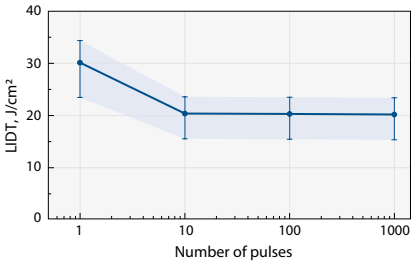


LIDT of High Power Laser Mirrors @ 532 nm

Test conditions:

Wavelength	532 nm
Pulse duration	(5.4 ± 0.3) ns
Repetition rate	100 Hz
AOI	45°
Polarization	linear P
Beam diameter (1/e²)	(206.0 ± 6.7) µm

Design wavelength – 532 nm. **LIDT >20 J/cm²**, 10 ns pulse, 100 Hz, 532 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
532	45	99.9	041-0530T6UHHR	121	042-0530UHHR	171	045-0530T12UHHR	530
532	0	99.95	041-0530T6UHHR-i0	121	042-0530UHHR-i0	171	045-0530T12UHHR-i0	530

Design wavelength – 800 nm. **LIDT >30 J/cm²**, 10 ns 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
800	45	99.9	041-0800NT6UHHR	127	042-0800NUHHR	182	045-0800NT12UHHR	550
800	0	99.95	041-0800NT6UHHR-i0	127	042-0800NUHHR-i0	182	045-0800NT12UHHR-i0	550

Design wavelength – 1064 nm. **LIDT >20 J/cm²**, 10 ns pulse, 100 Hz, 1064 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
1064	45	99.9	041-1060T6HHR	83	042-1060HHR	116	045-1060T12HHR	410
1064	0	99.95	041-1060T6HHR-i0	83	042-1060HHR-i0	116	045-1060T12HHR-i0	410
1064	0-45	99.9	041-1060T6HHR-i0-45	99	042-1060HHR-i0-45	132	045-1060T12HHR-i0-45	470

Design wavelength – 1064 nm. **LIDT >40 J/cm²**, 10 ns pulse, 100 Hz, 1064 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
1064	45	99.9	041-1060NT6UHHR	127	042-1060NUHHR	182	045-1060NT12UHHR	550
1064	0	99.95	041-1060NT6UHHR-i0	127	042-1060NUHHR-i0	182	045-1060NT12UHHR-i0	550

Design wavelength – 532+1064 nm. **LIDT >15 J/cm²** at 1064 nm and **LIDT >5 J/cm²** at 532 nm, 10 ns pulse, 10 Hz 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
532+1064	45	99.5	061-5306HHR	149	062-5306HHR	198	065-5306HHR	750
532+1064	0	99.5	061-5306HHR-i0	149	062-5306HHR-i0	198	065-5306HHR-i0	750

Design wavelength – 532+1064 nm. **LIDT >30 J/cm²** at 1064 nm and **LIDT >10 J/cm²** at 532 nm, 10 ns pulse, 10 Hz 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
532+1064	45	99.5	061-5306UHHR	191	062-5306UHHR	270	065-5306UHHR	790
532+1064	0	99.5	061-5306UHHR-i0	191	062-5306UHHR-i0	270	065-5306UHHR-i0	790

LASER HARMONIC SEPARATORS

Features

- Offered on Ø 0.5 or 1 inch substrates of BK7 or UV FS with surface flatness λ/10

Harmonic separators are dichroic beamsplitters that reflect one wavelength and transmit the others. Reflectance is higher than 99.5% for the wavelength of interest and transmittance is at least 90% for the rejected wavelengths. The rear surface of harmonic separators is antireflection coated.

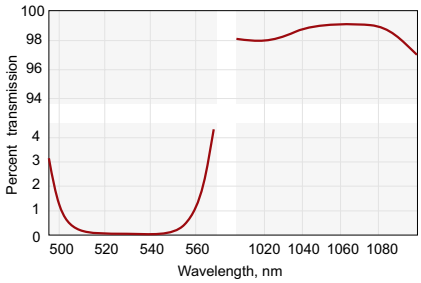
Substrate

Material	UV grade Fused Silica or BK7 glass
S1 Surface Flatness	λ/10 typical at 633 nm
S1 Surface Quality	20–10 scratch & dig (MIL-PRF-13830B)
S2 Surface Flatness	λ/10 typical at 633 nm
S2 Surface Quality	20–10 scratch & dig (MIL-PRF-13830B)
Diameter Tolerance	+0.00 mm -0.12 mm
Thickness Tolerance	±0.25 mm
Parallelism	< 30 arcsec
Chamfer	0.3 mm at 45° typical

