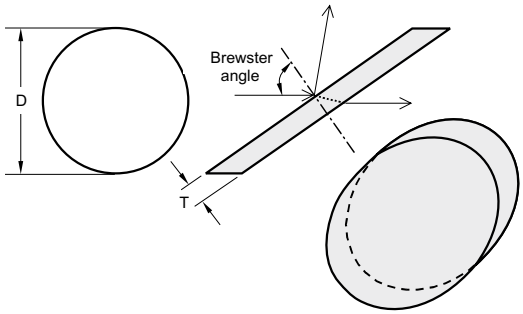
BREWSTER WINDOWS

Features

- Transmit 100% p-polarization components
- Reflect 20% s-polarization components

Brewster windows are intended for high energy laser beams intra cavity usage.

Please contact us for other Brewster windows size or precision requirements.



Specifications

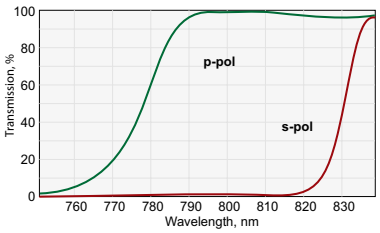
Material	BK7, UV FS
Surface quality	20 – 10 scratch & dig (MIL-PRF-13830B)
Wavefront distortion	λ/10 @ 633 nm
Clear aperture	90% of diameter
Parallelism	< 10 arcsec
Axis tolerance	+0.00 / -0.12 mm
Thickness tolerance	±0.2 mm

Minor axis D, mm	Thickness T, mm	BK7		UV FS	
		Catalogue number	Price, EUR	Catalogue number	Price, EUR
8.0	2.0	410-0082	55	410-1082	70
12.5	3.0	410-0123	65	410-1123	87
25.0	5.0	410-0255	75	410-1255	145
40.0	8.0	410-0408	99	410-1408	195
50.0	8.0	410-0508	130	410-1508	250

THIN FILM LASER POLARIZERS (56° Angle of Incidence)

Features

- Provide the achievement of strictly linear polarization of laser radiaton
- Utilise the polarization wich occurs on reflection from a plane surface



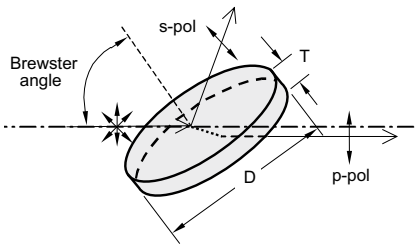
420-0126.
Transmission @ 800 nm, Rs/Tp > 99.5/95.0 %

Thin Film Polarizers are designed for use in the most demanding lasers. Due to a high laser damage threshold reaching 10 J/cm² @ 1064 nm 8 ns, they are used as an alternative to Glan laser polarizing prisms or cube polarizing beamsplitters.

Typical applications are intracavity Q-switch hold-off polarizers or extracavity attenuators for Nd:YAG lasers.

Thin Film Polarizers can be used at an > 40° angle of incidence, but polarization is most efficient and appears in a broad wavelength range at 56° AOI (Brewster angle). Typical polarization ratio T_P/T_S is 200:1.

Standard size is up to Ø50 mm (2"), while max. available dimensions are 100×200 mm. For optimal transmission a Thin Film Polarizer should be mounted in an appropriate holder for angular adjustment.



Specifications

Material	BK7, UV FS
Surface quality	20 – 10 scratch & dig (MIL-PRF-13830B)
Transmitted wavefront distortion	λ/10 @ 633 nm
Parallelism	<30 arcsec
Clear aperture	>90%
Angle of incidence (AOI)	56 ± 2°
Diameter tolerance	+0.0 / -0.12 mm
Thickness tolerance	±0.2 mm
Transmission efficiency	Tp > 95%
Extinction ratio Tp/Ts	>200:1
Laser damage threshold	10 J/cm² 10 nsec pulse at 1064 nm typical

