



CHAPTERS

Optical Elements

Polarization Optics

Optical Isolators

Optical Systems

Optics Kits

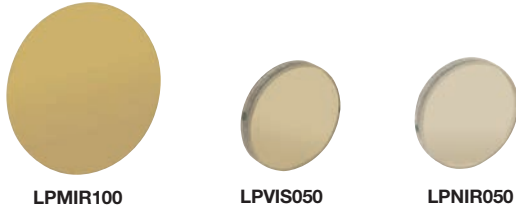
SECTIONS

Linear Polarizers

Wave Plates/Retarders

Depolarizers

UV, VIS, NIR, and IR Linear Polarizers (Page 1 of 2)

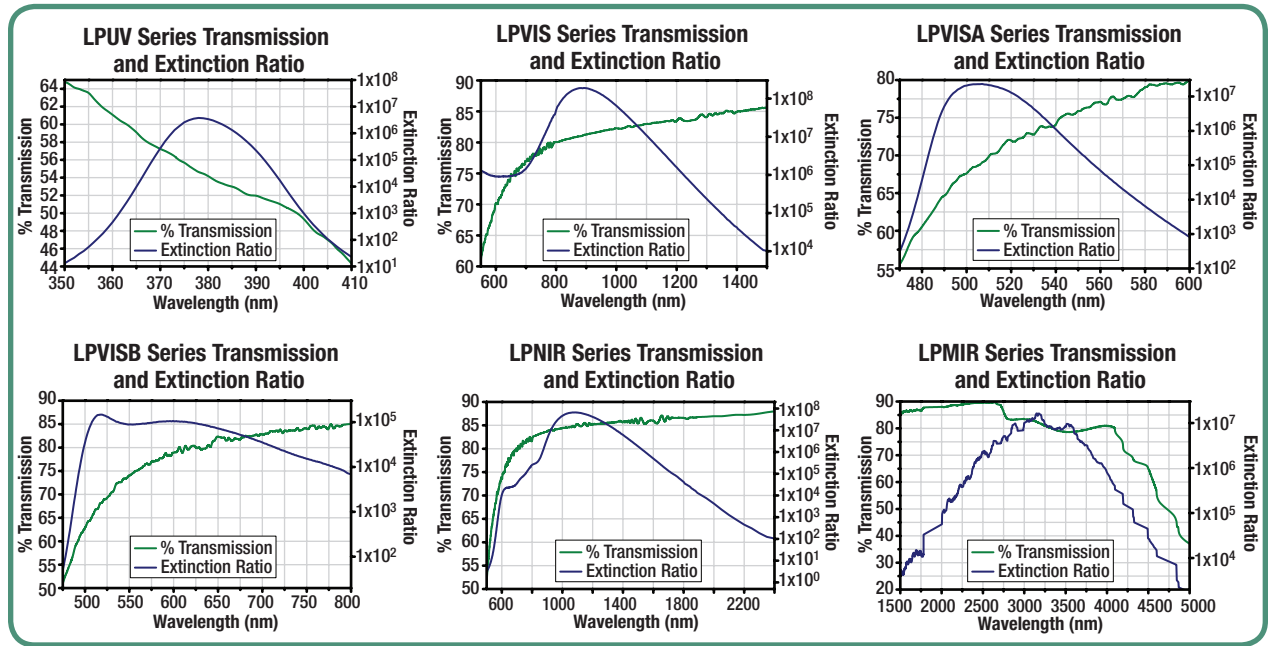


The LPUV, LPVIS, LPNIR, and LPMIR Linear Polarizer Series are a better alternative to conventional polymer-based polarizers because ellipsoid silver nanoparticles embedded in sodium-silicate glass are used to generate the polarizing effect. Although both polarizer types absorb the light polarized perpendicular to the transmission axis, the nanoparticles have a significantly higher damage threshold

- Higher Extinction Ratio (up to 100,000:1) than Typical Sheet Polarizers
- 20 to 120 °C Operating Temperature
- High Laser Damage Threshold
- Resistant Against UV Radiation and Chemicals

and a dramatically better extinction ratio. With the exception of the LPMIR series, the sodium-silicate glass is sandwiched between index-matched glass substrates, and a line is marked on the edge of the polarizer to indicate the polarization axis.

