

BROADBAND LOW GDD ULTRAFAST MIRRORS

Features

- High reflectivity and low group delay dispersion in broad region centered at 800 nm
- $R_s > 99\%$ @ 700 – 930 nm, $|GDDs| < 30 \text{ fs}^2$ @ 700 – 930 nm
- $R_p > 99\%$ @ 730 – 870 nm, $|GDDp| < 30 \text{ fs}^2$ @ 730 – 870 nm
- $R > 99\%$ @ 720 – 880 nm, $|GDD| < 30 \text{ fs}^2$ @ 720 – 880 nm

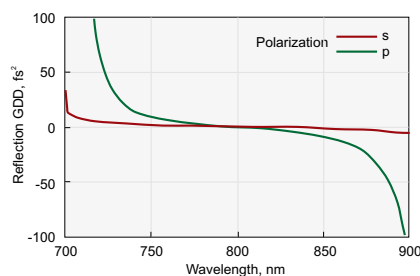
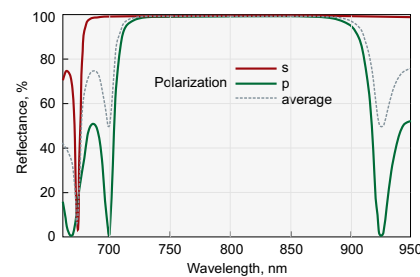
Specifications

Coating	Hard Dielectric High Reflection or Ion Beam Sputtering
Angle of Incidence	0 or $45 \pm 3^\circ$
Designed for average polarization	$R = (R_s + R_p) / 2$
Laser Damage Threshold	$> 100 \text{ mJ/cm}^2$, 50 fsec pulse, 50 Hz, 800 nm typical

Substrate

Material	UV grade Fused Silica or BK7 glas
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	$\pm 0.25 \text{ mm}$
Wedge	$< 3 \text{ min}$
Chamfer	0.3 mm at 45° typical

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HR > 99% @ 720-880 nm, AOI = 45°

Wavelength, nm	Diameter, mm	Thickness, mm	R, % (s+p)/2	AOI = 0°		AOI = 45°	
				Catalogue number	Price, EUR	R, % (s+p)/2	Catalogue number

Substrate material: BK7 grade A

720-880	12.7	3.0	99.0	071-7288-i0	103	99.0	071-7288	103
720-880	12.7	6.0	99.0	071-7288T6-i0	103	99.0	071-7288T6	103
720-880	25.4	6.0	99.0	072-7288-i0	125	99.0	072-7288	125
720-880	38.1	8.0	99.0	074-7288-i0	234	99.0	074-7288	234
720-880	50.8	8.0	99.0	075-7288-i0	264	99.0	075-7288	264
720-880	76.2	12.7	99.0	077-7288-i0	474	99.0	077-7288	474
720-880	101.6	15.0	99.0	078-7288-i0	648	99.0	078-7288	648

Substrate material: UV grade Fused Silica

720-880	12.7	3.0	99.0	081-7288-i0	115	99.0	081-7288	115
720-880	12.7	6.0	99.0	081-7288T6-i0	115	99.0	081-7288T6	115
720-880	25.4	6.0	99.0	082-7288-i0	155	99.0	082-7288	155
720-880	38.1	8.0	99.0	084-7288-i0	270	99.0	084-7288	270
720-880	50.8	8.0	99.0	085-7288-i0	306	99.0	085-7288	306
720-880	76.2	12.7	99.0	087-7288-i0	552	99.0	087-7288	552
720-880	101.6	15.0	99.0	088-7288-i0	734	99.0	088-7288	734

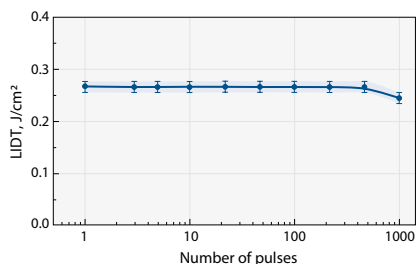
HIGH POWER IBS COATED LASER MIRRORS

Substrate

Material	UV grade fused silica
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	$\pm 0.25 \text{ mm}$
Wedge	$< 3 \text{ min}$
Chamfer	0.3 mm at 45° typical

