

Thin Film Polarizers

Description

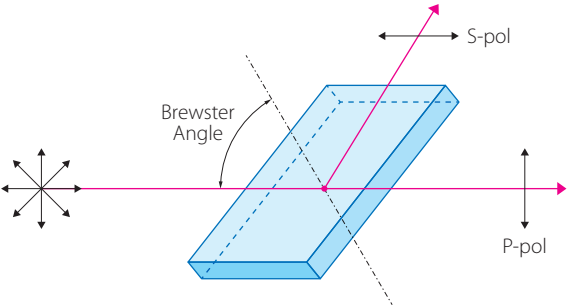
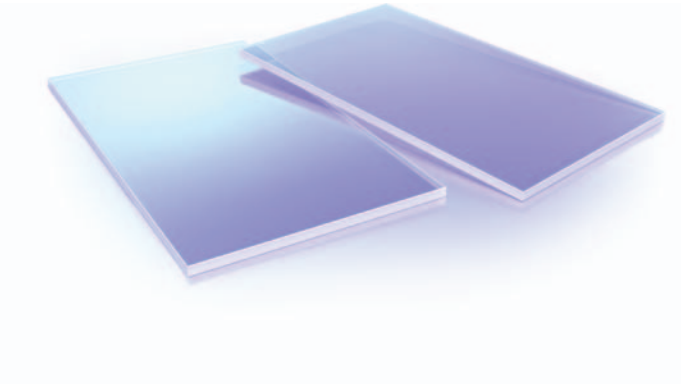
Thin film polarizers are used for high energy applications. They have high damage threshold reaching 10 J/cm² @ 1064 nm for 8 ns. Thin film polarizers are used as an alternative to Glan-Taylor laser polarizing prisms or cube polarizing beamsplitters.

Typically, BK7 or UVFS dielectric coated Thin film polarizers separate the s- and p-polarization components of high energy laser beams and are intended for intra and extra cavity usage.

Typical polarization ratio Tp/Ts is 200:1 and it is achieved at 56° AOI (Brewster angle). For optimal transmission Thin film polarizer should be mounted in an appropriate holder for angular adjustment.

Standard specifications

Material	BK7, UVFS
Diameter/dimension tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	20-10 S-D
Transmitted wavefront distortion	<λ/10 @ 632.8 nm
Parallelism error	<30 arcsec
Extinction ratio Tp/Ts	>200:1
Typical transmission	T _p >95 %
Typical reflection	R _s >99.5 %
Angle of incidence	Brewster angle
Laser damage threshold reports	www.altechna.com/lidt



Miscellaneous

- Custom design Thin film polarizers are available in small and mass production quantities
- Mass production capabilities: 3'000 pieces per month
- Thin film polarizers with dimensions up to 200x150 mm are available

Features

- Efficiently separates the s- and p- polarization components
- Optimised for popular laser wavelengths
- Many Thin film polarizers are available from stock with fast delivery!

Catalog Items

Wavelength, nm	Substrate material	Dimensions, mm	Product ID	Price	
266	UVFS	Ø25.4x3	2-BFP-0266-0254	190 €	
		20x40x5	2-BFP-0266-2040	240 €	
343		Ø25.4x3	2-BFP-0343-0254	145 €	
		20x40x5	2-BFP-0343-2040	215 €	
355		Ø25.4x3	2-BFP-0355-0254	145 €	
		20x40x5	2-BFP-0355-2040	215 €	
400		Ø25.4x3	2-BFP-0400-0254	130 €	
		20x40x5	2-BFP-0400-2040	145 €	
515		Ø25.4x3	2-BFP-0515-0254	130 €	
		20x40x5	2-BFP-0515-2040	145 €	
532		Ø25.4x3	2-BFP-0532-0254	130 €	
		20x40x5	2-BFP-0532-2040	145 €	
780		Ø25.4x3	2-BFP-0780-0254	130 €	
		20x40x5	2-BFP-0780-2040	145 €	
780-820 (centered @ 800nm)	UVFS	Ø25.4x3	2-BFP-0800-A-0254	145 €	
795-805 (centered @ 800nm)		20x40x5	2-BFP-0800-A-2040	190 €	
		Ø25.4x3	2-BFP-0800-0254	130 €	
1020-1040 (centered @ 1030nm)		20x40x5	2-BFP-0800-2040	145 €	
		Ø25.4x3	2-BFP-1030-0254	145 €	
1064		20x40x5	2-BFP-1030-2040	190 €	
		Ø25.4x3	2-BFP-1064-0254	130 €	
1550		BK7	20x40x5	2-BFP-1064-2040	145 €
			Ø25.4x3	2-BFP-1550-0254	130 €
			20x40x5	2-BFP-1550-2040	145 €

