

# Micro Lenses | SLM



Micro lenses are spherical plano convex/biconvex lenses with diameters smaller than 4mm. These small lenses are designed for use in equipment and instruments that demand lighter and smaller footprint optics.

- Spherical plano convex lenses are useful when parallel beams are converged or lights from sources are converted to parallel beams, i.e., at infinite conjugate ratios.
- Spherical biconvex lenses are useful when lights from sources are converged or images are relayed to other optical systems, i.e., at unit conjugate ratios.
- Since these lenses are designed at the wavelength 587.6nm (yellow helium line [d]), the focal lengths of them vary at other wavelengths.



Specifications	
Material	LaSF9, SK2, BK7
Design wavelength	587.6nm
Coating	Uncoated
Centration	<3'
Surface Quality (Scratch-Dig)	40-20

### Guide

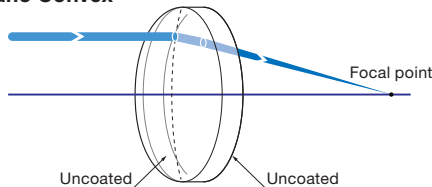
► In addition to our standard products listed on-line and in the catalog, custom products are available. Please contact our Sales Division for assistance with your request.

### Attention

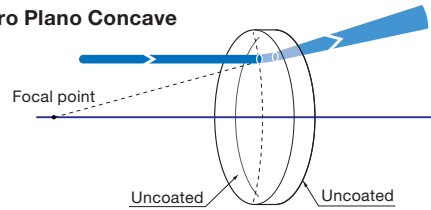
- The micro lenses have spherical aberration and the focal length will vary depending on the wavelength. Please check the "wavelength characteristic of the focal length data" on the Web for the focal lengths of each wavelength.
- The plano convex lenses are designed for parallel light to be incident to the convex surface. Using the lens in reverse may increase the spherical aberration and the focused spot may enlarge and the image will appear out of focus.
- Transmissions losses due to reflection off the front and rear surfaces of the lens can be minimized by coating the surfaces. Consult our SalesDivision for anti-reflection coatings suitable for your application.

### Schematic

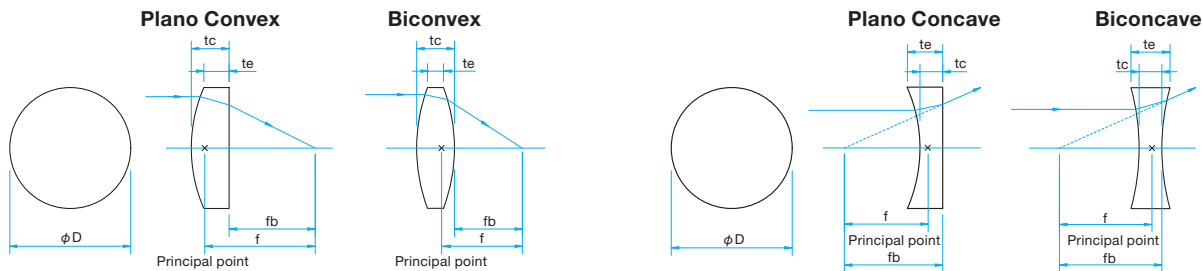
Micro Plano Convex



Micro Plano Concave

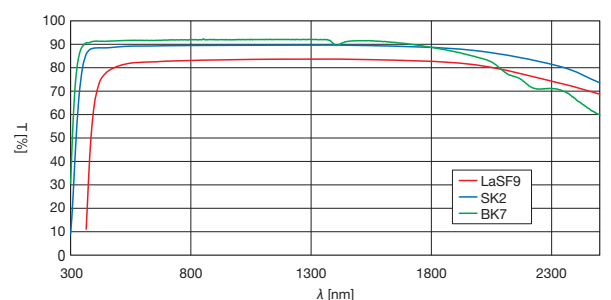


### Outline Drawing



● Tolerance  
 Diameter  $\phi D \pm 0.2$  Thickness  $t_c \pm 0.2$  Focal length  $\pm 5\%$

