

Precision Linear Polarizers

Meadowlark Optics manufactures Precision Linear Polarizers using dichroic sheet polarizer material laminated between high quality glass substrates (BK 7 material, $\lambda/10$ flat). For visible wavelength polarizers, this construction produces a total transmitted wavefront distortion of less than $\lambda/5$.

We use various polarizer materials to cover wavelengths between 320 and 2000 nm. Both visible and near infrared polarizers are supplied with a high-efficiency, broadband antireflection (AR) coating; single-layer AR coatings are optional on our ultraviolet polarizers.

Both mounted and unmounted Precision Linear Polarizers are offered as standard products. Meadowlark Optics Precision Linear Polarizers have their transmission axis clearly marked.

SPECIFICATIONS	
Polarizer Material	Dichroic Polymer
Substrate Material	
Ultraviolet	UV Grade Synthetic Fused Silica
Visible	BK 7 Grade A, fine annealed
Near Infrared	BK 7 Grade A, fine annealed
Transmitted Wavefront Distortion (at 632.8 nm)	
Ultraviolet	$\leq \lambda/2$
Visible	$\leq \lambda/5$
Near Infrared	$\leq \lambda/2$
Surface Quality	40-20 scratch and dig
Beam Deviation	
Ultraviolet	≤ 2 arc min
Visible	≤ 1 arc min
Near Infrared	≤ 2 arc min
Reflectance (per surface, at normal incidence)	
Ultraviolet	$\sim 4.25\%$ (uncoated)
Visible	$\leq 0.5\%$
Near Infrared	$\leq 0.5\%$
Diameter Tolerance	
Mounted	± 0.005 in.
Unmounted	$+0/-0.010$ in.
Thickness Tolerance	± 0.020 in.
Storage Temperature Range	
Ultraviolet	-50°C to $+50^\circ\text{C}$
Visible	-50°C to $+50^\circ\text{C}$
Near Infrared	-50°C to $+40^\circ\text{C}$
Recommended Safe Operating Limit	1 W/cm ² , CW 200 mJ/cm ² , 20 ns, visible 2 J/cm ² , 20 ns, 1064 nm
<i>Prolonged exposure to strong ultraviolet radiation may damage these polarizers.</i>	
<i>Custom coatings are available. Please contact your Meadowlark Optics sales engineer for a custom quote.</i>	

ORDERING INFORMATION			
Mounted			
Diameter (in.)	Clear Aperture (in.)	Thickness (in.)	Part Number
1.00	0.40	0.25	DPM-050-UV1
1.00	0.40	0.25	DPM-050-VIS
1.00	0.40	0.25	DPM-050-NIR1
1.00	0.40	0.25	DPM-050-NIR2-n
1.00	0.70	0.35	DPM-100-UV1
1.00	0.70	0.35	DPM-100-VIS
1.00	0.70	0.35	DPM-100-NIR1
1.00	0.70	0.35	DPM-100-NIR2-n
2.00	1.20	0.50	DPM-200-UV1
2.00	1.20	0.50	DPM-200-VIS
2.00	1.20	0.50	DPM-200-NIR1
2.00	1.20	0.50	DPM-200-NIR2-n
Unmounted			
Diameter (in.)	Clear Aperture (in.)	Thickness (in.)	Part Number
0.50	0.40	0.13	DP-050-UV1
0.50	0.40	0.13	DP-050-VIS
0.50	0.40	0.14	DP-050-NIR1
0.50	0.40	0.14	DP-050-NIR2-n
1.00	0.80	0.26	DP-100-UV1
1.00	0.80	0.26	DP-100-VIS
1.00	0.80	0.27	DP-100-NIR1
1.00	0.80	0.27	DP-100-NIR2-n
<i>Custom AR coatings are available on all polarizers.</i>			
<i>For NIR2 polarizers, please choose from the following AR coating options:</i>			
<i>NIR2 – 1 covers 650 – 950 nm</i>			
<i>NIR2 – 2 covers 900 – 1250 nm</i>			
<i>NIR2 – 3 covers 1200 – 1700 nm</i>			