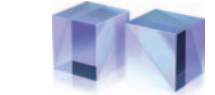
Related products and accessories

HR Laser Line Mirrors (HR)



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Polarizing Cubes for High Energy Applications



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Crystalline Quartz Waveplates



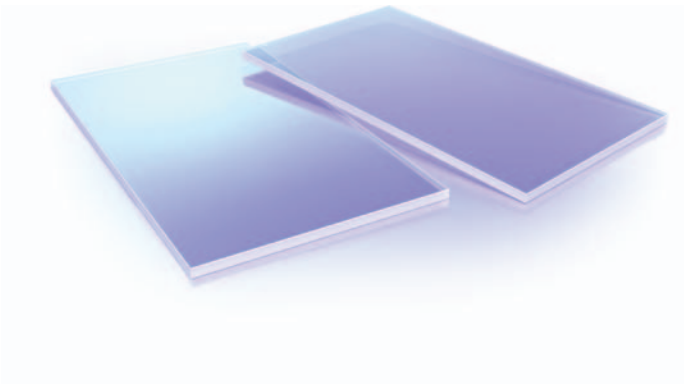
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Watt Pilot Motorized Attenuator



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High Contrast Thin Film Polarizers



Description

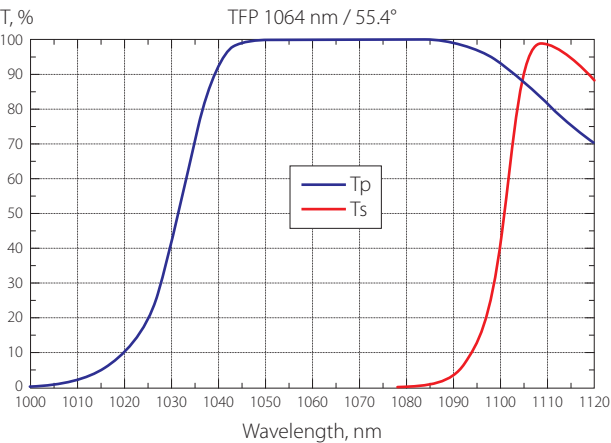
These high contrast Thin Film Polarizers (TFP) are made using advanced Ion Beam Sputtering (IBS) coating technology.

UVFS dielectric coated high contrast thin film polarizers separate the s- and p-polarization components of high energy laser beams. Due to very low losses they are perfect for intra and extra cavity usage.

Typical polarization ratio of these polarizers is well above 1000:1 (Tp:Ts). For optimal performance, high contrast Thin Film Polarizer should be mounted in an appropriate holder allowing angular adjustment.

Standard specifications

Substrate material	UVFS
Diameter tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90%
Surface quality	20-10 S-D
Transmitted wavefront distortion	<λ/10 @ 632.8 nm
Extinction ratio	T _p /T _s >1000:1
Parallelism error	<30 arcsec
Angle of incidence	Brewster angle
Laser damage threshold reports	www.altechna.com/lidt



Features

- Made by IBS technology
- Tp:Ts >1000:1
- High Tp, low absorption & scattering
- No aging effects due to the negligible porosity of the coatings