Coating

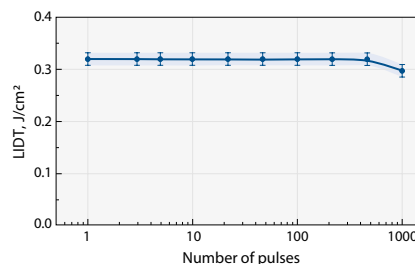
Technology	Ion Beam Sputtering (IBS)
Adhesion and Durability	Per MIL-C-675A, Insoluble in lab solvents
Clear Aperture	Exceeds central 85% of diameter
Coated Surface Flatness	$\lambda/10$ at 633 nm over clear aperture
Group Delay Dispersion	$< 30 \text{ fs}^2$



LIDT of High Power Laser Mirrors
@ 720-880 nm, AOI = 45°

Test conditions:

Wavelength	800 nm
Pulse duration	52.4 fs
Repetition rate	50 Hz
AOI	45°
Polarization	linear P
Beam diameter (1/e ²)	(95.5 ± 0.9) μm



LIDT of High Power Laser Mirrors
@ 720-880 nm, AOI = 0°

Test conditions:

Wavelength	800 nm
Pulse duration	52.4 fs
Repetition rate	50 Hz
AOI	0°
Polarization	linear
Beam diameter (1/e ²)	(95.5 ± 0.9) μm

Design wavelength range – 343 nm. LIDT > 0.4 J/cm², 200 fs pulse, 100 Hz, 1550 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
343	45	99.8	041-0343PHR	149	042-0343PHR	198	045-0343PHR	635
343	0	99.8	041-0343PHR-i0	149	042-0343PHR-i0	198	045-0343PHR-i0	635

Design wavelength – 500-530 nm. LIDT > 0.15 J/cm², 50 fs pulse, 100 Hz, 515 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
500 – 530	45	99.9	041-0515T6HHR	83	042-0515HHR	116	045-0515T12HHR	410
500 – 530	0	99.9	041-0515T6HHR-i0	83	042-0515HHR-i0	116	045-0515T12HHR-i0	410

Design wavelength – 760-840 nm. LIDT > 0.2 J/cm², 50 fs pulse, 100 Hz, 800 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
760 – 840	45	99.9	041-0800T6HHR	119	042-0800HHR	143	045-0800T12HHR	440
760 – 840	0	99.9	041-0800T6HHR-i0	119	042-0800HHR-i0	143	045-0800T12HHR-i0	440
760 – 840	0-45	99.9	041-7684T6HHR-i0-45	121	042-7684HHR-i0-45	154	045-4684T12HHR-i0-45	480

Design wavelength – 760-840 nm. LIDT > 0.3 J/cm², 50 fs pulse, 100 Hz, 800 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
760 – 840	45	99.9	041-0800T6UHHR	174	042-0800UHHR	209	045-0800T12UHHR	570
760 – 840	0	99.9	041-0800T6UHHR-i0	174	042-0800UHHR-i0	209	045-0800T12UHHR-i0	570

Design wavelength – 720-880 nm. LIDT > 0.15 J/cm², 50 fs pulse, 100 Hz, 800 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm		Ø 76.2 x 15 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
720 – 880	45	99.8	081-7288HHR	119	082-7288HHR	160	085-7288T12HHR	490	087-7288HHR	660
720 – 880	0	99.9	081-7288HHR-i0	119	082-7288HHR-i0	160	085-7288T12HHR-i0	490	087-7288HHR-i0	660

Design wavelength – 1000-1060 nm. LIDT > 0.4 J/cm², 50 fs pulse, 100 Hz, 1030 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
1000 – 1060	45	99.9	041-1030T6HHR	83	042-1030HHR	116	045-1030T12HHR	410
1000 – 1060	0	99.9	041-1030T6HHR-i0	83	042-1030HHR-i0	116	045-1030T12HHR-i0	410

Design wavelength range – 1400-1700 nm. LIDT > 0.3 J/cm², 50 fs pulse, 100 Hz, 1550 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
1400 – 1700	45	99.8	081-1417	158	082-1417	210	085-1417	570
1400 – 1700	0	99.8	081-1417-i0	158	082-1417-i0	210	085-1417-i0	570

Design wavelength range – 1900-2120 nm. LIDT > 0.4 J/cm², 50 fs pulse, 100 Hz, 2000 nm typical.

Wavelength, nm	AOI, deg	R, % (s+p)/2	Ø 12.7 x 6 mm		Ø 25.4 x 6 mm		Ø 50.8 x 12 mm	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR	Catalogue number	Price, EUR
1900 – 2120	45	99.8	081-1921	168	082-1921	225	085-1921	595
1900 – 2120	0	99.8	081-1921-i0	168	082-1921-i0	225	085-1921-i0	595