BK7 ROUND THIN FILM POLARIZERS

Rs / Tp > 99.5 / 95.0%. Extinction ratio for transmitted light Tp/Ts >200:1

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	Price, EUR
515	12.7	3.0	420-0114E	124
532	12.7	3.0	420-0124E	124
633	12.7	3.0	420-0125E	124
775	12.7	3.0	420-0127E	124
800	12.7	3.0	420-0126E	124
780 – 820	12.7	3.0	420-0136E	184
1030	12.7	3.0	420-0118E	132
1010 – 1050	12.7	3.0	420-0138E	184
1064	12.7	3.0	420-0128E	132
515	25.4	3.0	420-0244E	147
532	25.4	3.0	420-0254E	147
633	25.4	3.0	420-0255E	147
775	25.4	3.0	420-0257E	147
800	25.4	3.0	420-0256E	147
780 – 820	25.4	3.0	420-0266E	217
1030	25.4	3.0	420-0248E	178
1010 – 1050	25.4	3.0	420-0268E	217
1064	25.4	3.0	420-0258E	178
1550	25.4	3.0	420-0259E	242
515	50.8	6.0	420-0514E	237
532	50.8	6.0	420-0504E	237
633	50.8	6.0	420-0505E	237
775	50.8	6.0	420-0507E	247
800	50.8	6.0	420-0506E	351
780 – 820	50.8	6.0	420-0526E	355
1030	50.8	6.0	420-0518E	293
1010 – 1050	50.8	6.0	420-0528E	385
1064	50.8	6.0	420-0508E	293

BK7 RECTANGULAR THIN FILM LASER POLARIZERS

Rs / Tp > 99.5 / 95.0%. Extinction ratio for transmitted light Tp/Ts >200:1

Wavelength, nm	Rectangular dimensions		Thickness T, mm	Catalogue number	Price, EUR
	Length, mm	Width, mm			
515	28.6	14.3	3.0	420-0274	163
532	28.6	14.3	3.0	420-0284	163
633	28.6	14.3	3.0	420-0285	163
775	28.6	14.3	3.0	420-0287	163
800	28.6	14.3	3.0	420-0286	163
780-820	28.6	14.3	3.0	420-0296	253
1030	28.6	14.3	3.0	420-0278	196
1010-1050	28.6	14.3	3.0	420-0298	253
1064	28.6	14.3	3.0	420-0288	196

Housing accessories

Adapters for Polarizer at 56° 840-0117, 840-0118

Find more at EksmaOptics.com

Variable Attenuators for Linearly Polarized Laser Beam 990-0070, -0071

See page 5.9

UV FS ROUND THIN FILM LASER POLARIZERS

Rs / Tp > 99.5 / 95.0%. Extinction ratio for transmitted light Tp/Ts >200:1

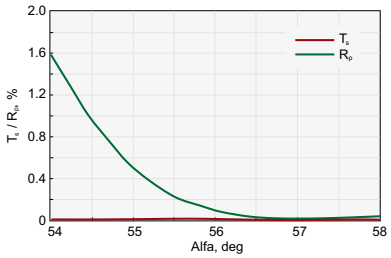
Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	Price, EUR
266	12.7	3.0	420-1110E	207
343	12.7	3.0	420-1112E	189
355	12.7	3.0	420-1122E	189
400	12.7	3.0	420-1123E	151
515	12.7	3.0	420-1114E	151
532	12.7	3.0	420-1124E	151
800	12.7	3.0	420-1126E	151
780 – 820	12.7	3.0	420-1136E	225
1030	12.7	3.0	420-1118E	167
1010 – 1050	12.7	3.0	420-1138E	225
1064	12.7	3.0	420-1128E	167
266	25.4	3.0	420-1240E	230
343	25.4	3.0	420-1242E	209
355	25.4	3.0	420-1252E	209
390 – 410	25.4	3.0	420-1253B	266
400	25.4	3.0	420-1253E	177
515	25.4	3.0	420-1244E	177
532	25.4	3.0	420-1254E	177
800	25.4	3.0	420-1256E	177
780 – 820	25.4	3.0	420-1266E	266
1030	25.4	3.0	420-1248E	207
1010 – 1050	25.4	3.0	420-1268E	266
1064	25.4	3.0	420-1258E	207
1530 – 1570	25.4	3.0	420-1269E	299
266	50.8	6.0	420-1510E	412
343	50.8	6.0	420-1512E	374
355	50.8	6.0	420-1502E	374
390 – 410	50.8	6.0	420-1503B	465
400	50.8	6.0	420-1503E	339
515	50.8	6.0	420-1514E	339
532	50.8	6.0	420-1504E	339
800	50.8	6.0	420-1506E	351
780 – 820	50.8	6.0	420-1526E	465
1030	50.8	6.0	420-1518E	362
1010 – 1050	50.8	6.0	420-1528E	465
1064	50.8	6.0	420-1508E	362