Catalog Items

Wavelength, nm	Dimensions, mm	Transmission p-pol	Transmission s-pol	Coating Transmitted GDD (p-pol)	Coating Reflected GDD (s-pol)	Product ID	Price
343	Ø25.4x5 20x40x5	>97.5%	<0.1%	GDD <80fs²	GDD <50fs²	2-HCTFP-0343-0254	230 €
						2-HCTFP-0343-2040	265 €
355	Ø25.4x5 20x40x5	>97.5%	<0.1%	GDD <80fs²	GDD <50fs²	2-HCTFP-0355-0254	230 €
						2-HCTFP-0355-2040	265 €
400	Ø25.4x5 20x40x5	>98 %	<0.1%	GDD <300fs²	GDD <100fs²	2-HCTFP-0400-0254	215 €
						2-HCTFP-0400-2040	250 €
515	Ø25.4x5 20x40x5	>99 %	<0.1%	GDD <300fs²	GDD <100fs²	2-HCTFP-0515-0254	215 €
						2-HCTFP-0515-2040	250 €
532	Ø25.4x5 20x40x5	>99 %	<0.1%	GDD <300fs²	GDD <100fs²	2-HCTFP-0532-0254	215 €
						2-HCTFP-0532-2040	250 €
800	Ø25.4x5 20x40x5	>99 %	<0.1%	GDD <400fs²	GDD <200fs²	2-HCTFP-0800-0254	230 €
						2-HCTFP-0800-2040	265 €
1030	Ø25.4x5 20x40x5	>99 %	<0.1%	GDD <500fs²	GDD <200fs²	2-HCTFP-1030-0254	250 €
						2-HCTFP-1030-2040	285 €
1064	Ø25.4x5 20x40x5	>99 %	<0.1%	GDD <500fs²	GDD <200fs²	2-HCTFP-1064-0254	250 €
						2-HCTFP-1064-2040	285 €

Related products and accessories

Low GDD Ultrafast Mirrors



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Polarizing Cubes for High Energy Applications



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High Energy Waveplates



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Watt Pilot Motorized Attenuator



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Broadband (Ultrafast) Thin Film Polarizers

Description

Broadband (ultrafast) thin film polarizers are used for femtosecond lasers.

PLEASE NOTE: The optimal working angle is AOI=72° (±2°).

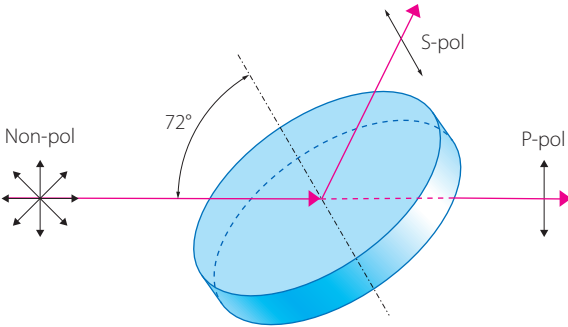
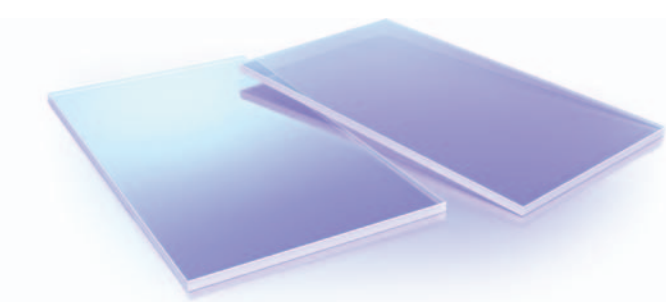
We are offering 4 types of broadband (Ultrafast) thin film polarizers. Polarizers work by transmitting p polarization and reflecting s polarization.

TRANSMISSION POLARIZERS - have polarizing coating on the input face while the output face is AR coated for p polarization. They can be optimized for highest transmission of p polarization $T_p > 94\%$ or for best contrast of polarizations $T_p:T_s > 20:1$.

REFLECTION POLARIZERS - have polarizing coating on the input face while the output face is AR coated for both s and p polarizations. They can be optimized for highest reflection of s polarization $R_s > 98\%$ or for best contrast of polarizations $R_s:R_p > 60:1$. Moreover, the AR coated side of a polarizer has wedge to minimize ghosting. Standard thin film polarizers are designed for optimum performance in the 750 - 850 nm or 980 - 1090 nm range. Design of custom wavelength range is also available.

Standard specifications

Material	BK7, UVFS
Diameter/dimensions tolerance	+0/-0.1 mm
Thickness tolerance	±0.1 mm
Clear aperture	>90 %
Surface quality	20-10 S-D
Transmitted wavefront distortion	<λ/6 @ 632.8 nm
Angle of incidence	72°
Parallelism error	<30 arcsec
Laser damage threshold reports	www.altechna.com/lidt



Features

- Efficiently separates the s- and p- polarization components
- Optimised for popular laser wavelengths
- Many broadband (ultrafast) thin film polarizers are available from stock with fast delivery!

