

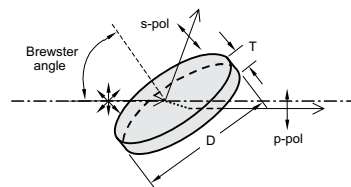
THIN FILM POLARIZERS (56° Angle of Incidence)

Thin film polarizers separate s- and p-polarization components. Due to their high laser damage threshold, thin film polarizers can be used as an alternative to Glan-Taylor laser polarizing prisms or cube polarizing beam splitters.

Femtoline thin film laser polarizers are designed for use in high energy lasers. They can be used for Yb:KYW/KGW or Ti:Sapphire laser fundamental wavelengths or their harmonics, as well as intracavity Q-switch hold-off polarizers. The most efficient way to use these polarizers is at Brewster's angle – $56 \pm 2^\circ$.

Specifications

Technology	Ion Beam Sputtering
Material	BK7, UV FS
Surface quality	20–10 scratch & dig (MIL-PRF-13830B)
Transmitted wavefront distortion	$\lambda/10$ @ 633 nm
Angle of incidence (AOI)	56°
Angle of incidence tolerance	$\pm 2^\circ$
Laser damage threshold	$>100 \text{ mJ/cm}^2$, 50 fsec pulse, 50 Hz, 800 nm typical



THIN FILM POLARIZERS WITH HIGH EXTINCTION RATIO

Round Polarizers. Material – UV FS. $T_p > 98\%$, $T_s < 0.1\%$.
Extinction ratio for transmitted light $T_p/T_s > 1000:1$

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	
343	25.4	3	420-1242HE	
515	25.4	3	420-1244HE	
800	25.4	3	420-1256HE	
780 – 820	25.4	3	420-1266HE	
1030	25.4	3	420-1248HE	

Rectangular Polarizers. Material – UV FS. $T_p > 98\%$, $T_s < 0.1\%$.
Extinction ratio for transmitted light $T_p/T_s > 1000:1$

Wavelength, nm	Rectangular dimensions		Thickness T, mm	Catalogue number	
	Length, mm	Width, mm			
1030	20	15	6	420-1478HE	
1030	30	20	6	420-1578HE	

ULTRA HIGH TRANSMISSION THIN FILM POLARIZERS

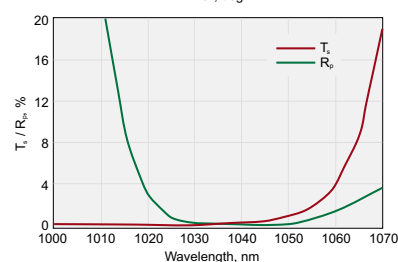
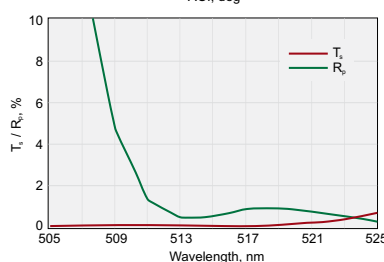
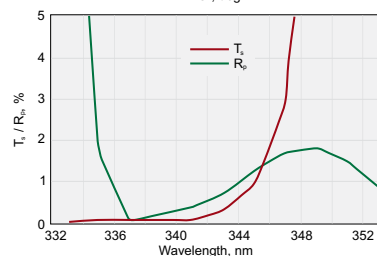
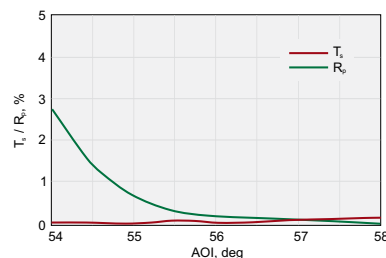
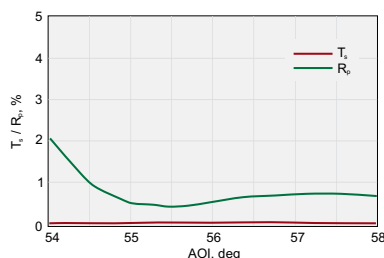
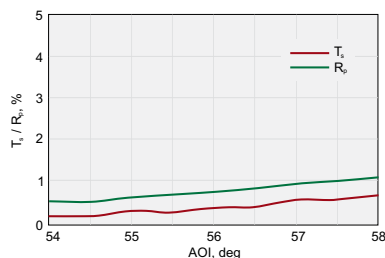
Round Polarizers. Material – UV FS. $T_s < 0.2\%$, $R_p < 0.2\%$.
Extinction ratio for transmitted light $T_p/T_s > 500:1$

