



S & R Optic GmbH

Broadband Mica Waveplates - Zero Order

General Information

Broadband mica waveplates are designed primarily for use in ophthalmic imaging applications.

S & R Optics unique cleaving process, with highest grade muscovite mica, allows best transmission, purity, homogeneity and highest surface quality specifications offered in the whole industry.

Visible broadband mica retarders are centered at 550nm and effective at the range from 400 - 700nm.

Near Infrared mica retarders are centered at 850nm and effective at the range from 700 - 1100nm.

Ring mount options and AR coating for enhanced transmission are available upon request.

Key Features
Inexpensive
Custom sizes and
shapes ≥ 200 mm mm
High stock availability

SPECIFICATIONS:

Transmitted Wavefront: $< 1 \lambda$ at 633 nm for diam. $\leq 25,4$ mm

Clear Aperture: ≥ 85 % of central diameter

Substrate Material: Mica and N-BK7 glass

Surface Quality: 40-20 scratch dig

Diameter: $\varnothing \pm 0/-0,25$ mm

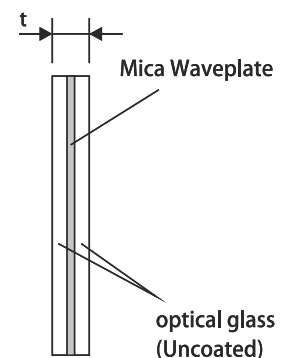
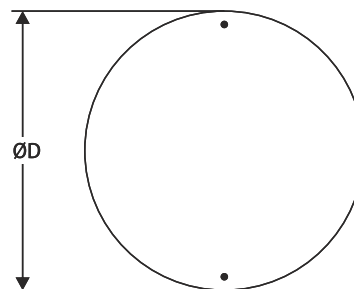
Retardation Tolerance: $\lambda/20$ over wavelength range

Thickness t: $\pm 0,25$ mm

Damage Threshold: $0,7 \text{ J cm}^2$, 11ns, 100Hz@1064nm (test result)

Outline Drawing

Indicator dots are marked on the front surface to identify crystal optical axis.



Part Number	Wavelength Range (nm)	Center Wavelength (nm)	Retardation	Diameter (mm)	Thickness t (mm)
MA0100455	400-700	550	$\lambda/4$	10	2,5
MA0200455	400-700	550	$\lambda/4$	20	2,5
MA0250455	400-700	550	$\lambda/4$	25	2,5
MA0254455	400-700	550	$\lambda/4$	25,4	2,5
MA0300455	400-700	550	$\lambda/4$	30	2,5
MA0400455	400-700	550	$\lambda/4$	40	3,5
MA0500455	400-700	550	$\lambda/4$	50	3,5
MA0100255	400-700	550	$\lambda/2$	10	2,5
MA0200255	400-700	550	$\lambda/2$	20	2,5
MA0250255	400-700	550	$\lambda/2$	25	2,5
MA0254255	400-700	550	$\lambda/2$	25,4	2,5
MA0300255	400-700	550	$\lambda/2$	30	2,5
MA0400255	400-700	550	$\lambda/2$	40	3,5
MA0500255	400-700	550	$\lambda/2$	50	3,5
MA0100855	700-1100	850	$\lambda/4$	10	2,5
MA0200455	700-1100	850	$\lambda/4$	20	2,5
MA0100255	700-1100	850	$\lambda/2$	10	2,5
MA0200255	700-1100	850	$\lambda/2$	20	2,5

Key Features
 Cost-Effective
 Customizable Sizes, Shapes,
 Wavelengths and Retardances
 available

Mica Waveplates – Zero Order

Mica waveplates are recommended for low power applications. Application areas are imaging systems, stress analyzers, helium neon lasers, detection schemes, research & development and special lighting technologies.

Mica waveplates are available at any specified wavelength from 400 to 2.000 nm.

Each mica sheet is sandwiched between protective glass discs for easy handling. Indicator dots are marked on the front surface to identify crystal optical axis.

SPECIFICATIONS:

Transmitted Wavefront: $<1 \text{ } \Lambda @ 633\text{nm}$ for diam. $\leq 25.0\text{mm}$
 Clear Aperture: $\geq 85 \%$ of central diameter
 Substrate Material: Mica and N-BK7 glass
 Surface Quality: 40-20 scratch dig
 Diameter: $\varnothing + 0 / -0,25\text{mm}$
 Retardation Tolerance: $\lambda/50 - \lambda/300$ (wavelength-dependent)
 Thickness t: 2,5 mm - 4,0 mm
 Damage Threshold: $0,7\text{J}/\text{cm}^2$, 11ns, 100Hz @ 1064nm (test result)

- Standard sizes and thicknesses are similar to Broadband Listing
- $\lambda/8$ and other retardation values available
- Custom sizes and shapes from 5 to 200 mm
- AR coatings for enhanced transmission available upon request
- Ring mounting options available upon request

Laser Lines (wavelength-nm)

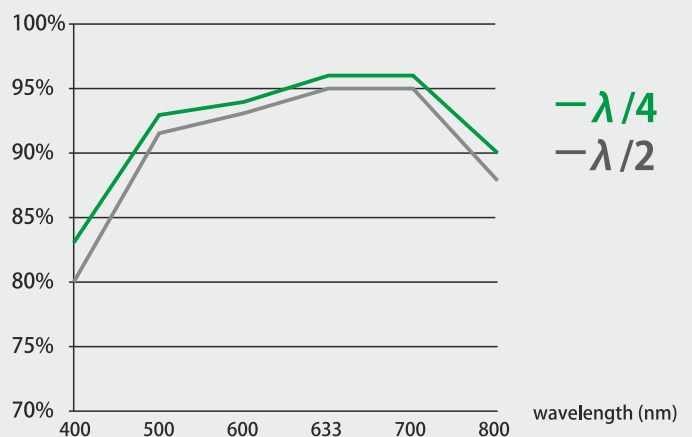
442 - 515 - 543 - 633 - 780 - 850 - 1064 - 1510
 448 - 532 - 589 - 670 - 830 - 904 - 1300 - 1.550

Typical transmission of laminated, uncoated mica waveplates (test result)



Remark: Base raw-material and thickness has a significant impact on transmission.

Typical transmission of laminated and BBAR coated mica waveplates (test result)



Remark: Base raw-material and thickness has a significant impact on transmission.

Product Code

Wavelength Range (nm)	Retardation	Outside Diameter (mm)	Part Number
400-2.000	$\lambda / 4$	5 - 200	MBXXXX4XX
400-2.000	$\lambda / 2$	5 - 200	MBXXXX2XX

Please specify dimension, wavelength and retardation tolerance