Catalog Items

TRANSMISSION TYPE broadband (ultrafast) thin film polarizers					
Wavelength, nm	Extinction ratio T_p/T_s	Transmission, %	Dimensions, mm	Product ID	Price
750-850 (centered @ 800 nm) Max Contrast	>20:1	$T_p > 85$ $T_s < 4$	Ø25.4x3	2-UFP-0800-0254-T2	275 €
			20x60x2	2-UFP-0800-2060-T2	330 €
			50x160x3	2-UFP-0800-5016-T2	770 €
750-850 (centered @ 800 nm) Max T_p	>9:1	$T_p > 94$ $T_s < 10$	Ø25.4x3	2-UFP-0800-0254-T1	250 €
			20x60x2	2-UFP-0800-2060-T1	315 €
			50x160x3	2-UFP-0800-5016-T1	750 €
980-1090 (centered @ 1030 nm) Max Contrast	>20:1	$T_p > 85$ $T_s < 4$	Ø25.4x3	2-UFP-1030-0254-T2	265 €
			20x60x2	2-UFP-1030-2060-T2	330 €
			50x160x3	2-UFP-1030-5016-T2	770 €
980-1090 (centered @ 1030 nm) Max T_p	>9:1	$T_p > 94$ $T_s < 10$	Ø25.4x3	2-UFP-1030-0254-T1	250 €
			20x60x2	2-UFP-1030-2060-T1	315 €
			50x160x3	2-UFP-1030-5016-T1	750 €

REFLECTION TYPE broadband (ultrafast) thin film polarizers					
Wavelength, nm	Extinction ratio R_s/R_p	Reflection, %	Dimensions, mm	Product ID	Price
750-850 (centered @ 800 nm) Max R_s	>5:1	$R_s > 98$ $R_p < 20$	Ø25.4x3	2-UFP-0800-0254-R1	275 €
			20x60x5	2-UFP-0800-2060-R1	330 €
			50x160x8	2-UFP-0800-5016-R1	770 €
750-850 (centered @ 800 nm) Max Contrast	>60:1	$R_s > 85$ $R_p < 1$	Ø25.4x3	2-UFP-0800-0254-R2	250 €
			20x60x5	2-UFP-0800-2060-R2	315 €
			50x160x8	2-UFP-0800-5016-R2	750 €
980-1090 (centered @ 1030 nm) Max R_s	>5:1	$R_s > 98$ $R_p < 20$	Ø25.4x3	2-UFP-1030-0254-R1	265 €
			20x60x5	2-UFP-1030-2060-R1	330 €
			50x160x8	2-UFP-1030-5016-R1	770 €
980-1090 (centered @ 1030 nm) Max Contrast	>60:1	$R_s > 85$ $R_p < 1$	Ø25.4x3	2-UFP-1030-0254-R2	250 €
			20x60x5	2-UFP-1030-2060-R2	315 €
			50x160x8	2-UFP-1030-5016-R2	750 €

Related products and accessories

Achromatic (Broadband) Waveplates

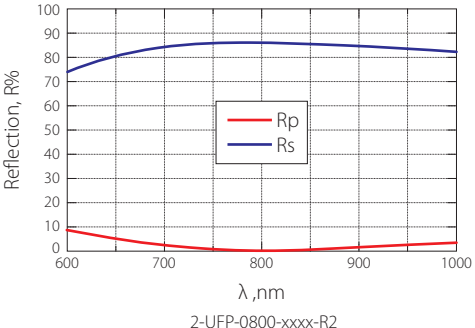
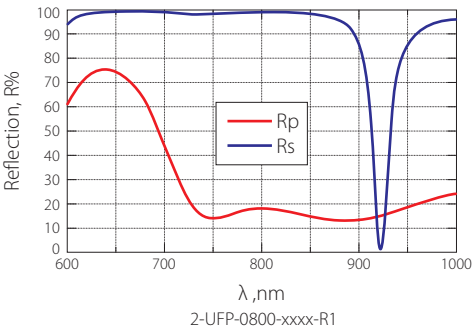
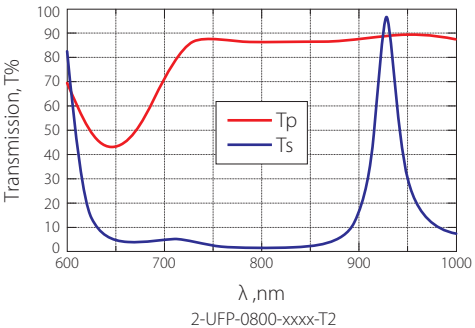
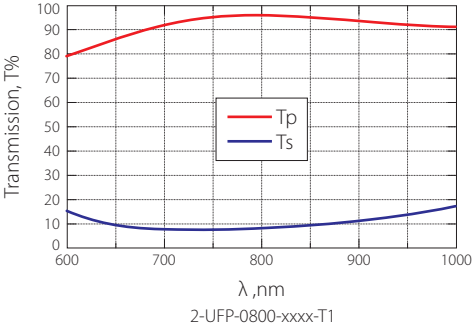