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	
800	25.4	3.0	420-1256UHT	
1030	25.4	3.0	420-1248UHT	

HIGH TRANSMISSION THIN FILM POLARIZERS

Round Polarizers. Material – UV FS. $R_s / T_p > 99.5 / 99.0\%$.
Extinction ratio for transmitted light $T_p/T_s > 200:1$

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	
343	25.4	3.0	420-1242HT	
515	25.4	3.0	420-1244HT	
800	25.4	3.0	420-1256HT	
1030	25.4	3.0	420-1248HT	



420-1242HT.

High Transmission @ 343 nm,
 $R_s/T_p > 99.5/99.0\%$, AOI= 56°

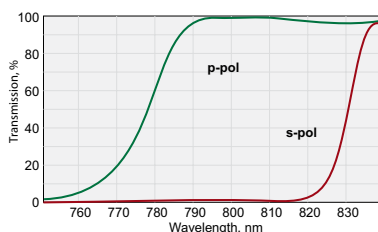
420-1244HT.

High Transmission @ 515 nm,
 $R_s/T_p > 99.5/99.0\%$, AOI= 56°

420-1248HT.

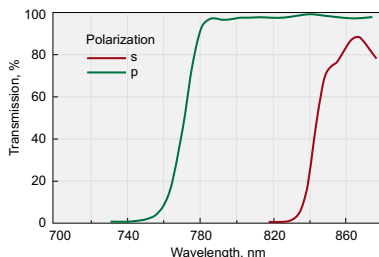
High Transmission @ 1030 nm,
 $R_s/T_p > 99.5/99.0\%$, AOI= 56°

STANDARD THIN FILM POLARIZERS



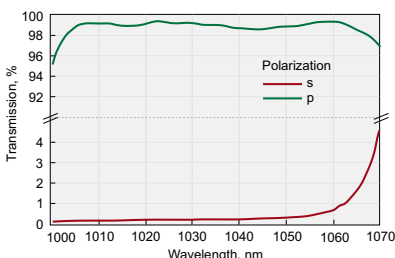
420-1126E.

Transmission @ 800 nm,
Rs/Tp > 99.5/95.0 %, AOI=56°



420-1136E.

Transmission @ 780-820 nm,
Rs/Tp > 99.5/95.0 %, AOI=56°



420-1268E.

Transmission @ 1010-1050 nm,
Rs/Tp > 99.5/95.0 %, AOI=56°

Please contact us if you need thin film laser polarizers of other wavelengths or other types of substrates.

Round Polarizers. Material – UV FS. 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	
266	12.7	3.2	420-1110E	
343	12.7	3.0	420-1112E	
400	12.7	3.0	420-1123E	
515	12.7	3.0	420-1114E	
800	12.7	3.0	420-1126E	
780-820	12.7	3.0	420-1136E	
1030	12.7	3.0	420-1118E	
1010-1050	12.7	3.0	420-1138E	
266	25.4	3.0	420-1240E	
343	25.4	3.0	420-1242E	
400	25.4	3.0	420-1253E	
515	25.4	3.0	420-1244E	
800	25.4	3.0	420-1256E	
780-820	25.4	3.0	420-1266E	
1030	25.4	3.0	420-1248E	
1010-1050	25.4	3.0	420-1268E	
266	50.8	6.0	420-1510E	
343	50.8	6.0	420-1512E	
400	50.8	6.0	420-1503E	
515	50.8	6.0	420-1514E	
800	50.8	6.0	420-1506E	
780-820	50.8	6.0	420-1526E	
1030	50.8	6.0	420-1518E	
1010-1050	50.8	6.0	420-1528E	

Rectangular Polarizers. Material – UV FS. Rs / Tp > 99.5 / 95.0%.
Extinction ratio for transmitted light Tp/Ts >2 00:1

Wavelength, nm	Rectangular dimensions		Thickness T, mm	Catalogue number	
	Length, mm	Width, mm			
266	28.6	14.3	3.0	420-1270	
343	28.6	14.3	3.0	420-1272	
400	28.6	14.3	3.0	420-1283	
515	28.6	14.3	3.0	420-1274	
800	28.6	14.3	3.0	420-1286	
780-820	28.6	14.3	3.0	420-1296	
1030	28.6	14.3	3.0	420-1278	
1010-1050	28.6	14.3	3.0	420-1298	