LASER HARMONIC SEPARATORS WITH HIGH TRANSMISSION

Coating

Technology	Ion Beam Sputtering (IBS)
Damage Threshold	>10 J/cm², 8 nsec pulse, 1064 nm typical
Back side anti-reflection coated	AOI 45°, R<0.5% AOI 0°, R<0.1%



041-5105HT.
HR > 99.9% @ 532 nm, HT > 99% @ 1064 nm, AOI = 45°

Reflected wavelength, nm	Reflection	Transmission	AOI, deg	Ø12.7×3 mm		Ø25.4×6 mm	
				Catalogue number	Price, EUR	Catalogue number	Price, EUR
266	R_{sp}>99.0%	T_{sp}>98% @ 532 + 1064 nm	0	041-2510HT	215	042-2510HT	270
266	R_{sp}>99.0%	T_{sp}>98% @ 532 + 1064 nm	45	041-2515HT	215	042-2515HT	270
355	R_{sp}>99.5%	T_{sp}>98% @ 532 nm + T_{sp}>99% @ 1064 nm	0	041-3510HT	205	042-3510HT	260
355	R_{sp}>99.5%	T_{sp}>98% @ 532 nm + T_{sp}>99% @ 1064 nm	45	041-3515HT	205	042-3515HT	260
532	R_{sp}>99.9%	T_{sp}>99% @ 1064 nm	0	041-5100HT	176	042-5100HT	226
532	R_{sp}>99.9%	T_{sp}>99% @ 1064 nm	45	041-5105HT	176	042-5105HT	226
1064	R_{sp}>99.5%	T_{sp}>98% @ 532 nm	0	041-6500HT	182	042-6500HT	231
1064	R_{sp}>99.5%	T_{sp}>98% @ 532 nm	45	041-6505HT	182	042-6505HT	231

STANDARD LASER HARMONIC SEPARATORS

Coating

Technology	Electron beam multilayer dielectric
Adhesion and Durability	Per MIL-C-675A. Insoluble in lab solvents
Damage Threshold: BK7	>2 J/cm², 8 nsec pulse, 1064 nm typical
Damage Threshold: UV FS	>5 J/cm², 8 nsec pulse, 1064 nm typical

Clear Aperture	Exceeds central 85% of diameter
Coated Surface Flatness	λ/10 at 633 nm over clear aperture
Back side antireflection coated	AOI 45°, R<0.5% AOI 0°, R<0.2%

Reflected wavelength, nm, R > 99.5%	Transmitted wavelength, nm	Transmission, %	AOI, deg	Substrate material	Ø12.7x3 mm		Ø25.4x6 mm	
					Catalogue number	Price, EUR	Catalogue number	Price, EUR
266	355+532+1064	>90	0	UVFS	041-2310	178	042-2310	213
266	355+532+1064	>90	45	UVFS	041-2315	178	042-2315	213
266	532	>95	0	UVFS	041-2500	155	042-2500	190
266	532	>95	45	UVFS	041-2505	155	042-2505	190
355	1064	>95	0	UVFS	041-3100	132	042-3100	167
355	1064	>95	45	UVFS	041-3105	132	042-3105	167
355	532	>95	0	UVFS	041-3500	132	042-3500	167
355	532	>95	45	UVFS	041-3505	132	042-3505	167
355	532+1064	>95	0	UVFS	041-3510	144	042-3510	178
355	532+1064	>95	45	UVFS	041-3515	144	042-3515	178
532	1064	>95	0	BK7	031-5100	104	032-5100	132
532	1064	>95	45	BK7	031-5105	104	032-5105	132
532	1064	>95	0	UVFS	041-5100	132	042-5100	167
532	1064	>95	45	UVFS	041-5105	132	042-5105	167
532+1064	355	>85	0	UVFS	041-5140	236	042-5140	265
532+1064	355	>85	45	UVFS	041-5145	236	042-5145	265
1064	532	>93	0	BK7	031-6500	109	032-6500	138
1064	532	>93	45	BK7	031-6505	109	032-6505	138
1064	532	>93	0	UVFS	041-6500	138	042-6500	173
1064	532	>93	45	UVFS	041-6505	138	042-6505	173