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Watt Pilot - Motorized Attenuator, Ultrafast Version



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Polarizing Cubes

Description

Polarizing cubes are suitable for specified wavelength (250-2200 nm) on four input and output AR coated working surfaces. Polarizing beamsplitter cubes split randomly polarized beams into two orthogonal, linearly polarized components: s-polarized light is reflected at 90° angle while p-polarized light is transmitted.

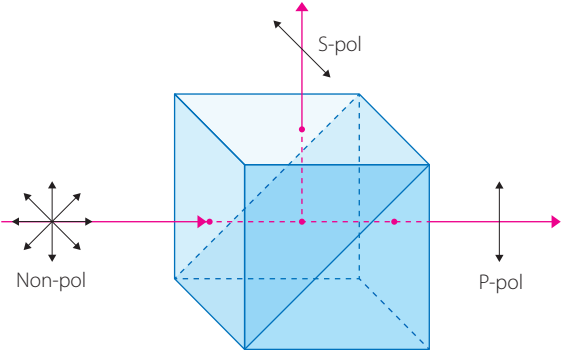
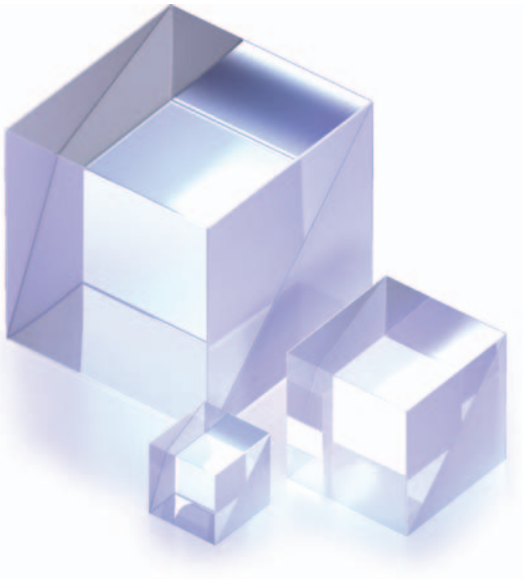
Each beamsplitter consists of a pair of high precision right angle prisms cemented together with a dielectric coating on the hypotenuse of one of the prisms. Typical damage threshold of these cubes is >0,3 J/cm² @ 1064 nm 10 ns at 20 Hz.

Standard specifications

Material	BK7, UVFS, SF glasses
Dimension tolerance	+0/-0.3 mm
Clear aperture	>90 %
Surface quality	40-20 S-D
Surface flatness	<λ/6 @ 632.8 nm
Beam deviation	<3 armin
Laser damage threshold reports	www.altechna.com/lidt

Features

- Optimized for popular laser wavelengths
- Dual wavelength polarizing cubes are also available
- All polarizing cubes are AR coated
- Many Polarizing cubes are available from stock with fast delivery!