Related Products

Glan Laser Polarizing, Wollaston Prisms

Find more at EksmaOptics.com

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

Find more at
EksmaOptics.com



Variable Attenuators for Linearly Polarized Laser Beam 990-0070

See page 34

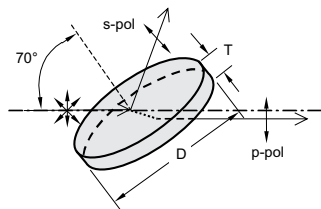


**PHOTO
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THIN FILM POLARIZERS (70° Angle of Incidence)

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 from UV fused silica and feature a high laser damage threshold – up to 50 mJ/cm², 50 fsec pulse, 50 Hz, 800 nm typical.



Specifications

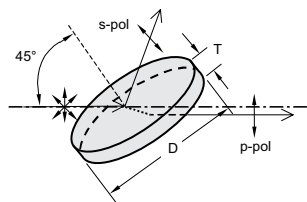
Technology	Ion Beam Sputtering
Substrate material	UV FS
Surface quality	20–10 scratch & dig (MIL-PRF-13830B)
Transmitted wavefront distortion	$\lambda/10$ @ 633 nm
Clear aperture	>90% of diameter
Angle of incidence (AOI)	70°
Angle of incidence tolerance	$\pm 2^\circ$
Parallelism	<30 arcsec

Rectangular Polarizers. Material – UV FS. Extinction ratio for transmitted light $T_p/T_s > 200:1$

Operating wavelength region, nm	Polarization efficiency, R_s/T_p , %	Rectangular dimensions		Thickness T, mm	Catalogue number	
		Length, mm	Width, mm			
980 – 1080	> 99.5 / 95.0	60.0	20.0	4.0	420-1698BBI70	
980 – 1080	> 99.5 / 95.0	60.0	20.0	12.0	420-1698T12BBI70	
750 – 850	> 99.5 / 95.0	60.0	20.0	4.0	420-1696BBI70	
750 – 850	> 99.5 / 95.0	60.0	20.0	12.0	420-1696T12BBI70	
500 – 530	> 99.5 / 95.0	60.0	20.0	4.0	420-1615BBI70	
500 – 530	> 99.5 / 95.0	60.0	20.0	12.0	420-1615T12BBI70	
333 – 353	> 99.5 / 95.0	60.0	20.0	4.0	420-1643BBI70	
333 – 353	> 99.5 / 95.0	60.0	20.0	12.0	420-1643T12BBI70	
255 – 260	> 99.0 / 92.0	60.0	20.0	4.0	420-1657BBI70	
255 – 260	> 99.0 / 92.0	60.0	20.0	12.0	420-1657T12BBI70	

THIN FILM POLARIZERS (45° Angle of Incidence)

These thin film polarizers separate or combine the s- and p-polarization components at 45° angle of incidence. They are designed for use in high energy lasers. Polarizers are made from UV FS and feature high laser damage threshold reaching 10 J/cm² at 1064 nm.



Specifications

Technology	Ion Beam Sputtering
Substrate material	UV FS
Surface quality	20–10 scratch & dig (MIL-PRF-13830B)
Transmitted wavefront distortion	$\lambda/10$ @ 633 nm
Clear aperture	>85% of diameter
Angle of incidence (AOI)	45°
Angle of incidence tolerance	$\pm 1^\circ$
Parallelism	<30 arcsec

TF POLARIZERS WITH HIGH EXTINCTION RATIO

Round Polarizers. Material – UV FS. $T_p > 98\%$, $T_s < 0.1\%$. Extinction ratio for transmitted light $T_p/T_s > 1000:1$

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	
343	25.4	3	420-1242i45HE	
515	25.4	3	420-1244i45HE	
1030	25.4	3	420-1248i45HE	
343	50.8	6	420-1512i45HE	
515	50.8	6	420-1514i45HE	
1030	50.8	6	420-1518i45HE	

STANDARD THIN FILM POLARIZERS

Round Polarizers. Material – UV FS. $R_s / T_p > 99.5 / 95.0\%$. Extinction ratio for transmitted light $T_p/T_s > 200:1$

Wavelength, nm	Diameter D, mm	Thickness T, mm	Catalogue number	
343	25.4	3	420-1242i45	
515	25.4	3	420-1244i45	
1030	25.4	3	420-1248i45	
343	50.8	6	420-1512i45	
515	50.8	6	420-1514i45	
1030	50.8	6	420-1518i45	