UV FS RECTANGULAR THIN FILM LASER POLARIZERS

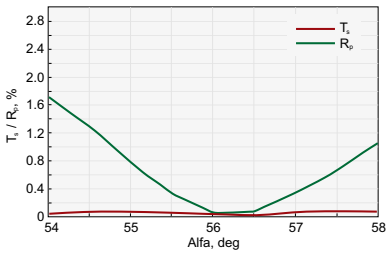
Rs / Tp > 99.5 / 95.0%. Extinction ratio for transmitted light Tp/Ts >200:1

Wavelength, nm	Rectangular dimensions		Thickness T, mm	Catalogue number	Price, EUR
	Length, mm	Width, mm			
266	28.6	14.3	3.0	420-1270	322
343	28.6	14.3	3.0	420-1272	293
355	28.6	14.3	3.0	420-1282	293
390 – 410	35.0	20.0	3.0	240-1383B	416
400	28.6	14.3	3.0	420-1283	247
515	28.6	14.3	3.0	420-1274	247
532	28.6	14.3	3.0	420-1284	247
800	28.6	14.3	3.0	420-1286	247
780 – 820	28.6	14.3	3.0	420-1296	362
1030	28.6	14.3	3.0	420-1278	259
1010 – 1050	28.6	14.3	3.0	420-1298	362
1064	28.6	14.3	3.0	420-1288	259
266	35.0	20.0	3.0	420-1370	370
343	35.0	20.0	3.0	420-1372	337
355	35.0	20.0	3.0	420-1382	337
400	35.0	20.0	3.0	420-1383	284
515	35.0	20.0	3.0	420-1374	284
532	35.0	20.0	3.0	420-1384	284
800	35.0	20.0	3.0	420-1386	284
780 – 820	35.0	20.0	3.0	420-1396	416
1030	35.0	20.0	3.0	420-1378	298
1010 – 1050	35.0	20.0	3.0	420-1398	416
1064	35.0	20.0	3.0	420-1388	298
1530 – 1570	35.0	20.0	3.0	420-1399	449

ULTRA HIGH TRANSMISSION THIN FILM POLARIZERS



420-1254UHT.
Ultra High Transmission @ 532 nm,
Ts<0.2%, Rp<0.2%, AOI = 56°

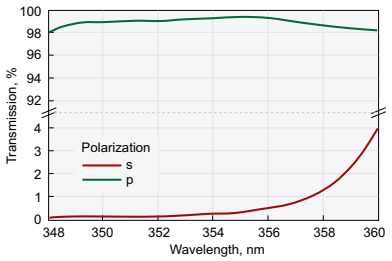


420-1258UHT.
Ultra High Transmission @ 1064 nm,
Ts<0.2%, Rp<0.2%, AOI = 56°

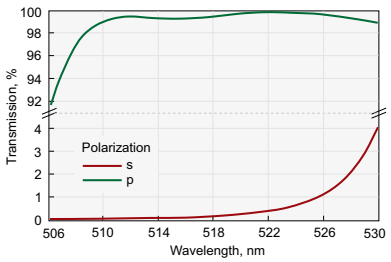
Round Polarizers. Material – UV FS. Ts < 0.2%, Rp < 0.2%. Extinction ratio for transmitted light Tp/Ts >500:1

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	Price, EUR
532	25.4	3	**420-1254UHT**	299
800	25.4	3	**420-1256UHT**	299
1030	25.4	3	**420-1248UHT**	350
1064	25.4	3	**420-1258UHT**	350

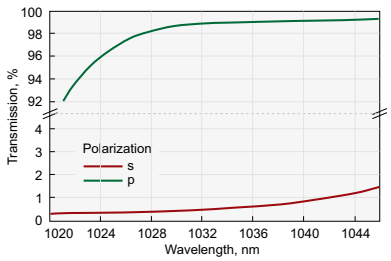
HIGH TRANSMISSION THIN FILM POLARIZERS



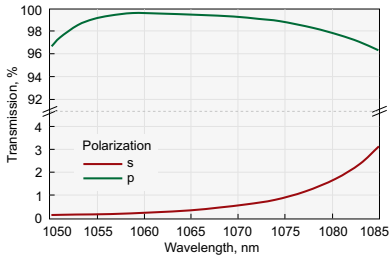
420-1252HT.
High Transmission @ 355 nm,
Rs/Tp > 99.5/99.0%



420-1244HT.
High Transmission @ 515 nm,
Rs/Tp > 99.5/99.0%



420-1248HT.
High Transmission @ 1030 nm,
Rs/Tp > 99.5/99.0%



420-1258HT.
High Transmission @ 1064 nm,
Rs/Tp > 99.5/99.0%.