Catalog Items

Wavelength, nm	Dimensions, mm	Reflection s-pol. %	Transmission p-pol. %	Product ID	Price
400	12.7 x 12.7 x 12.7	>99	>90	2-PCB-B-0125	295 €
	25.4 x 25.4 x 25.4			2-PCB-B-0200	320 €
450-650	12.7 x 12.7 x 12.7	>99.5	>95	2-PCB-C-0125	120 €
	25.4 x 25.4 x 25.4			2-PCB-C-0200	135 €
532	12.7 x 12.7 x 12.7	>99.8	>97	2-PCB-D-0125	114 €
	25.4 x 25.4 x 25.4			2-PCB-D-0200	130 €
633	12.7 x 12.7 x 12.7			2-PCB-E-0125	114 €
	25.4 x 25.4 x 25.4			2-PCB-E-0200	130 €
700-900	12.7 x 12.7 x 12.7	>99.5	>95	2-PCB-F-0125	120 €
	15 x 15 x 15			2-PCB-F-0150	130 €
	25.4 x 25.4 x 25.4			2-PCB-F-0200	135 €
780	12.7 x 12.7 x 12.7	>99.8	>97	2-PCB-G-0125	114 €
	25.4 x 25.4 x 25.4			2-PCB-G-0200	130 €
850	12.7 x 12.7 x 12.7			2-PCB-H-0125	114 €
	25.4 x 25.4 x 25.4			2-PCB-H-0200	130 €
1020-1100	12.7 x 12.7 x 12.7	>99.5		2-PCB-J-0125	120 €
	25.4 x 25.4 x 25.4			2-PCB-J-0200	135 €
1064	12.7 x 12.7 x 12.7	>99.8		2-PCB-K-0125	114 €
	25.4 x 25.4 x 25.4			2-PCB-K-0200	130 €
1310	12.7 x 12.7 x 12.7		2-PCB-L-0125	114 €	
	25.4 x 25.4 x 25.4		2-PCB-L-0200	130 €	
1550	12.7 x 12.7 x 12.7		2-PCB-M-0125	114 €	
	25.4 x 25.4 x 25.4		2-PCB-M-0200	130 €	

Related products and accessories

Crystalline Quartz Waveplates



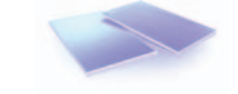
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HR Laser Line Mirrors (HR)



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High Contrast Thin Film Polarizers



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Watt Pilot Motorized Attenuator



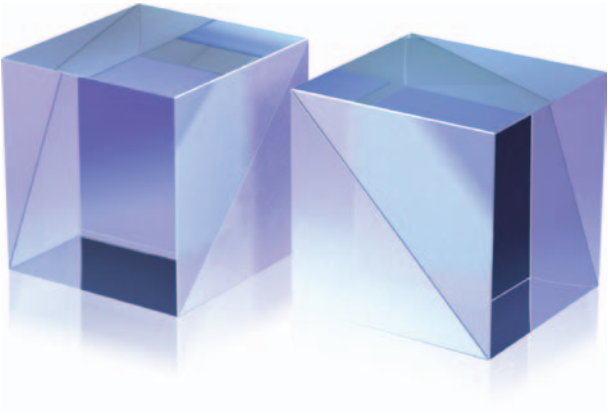
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6PT169 - Three Angle Prism / Beamsplitter Table



www.altechna.com

Polarizing Cubes for High Energy Applications



Description

Optically contacted polarizing beamsplitter cubes are optimized for superior performance in high power applications. These cubes can with stand energy fluencies up to 20 J/cm² @ 1064 nm for 10 ns pulses at 20 Hz. High Energy beamsplitter cubes are easier to mount than Thin film polarizers making them easier to use in laser setups. High surface flatness reduces wavefront distortion making these cubes a perfect candidate for intra-cavity applications.

Standard specifications

Material	UVFS
Dimension tolerance	+0/-0.3 mm
Clear aperture	>90 %
Surface quality	40-20 S-D
Surface flatness	< $\lambda/6$ @ 632.8 nm
Beam deviation	<3 arcmin
Transmission	Tp >97 % @ central wavelength
Reflection	Rs >99.5% @ central wavelength
Polarizing contrast	1000:1
Laser Damage Threshold	up to 20J/cm @ 1064 nm, 10 ns, 20 Hz

Catalog Items

Wavelength, nm	Dimensions, mm	Reflection s-pol, %	Transmission p-pol, %	Product ID	Price
345-365 (centered @ 355 nm)	12.7 x 12.7 x 12.7	>99.5	>97	2-HPCB-A-0125	310 €
510-550 (centered @ 532 nm)				2-HPCB-B-0125	260 €
1020-1090 (centered @ 1064 nm)				2-HPCB-C-0125	260 €
1510-1580 (centered @ 1550 nm)				2-HPCB-D-0125	260 €