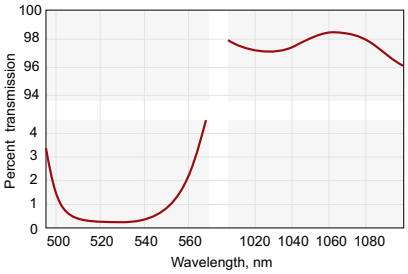
Related Products

Pellin-Broca Prisms
See page 1.52

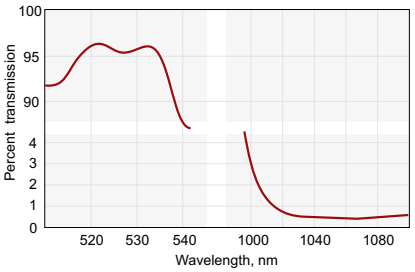
Housing accessories

Adapter for Beamsplitter at 45° 840-0116
Find more at EksmaOptics.com

Kinematic Mirror and Beamsplitter Mount 840-0020
Find more at EksmaOptics.com



031-5105.
HR > 99.5% @ 532 nm, HT > 95% @ 1064 nm, AOI = 45°



031-6500.
HR > 99.5% @ 1064 nm, HT > 93% @ 532 nm, AOI = 0°

LASER OUTPUT COUPLERS

An output coupler is a partially reflecting dielectric mirror used in a laser cavity. It transmits a part of the circulating intracavity power for generating a useful output from the laser.

A low transmission output coupler leads to a low laser threshold, but also possibly to poor laser efficiency if the losses due to output coupling do not dominate over other parasitic losses in the laser cavity. The output coupler transmission is often chosen to maximize the achieved output power, although its optimum value may be lower or higher if there are other design purposes (minimizing the intracavity intensities or suppressing Q-switching instabilities in a passively mode-locked laser).

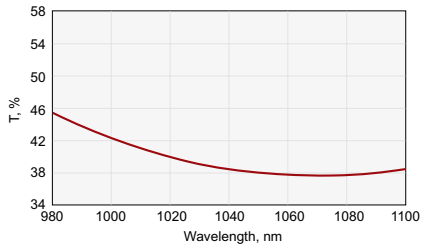
Substrate

Material	UV grade Fused Silica or BK7 glass
S1 Surface Flatness	λ/10 typical at 633 nm
S1 Surface Quality	20 –10 scratch & dig (MIL-PRF-13830B)
S2 Surface Flatness	λ/10 typical at 633 nm
S2 Surface Quality	20 –10 scratch & dig (MIL-PRF-13830B)
Diameter Tolerance	+0.00 mm; -0.12 mm
Thickness Tolerance	±0.25 mm
Parallelism	30 arcsec
Chamfer	0.3 mm at 45° typical

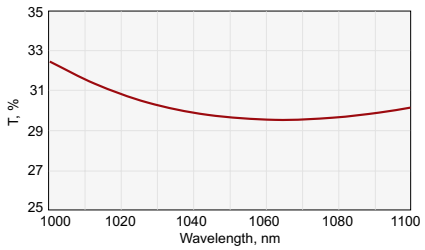
Coating

Technology	Electron beam multilayer dielectric
Adhesion and Durability	Per MIL-C-675A. Insoluble in lab solvents
Clear Aperture	Exceeds central 85% of diameter
Damage Threshold:	
BK7	>3 J/cm², 8 nsec pulse, 1064 nm typical
UV FS	>6 J/cm², 8 nsec pulse, 1064 nm typical
Coated Surface Flatness	λ/10 at 633 nm over clear aperture
Angle of Incidence	0 – 8° (normal)
Back side antireflection coated	R < 0.2%

LASER OUTPUT COUPLERS



R = 60±2% @ 1064 nm, AOI=0°



R = 70±2% @ 1064 nm, AOI=0°

Size – **Ø12.7 × 3 mm**

Wavelength, nm	Reflection, %	Transmission, %	Substrate material	Catalogue number	Price, EUR
1064	15±3	85±3	BK7	**031-0015**	86
1064	20±3	80±3	BK7	**031-0020**	86
1064	25±3	75±3	BK7	**031-0025**	86
1064	30±3	70±3	BK7	**031-0030**	86
1064	40±3	60±3	BK7	**031-0040**	86
1064	50±3	50±3	BK7	**031-0050**	86
1064	60±3	40±3	BK7	**031-0060**	86
1064	65±3	35±3	BK7	**031-0065**	86
1064	70±3	30±3	BK7	**031-0070**	86
1064	75±3	25±3	BK7	**031-0075**	86
1064	80±3	20±3	BK7	**031-0080**	86
1064	85±3	15±3	BK7	**031-0085**	86
1064	90±2	10±2	BK7	**031-0090**	94
1064	95±2	5±2	BK7	**031-0095**	98
1064	97±1	3±1	BK7	**031-0097**	102
1064	98±1	2±1	BK7	**031-0098**	102
1064	99.0±0.5	1.0±0.5	BK7	**031-0099**	110