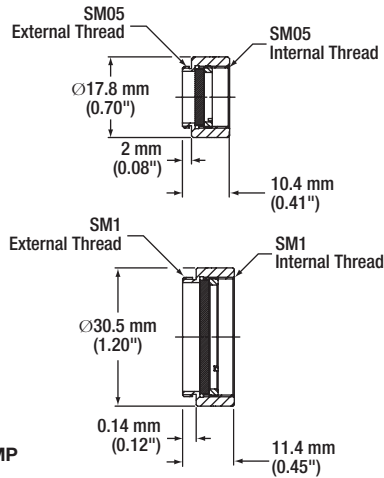
Our linear glass polarizers are available in two sizes, Ø12.5 mm and Ø25.0 mm, and can be cleaned with standard solvents for optics.



Transmission and Extinction Ratio

SERIES	LPUV	LPVIS	LPVISA	LPVISB	LPNIR	LPMIR
Wavelength Range	365 – 395 nm	550 – 1500 nm	480 – 550 nm	500 – 720 nm	650 – 2000 nm	1500 – 5000 nm
EXTINCTION RATIO	WAVELENGTH RANGE					
>100,000:1	372 – 388 nm	600 – 1200 nm	-	-	850 – 1600 nm	-
>10,000:1	369 – 390 nm	550 – 1500 nm	480 – 550 nm	500 – 720 nm	750 – 1800 nm	2000 – 4500 nm
>1000:1	365 – 395 nm	-	-	-	650 – 2000 nm	1500 – 5000 nm
Polarizing Material	Nanoparticles in Sodium-Silicate Glass					
Substrate Material	Schott Glass B270					None
Diameter (Tolerance)	12.5 or 25.0 mm (±0.2 mm)					
Clear Aperture	90% of Surface Dimension					
Thickness	2.0 ± 0.2 mm					200 ± 50 µm
Wavefront Distortion	<λ/4 @ 633 nm					<3λ @ 633 nm
Surface Quality	Surface Imperfections: 5/2 x 0.04 within 1 cm ² acc. (ISO 10110-07)					—
Acceptance Angle	±20°					
Laser Damage Threshold	1 W/cm ² Continuous Block 5 W/cm ² Continuous Pass					10 W/cm ² Continuous Block 25 W/cm ² Continuous Pass
Operating Temperature	-20 to 120 °C					-50 to 400 °C
Maintenance	Clean with Standard Cleaning Solvents					

UV, VIS, NIR, and IR Linear Polarizers (Page 2 of 2)



- Mounted in SM05- or SM1- Engraved Lens Tubes
- Transmission Axis Conveniently Aligned to Engraved Mark

Thorlabs now offers the high-power Linear Polarizer Series in versatile SM05 (0.535"-40) or SM1 (1.035"-40) mounts. The mounts are engraved with the part number, wavelength range, and have a mark on the side and front to show the transmission axis. The polarizer can be removed from the mount by removing the threaded retaining ring. The internal and external SM05 or SM1 threads allow the mounted linear polarizers to be easily integrated with any of Thorlabs' optomechanics.

Unmounted UV Polarizers

ITEM #	\$	£	€	RMB	DESCRIPTION
LPUV050	\$ 258.00	£ 185.76	€ 224,46	¥ 2,056.26	UV Linear Polarizer, Ø12.5 mm, 365 – 395 nm
LPUV100	\$ 720.00	£ 518.40	€ 626,40	¥ 5,738.40	UV Linear Polarizer, Ø25.0 mm, 365 – 395 nm

Unmounted Visible Polarizers

ITEM #	\$	£	€	RMB	DESCRIPTION
LPVIS050	\$ 328.00	£ 236.16	€ 285,36	¥ 2,614.16	Visible Linear Polarizer, Ø12.5 mm, 550 – 1500 nm
LPVIS100	\$ 832.00	£ 599.04	€ 723,84	¥ 6,631.04	Visible Linear Polarizer, Ø25.0 mm, 550 – 1500 nm
LPVISA050	\$ 310.00	£ 223.20	€ 269,70	¥ 2,470.70	Visible Linear Polarizer, Ø12.5 mm, 480 – 550 nm
LPVISA100	\$ 816.00	£ 587.52	€ 709,92	¥ 6,503.52	Visible Linear Polarizer, Ø25.0 mm, 480 – 550 nm
LPVISB050	\$ 310.00	£ 223.20	€ 269,70	¥ 2,470.70	Visible Linear Polarizer, Ø12.5 mm, 500 – 720 nm
LPVISB100	\$ 816.00	£ 587.52	€ 709,92	¥ 6,503.52	Visible Linear Polarizer, Ø25.0 mm, 500 – 720 nm