Round Polarizers. Material – UV FS. Rs / Tp > 99.5 / 99.0%. Extinction ratio for transmitted light Tp/Ts >200:1

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	Price, EUR
343	25.4	3	**420-1242HT**	273
355	25.4	3	**420-1252HT**	273
515	25.4	3	**420-1244HT**	230
532	25.4	3	**420-1254HT**	230
800	25.4	3	**420-1256HT**	230
1030	25.4	3	**420-1248HT**	269
1064	25.4	3	**420-1258HT**	269

Rectangular Polarizers.
Material – UV FS. Rs / Tp > 99.5 / 99.0%. Extinction ratio for transmitted light Tp/Ts >200:1

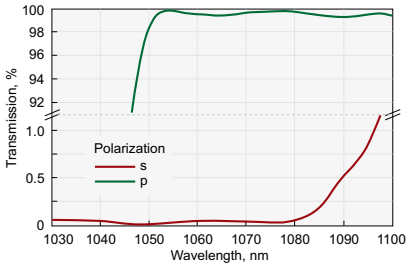
Wavelength, nm	Rectangular dimensions		Thickness T, mm	Catalogue number	Price, EUR
	Length, mm	Width, mm			
1030	28.6	14.3	3	**420-1278HT**	311
1064	28.6	14.3	3	**420-1288HT**	311

Related Products

Glan Laser Polarizing Prims
See page 1.62

Wollaston Prisms
See page 1.64

THIN FILM POLARIZERS WITH HIGH EXTINCTION RATIO



420-1258HE.
Tp > 98%, Ts < 0.1%

Round Polarizers. Material – UV FS. Rs / Tp > 99.5 / 99.0%. Extinction ratio for transmitted light Tp/Ts >200:1

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	Price, EUR
343	25.4	3	420-1242HE	251
355	25.4	3	420-1252HE	251
515	25.4	3	420-1244HE	213
532	25.4	3	420-1254HE	213
780 – 820	25.4	3	420-1266HE	316
800	25.4	3	420-1256HE	213
1030	25.4	3	420-1248HE	248
1064	25.4	3	420-1258HE	248

Rectangular Polarizers.
Material – UV FS. Rs / Tp > 99.5 / 99.0%. Extinction ratio for transmitted light Tp/Ts >200:1

Wavelength, nm	Rectangular dimensions		Thickness T, mm	Catalogue number	Price, EUR
	Length, mm	Width, mm			
532	20	15	6	420-1484HE	178
532	30	20	6	420-1584HE	242
1030	20	15	6	420-1478HE	190
1030	30	20	6	420-1578HE	253
1064	20	15	6	420-1488HE	190
1064	30	20	6	420-1588HE	253

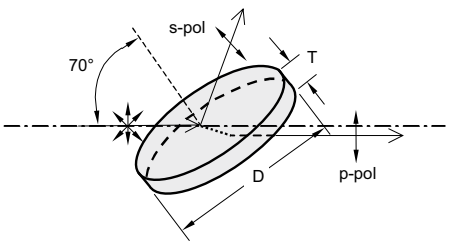
Housing accessories

Adapters
for Polarizer at 56°
840-0117, 840-0118
Find more at
EksmaOptics.com

Variable Attenuators
for Linearly Polarized
Laser Beam
990-0070, -0071
See page 5.9

THIN FILM POLARIZERS (70° Angle of Incidence)

Broadband thin film polarizers separate the s- and p-polarization components in broad region at 70° angle of incidence (AOI). These polarizers are designed to be used in high energy laser systems, typically as extracavity attenuators for femtosecond lasers. Polarizers are made form UV fused silica and feature a high laser damage threshold – up to 50 mJ/cm².



Specifications

Substrate material	UV FS
Surface quality	20 – 10 scratch & dig (MIL-PRF-13830B)
Transmitted wavefront distortion	λ/10 @ 633 nm
Clear aperture	>90% of diameter
Angle of incidence (AOI)	70 ± 2°
Parallelism	<30 arcsec

Rectangular Polarizers. Material – UV FS. Rs / Tp > 99.5 / 95.0%. Extinction ratio for transmitted light Tp/Ts >200:1

Operating wavelength region, nm	Centre wavelength, nm	Rectangular dimensions		Thickness T, mm	Catalogue number	Price, EUR
		Length, mm	Width, mm			
750 – 850	800	60.0	20.0	4.0	420-1696BBi70	500
980 – 1080	1030	60.0	20.0	4.0	420-1698BBi70	500