i0	99.5	041-0400
500 - 530	99.7	041-0515-i0	99.5	041-0515
760 - 840	99.7	041-0800-i0	99.5	041-0800
1000 - 1060	99.7	041-1030-i0	99.5	041-1030

Size - Ø12.7 × 6 mm

257 - 275	99.0	041-0266T6-i0	99.0	041-0266T6
333 - 353	99.7	041-0343T6-i0	99.5	041-0343T6
380 - 420	99.7	041-0400T6-i0	99.5	041-0400T6
500 - 530	99.7	041-0515T6-i0	99.5	041-0515T6
760 - 840	99.7	041-0800T6-i0	99.5	041-0800T6
1000 - 1060	99.7	041-1030T6-i0	99.5	041-1030T6

Size - Ø25.4 × 6 mm

257 - 275	99.0	042-0266-i0	99.0	042-0266
333 - 353	99.7	042-0343-i0	99.5	042-0343
380 - 420	99.7	042-0400-i0	99.5	042-0400
500 - 530	99.7	042-0515-i0	99.5	042-0515
760 - 840	99.7	042-0800-i0	99.5	042-0800
1000 - 1060	99.7	042-1030-i0	99.5	042-1030
1400 - 1700	99.0	082-1417-i0	99.0	082-1417
1900 - 2120	99.8	082-1921-i0	99.8	082-1921

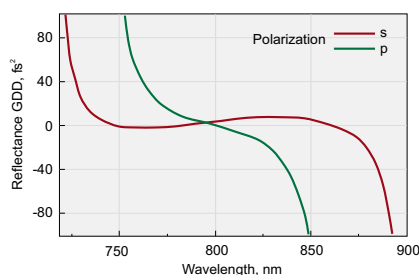
Size - Ø50.8 × 8 mm

257 - 275	99.0	045-0266-i0	99.0	045-0266
333 - 353	99.7	045-0343-i0	99.5	045-0343
380 - 420	99.7	045-0400-i0	99.5	045-0400
500 - 530	99.7	045-0515-i0	99.5	045-0515
760 - 840	99.7	045-0800-i0	99.5	045-0800
1000 - 1060	99.7	045-1030-i0	99.5	045-1030

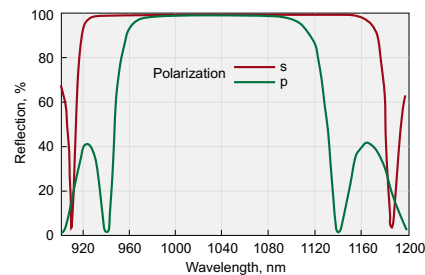
Size - Ø76.2 × 12.7 mm

257 - 275	99.0	047-0266-i0	99.0	047-0266
333 - 353	99.7	047-0343-i0	99.5	047-0343
380 - 420	99.7	047-0400-i0	99.5	047-0400
500 - 530	99.7	047-0515-i0	99.5	047-0515
760 - 840	99.7	047-0800-i0	99.5	047-0800
1000 - 1060	99.7	047-1030-i0	99.5	047-1030

Recommended for high power laser applications operating in UV region.



HRsp @ 760-840 GDD, AOI=45°



HR>99.5% @ 1000-1060 nm, AOI=45°