Dichroic Circular Polarizer

Circular polarizers transmit either left-circular polarized light or right-circular polarized light for an input beam of any polarization state. When circularly polarized light is reflected, it's propagation direction reverses, changing left-circular polarization to right circular polarization and vice-versa. Therefore the same polarizer that produces circular polarization of the incident beam will block the return beam. Achievement of optical isolation using the circular polarizer requires that the reflection be specular and that no significant depolarization or polarization modification occur in any intervening medium between the reflector and optical isolator. We offer circular polarizers in two basic designs, each for use in air:

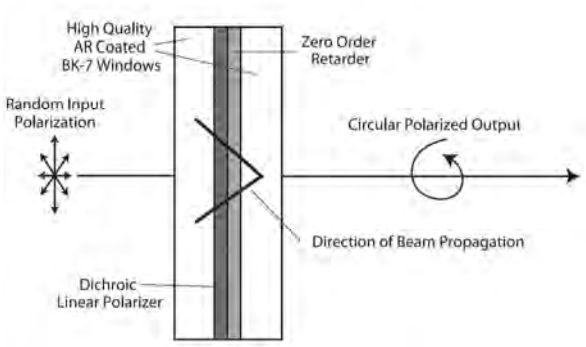
- Dichroic Polarizer / Zero-Order Retarder
- Beamsplitting Polarizer / Zero-Order Retarder

Meadowlark Optics Dichroic Circular Polarizers consist of a dichroic linear polarizer and true zero-order quarterwave retarder. Precisely aligning the retarder fast axis at 45° to the linear polarization direction ensures optimum performance.

True zero-order retarders are used in the assembly of our Dichroic Circular Polarizers and tight retardance tolerances contribute to the final performance. Once aligned, both polarizer and retarder materials are laminated between optically flat substrates, providing a peak-to-valley transmitted wavefront distortion of less than λ/5. Anti-reflection coated windows ensure surface reflection losses are minimized.

Achievement of the desired polarization effect requires proper orientation of your Dichroic Circular Polarizer; be sure to position the indicator marking in the direction of beam propagation. Our standard Dichroic Circular Polarizers are designed for single wavelength applications.

Dichroic Circular Polarizer Construction





Key Features

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High isolation

Large diameters available

Low transmitted wavefront distortion

Polarization Suite

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Linear Polarizers

Precision Linear Polarizer
High Contrast Linear Polarizer
Ultra-High Contrast Linear Polarizer
Glan-Thompson Polarizer
Ultra Broadband Polarizer
MWIR Polarizer
Deep Ultraviolet Polarizer

Beamsplitting Polarizers

Wire Grid Versalight Polarizer
Wire Grid Versalight Beam Splitter
Laser Line Beamsplitting Polarizer
Broadband Beamsplitting Polarizer
Polarizing Bandpass Filter

Circular Polarizers

Dichroic Circular Polarizer
Beam Separator

SPECIFICATIONS

Standard Wavelengths	532, 632.8, 670, 780, 850, 1064, and 1550 nm
Substrate Material	N-BK7
Polarizer Material	Dichroic Polymer
Retarder Material	Birefringent Polymer
Transmitted Wavefront Distortion (P-V @ 632.8 nm)	
Visible **Near Infrared**	≤ λ/5 ≤ λ/2
Beam Deviation	
Visible **Near Infrared**	≤ 1 arc-min ≤ 2 arc-min
Surface Quality	40 – 20 scratch-dig
Reflectance (per surface)	≤ 0.5%
Isolation	> 99.8%
Storage Temperature	-20˚C to +50˚C
Operating Temperature	-20˚C to +50˚C
Laser Damage Threshold	1 W/cm^2, CW

Prolonged exposure to strong ultraviolet radiation may damage these polarizers.

ORDERING INFORMATION

Mounted			
Clear Aperture in. (mm)	***Thickness in. (mm)***	***Diameter ± 0.005 in. (± 0.13 mm)***	***Part Number***
0.40 (10.2 mm)	0.25 (6.35 mm)	Ø1.00 (Ø25.4 mm)	CPM – 050 – λ
0.70 (17.8 mm)	0.35 (8.9 mm)	Ø1.00 (Ø25.4 mm)	CPM – 100 – λ
1.20 (30.5 mm)	0.50 (12.7 mm)	Ø2.00 (Ø50.8 mm)	CPM – 200 – λ
Unmounted			
Clear Aperture in. (mm)	***Thickness in. (mm)***	***Diameter +0/-0.010 in. (+0/-0.25 mm)***	***Part Number***
0.40 (10.2 mm)	0.13 (3.3 mm)	Ø0.50 (Ø12.7 mm)	CP – 050 – λ
0.80 (20.3 mm)	0.26 (6.6 mm)	Ø1.00 (Ø25.4 mm)	CP – 100 – λ

Meadowlark Optics standard Dichroic Circular Polarizers provide left-hand circular output.
Please call to request a quote for right-hand output.
Append a "-RH" to your part number for right hand circular output.

meadowlark optics

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