

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

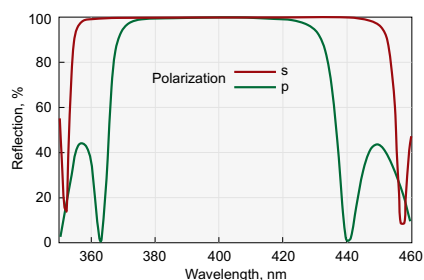
Material	UV grade Fused Silica or BK7 glass
S1 Surface Flatness	$\lambda/10$ at 633 nm
S1 Surface Quality	20-10 scratch & dig (MIL-PRF-13830B)
S2 Surface Quality	Commercial polish
Diameter Tolerance	+0.00 mm -0.12 mm
Thickness Tolerance	± 0.25 mm
Wedge	< 3 min
Chamfer	0.3 mm at 45° typical

Coating

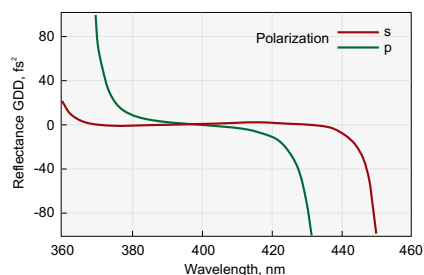
Technology	Electron beam multilayer dielectric or ion beam sputtering
Adhesion and Durability	Per MIL-C-675A. Insoluble in lab solvents
Clear Aperture	Exceeds central 85% of diameter
Angle of Incidence	0 or 45 \pm 3°
Designed for average polarization	$R=(R_s+R_p)/2$
Laser Damage Threshold	>100 mJ/cm ² , 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	Price, EUR	R, % (s+p)/2	Catalogue number	Price, EUR

Size – Ø12.7 × 3 mm

380 – 420	99.7	031-0400-i0	63	99.5	031-0400	63
500 – 530	99.7	031-0515-i0	62	99.5	031-0515	62
760 – 840	99.7	031-0800-i0	67	99.5	031-0800	67
1000 – 1060	99.7	031-1030-i0	63	99.5	031-1030	63

Size – Ø12.7 × 6 mm

380 – 420	99.7	031-0400T6-i0	63	99.5	031-0400T6	63
500 – 530	99.7	031-0515T6-i0	62	99.5	031-0515T6	62
760 – 840	99.7	031-0800T6-i0	67	99.5	031-0800T6	67
1000 – 1060	99.7	031-1030T6-i0	63	99.5	031-1030T6	63

Size – Ø25.4 × 6 mm

380 – 420	99.7	032-0400-i0	98	99.5	032-0400	98
500 – 530	99.7	032-0515-i0	81	99.5	032-0515	81
760 – 840	99.7	032-0800-i0	94	99.5	032-0800	94
1000 – 1060	99.7	032-1030-i0	83	99.5	032-1030	83

Size – Ø50.8 × 8 mm

380 – 420	99.7	035-0400-i0	146	99.5	035-0400	146
500 – 530	99.7	035-0515-i0	121	99.5	035-0515	121
760 – 840	99.7	035-0800-i0	146	99.5	035-0800	146
1000 – 1060	99.7	035-1030-i0	121	99.5	035-1030	121

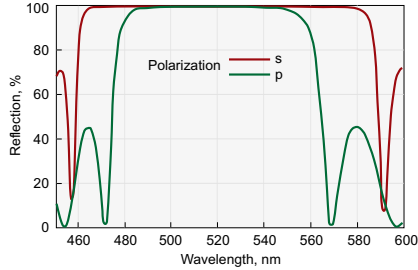
Size – Ø76.2 × 12.7 mm

380 – 420	99.7	037-0400-i0	219	99.5	037-0400	219
500 – 530	99.7	037-0515-i0	204	99.5	037-0515	204
760 – 840	99.7	037-0800-i0	219	99.5	037-0800	219
1000 – 1060	99.7	037-1030-i0	204	99.5	037-1030	204

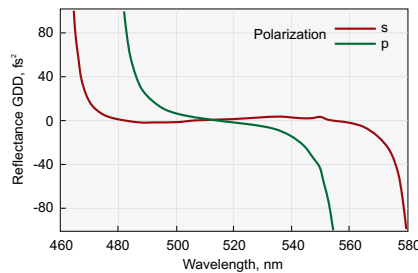
LOW GDD ULTRAFAST MIRRORS

Substrate material: **UV grade Fused Silica**

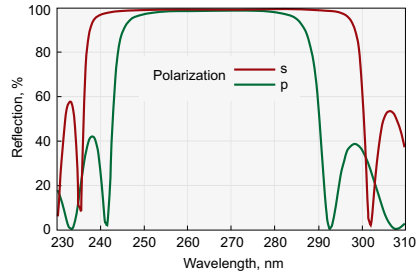
Recommended for high power laser applications operating in UV region.