Unmounted IR Polarizers

ITEM #	\$	£	€	RMB	DESCRIPTION
LPNIR050	\$ 338.00	£243.36	€ 294,06	¥ 2,693.86	Near IR Linear Polarizer, Ø12.5 mm, 650 – 2000 nm
LPNIR100	\$ 832.00	£599.04	€ 723,84	¥ 6,631.04	Near IR Linear Polarizer, Ø25.0 mm, 650 – 2000 nm
LPMIR050	\$ 548.00	£394.56	€ 476,76	¥ 4,367.56	Mid IR Linear Polarizer, Ø12.5 mm, 1500 – 5000 nm
LPMIR100	\$ 1,400.00	£1,008.00	€ 1,218,00	¥ 11,158.00	Mid IR Linear Polarizer, Ø25.0 mm, 1500 – 5000 nm

Mounted UV Polarizers

ITEM #	\$	£	€	RMB	DESCRIPTION
LPUV050-MP	\$ 288.00	£ 207.36	€ 250,56	¥ 2,295.36	UV Linear Polarizer, SM05-Mounted, 365 – 395 nm, Ø10.9 mm CA
LPUV100-MP	\$ 750.00	£ 540.00	€ 652,50	¥ 5,977.50	UV Linear Polarizer, SM1-Mounted, 365 – 395 nm, Ø22.5 mm CA

Mounted Visible Polarizers

ITEM #	\$	£	€	RMB	DESCRIPTION
LPVIS050-MP	\$ 358.00	£ 257.76	€ 311,46	¥ 2,853.26	Visible Linear Polarizer, SM05-Mounted, 550 – 1500 nm, Ø10.9 mm CA
LPVIS100-MP	\$ 862.00	£ 620.64	€ 749,94	¥ 6,870.14	Visible Linear Polarizer, SM1-Mounted, 550 – 1500 nm, Ø22.5 mm CA
LPVISA050-MP	\$ 340.00	£ 244.80	€ 295,80	¥ 2,709.80	Visible Linear Polarizer, SM05-Mounted, 480 – 550 nm, Ø10.9 mm CA
LPVISA100-MP	\$ 846.00	£ 609.12	€ 736,02	¥ 6,742.62	Visible Linear Polarizer, SM1-Mounted, 480 – 550 nm, Ø22.5 mm CA
LPVISB050-MP	\$ 340.00	£ 244.80	€ 295,80	¥ 2,709.80	Visible Linear Polarizer, SM05-Mounted, 500 – 720 nm, 10.9 mm CA
LPVISB100-MP	\$ 846.00	£ 609.12	€ 736,02	¥ 6,742.62	Visible Linear Polarizer, SM1-Mounted, 500 – 720 nm, 22.5 mm CA

Mounted IR Polarizers

ITEM #	\$	£	€	RMB	DESCRIPTION
LPNIR050-MP	\$ 368.00	£ 264.96	€ 320,16	¥ 2,932.96	Near IR Linear Polarizer, SM05-Mounted, 650 – 2000 nm, Ø10.9 mm CA
LPNIR100-MP	\$ 862.00	£ 620.64	€ 749,94	¥ 6,870.14	Near IR Linear Polarizer, SM1-Mounted, 650 – 2000 nm, Ø22.5 mm CA
LPMIR050-MP	\$ 578.00	£ 416.16	€ 502,86	¥ 4,606.66	Mid IR Linear Polarizer, SM05-Mounted, 1500 – 5000 nm, Ø10.9 mm CA
LPMIR100-MP	\$ 1,430.00	£ 1,029.60	€ 1,244,10	¥ 11,397.10	Mid IR Linear Polarizer, SM1-Mounted, 1500 – 5000 nm, Ø22.5 mm CA