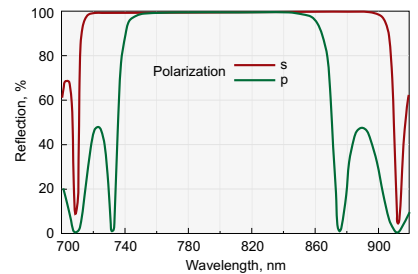
HR>99.5% @ 500-530 nm, AOI=45°



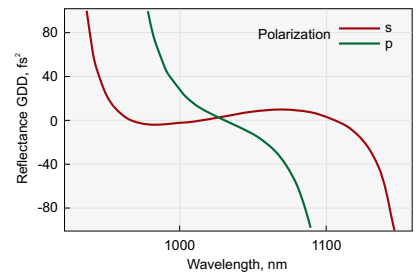
HRsp @ 500-530 GDD, AOI=45°



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	Price, EUR	R, % (s+p)/2	Catalogue number	Price, EUR

Size – Ø12.7 × 3 mm

257 – 275	99.0	041-0266-i0	78	99.0	041-0266	78
333 – 353	99.7	041-0343-i0	85	99.5	041-0343	85
380 – 420	99.7	041-0400-i0	74	99.5	041-0400	74
500 – 530	99.7	041-0515-i0	68	99.5	041-0515	68
760 – 840	99.7	041-0800-i0	83	99.5	041-0800	83
1000 – 1060	99.7	041-1030-i0	68	99.5	041-1030	68

Size – Ø12.7 × 6 mm

257 – 275	99.0	041-0266T6-i0	78	99.0	041-0266T6	78
333 – 353	99.7	041-0343T6-i0	85	99.5	041-0343T6	85
380 – 420	99.7	041-0400T6-i0	74	99.5	041-0400T6	74
500 – 530	99.7	041-0515T6-i0	68	99.5	041-0515T6	68
760 – 840	99.7	041-0800T6-i0	83	99.5	041-0800T6	83
1000 – 1060	99.7	041-1030T6-i0	68	99.5	041-1030T6	68

Size – Ø25.4 × 6 mm

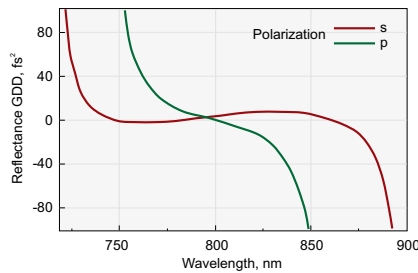
257 – 275	99.0	042-0266-i0	109	99.0	042-0266	109
333 – 353	99.7	042-0343-i0	118	99.5	042-0343	118
380 – 420	99.7	042-0400-i0	105	99.5	042-0400	105
500 – 530	99.7	042-0515-i0	99	99.5	042-0515	99
760 – 840	99.7	042-0800-i0	107	99.5	042-0800	107
1000 – 1060	99.7	042-1030-i0	99	99.5	042-1030	99
1400 – 1700	99.0	082-1417-i0	231	99.0	082-1417	231
1900 – 2120	99.8	082-1921-i0	231	99.8	082-1921	231

Size – Ø50.8 × 8 mm

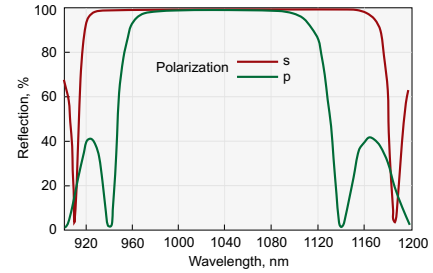
257 – 275	99.0	045-0266-i0	228	99.0	045-0266	228
333 – 353	99.7	045-0343-i0	206	99.5	045-0343	206
380 – 420	99.7	045-0400-i0	199	99.5	045-0400	199
500 – 530	99.7	045-0515-i0	186	99.5	045-0515	186
760 – 840	99.7	045-0800-i0	199	99.5	045-0800	199
1000 – 1060	99.7	045-1030-i0	186	99.5	045-1030	186

Size – Ø76.2 × 12.7 mm

257 – 275	99.0	047-0266-i0	319	99.0	047-0266	319
333 – 353	99.7	047-0343-i0	309	99.5	047-0343	309
380 – 420	99.7	047-0400-i0	299	99.5	047-0400	299
500 – 530	99.7	047-0515-i0	284	99.5	047-0515	284
760 – 840	99.7	047-0800-i0	299	99.5	047-0800	299
1000 – 1060	99.7	047-1030-i0	284	99.5	047-1030	284



HRsp @ 760-840 GDD, AOI=45°



HR>99.5% @ 1000-1060 nm, AOI=45°