### Typical Transmittance Data T: Transmission



Application Systems

Optics & Optical Coatings

Opto-Mechanics

Bases

Manual Stages

Actuators & Adjusters

MotORIZED Stages

Light Sources & Laser Safety

Index

Guide

Mirrors

Beamsplitters

Polarizers

**Lenses**

Multi-Element Optics

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

Plano Convex Lenses

Plano Concave Lenses

Biconvex Lenses

Biconcave Lenses

Kit

Reasonable Lens

Cylindrical

Others



### Plano Convex

Part Number	Diameter $\phi D$ [mm]	Focal length $f$ [mm]	Back focal length $f_b$ [mm]	Edge thickness $t_e$ [mm]	Center thickness $t_c$ [mm]	Material	Radius of curvature $r$ [mm]
SLM-1.5-01P	$\phi 1.5$	1.0	0.56	0.35	0.8	LaSF9	0.85
SLM-1.5-1.5P	$\phi 1.5$	1.5	0.44	1.65	1.9	LaSF9	1.25
SLM-02-1.5P	$\phi 2$	1.5	0.5	1.4	1.9	LaSF9	1.28
SLM-02-02P	$\phi 2$	2.0	1.2	1.2	1.5	LaSF9	1.70
SLM-02-2.5P	$\phi 2$	2.5	1.6	1.3	1.6	LaSF9	2.13
SLM-02-03P	$\phi 2$	3.0	2.2	1.0	1.3	LaSF9	2.55
SLM-03-2.5P	$\phi 3$	2.5	1.4	1.5	2.1	LaSF9	2.13
SLM-03-03P	$\phi 3$	3.0	1.9	1.5	2.0	LaSF9	2.55
SLM-03-04P	$\phi 3$	4.0	3.3	1.0	1.3	LaSF9	3.40
SLM-03-06P	$\phi 3$	6.0	5.1	1.1	1.4	SK2	3.64
SLM-04-04P	$\phi 4$	4.0	2.5	1.5	2.5	SK2	2.43
SLM-04-06P	$\phi 4$	6.0	5.0	0.7	1.3	SK2	3.64
SLM-04-08P	$\phi 4$	8.0	7.1	1.1	1.5	SK2	4.86
SLM-04-10P	$\phi 4$	10.0	9.1	1.2	1.5	SK2	6.07

### Biconvex

Part Number	Diameter $\phi D$ [mm]	Focal length $f$ [mm]	Back focal length $f_b$ [mm]	Edge thickness $t_e$ [mm]	Center thickness $t_c$ [mm]	Material	Radius of curvature $r$ [mm]
SLM-03B-03P	$\phi 3$	3	2.4	1.1	1.8	SK2	3.26
SLM-03B-04P	$\phi 3$	4	3.4	1.2	1.8	BK7	3.80
SLM-03B-06P	$\phi 3$	6	5.5	1.1	1.5	BK7	5.93
SLM-04B-04P	$\phi 4$	4	3.2	1.2	2.2	SK2	4.40
SLM-04B-06P	$\phi 4$	6	5.4	1.2	1.9	BK7	5.86
SLM-04B-08P	$\phi 4$	8	7.4	1.2	1.7	BK7	7.97

### Plano Concave

Part Number	Diameter $\phi D$ [mm]	Focal length $f$ [mm]	Back focal length $f_b$ [mm]	Edge thickness $t_e$ [mm]	Center thickness $t_c$ [mm]	Material	Radius of curvature $r$ [mm]
SLM-02-04N	$\phi 2$	-4	-4.40	0.95	0.8	LaSF9	-3.40
SLM-03-06N	$\phi 3$	-6	-6.39	1.03	0.8	LaSF9	-5.10
SLM-04-08N	$\phi 4$	-8	-8.37	1.10	0.8	LaSF9	-6.80

### Biconcave

Part Number	Diameter $\phi D$ [mm]	Focal length $f$ [mm]	Back focal length $f_b$ [mm]	Edge thickness $t_e$ [mm]	Center thickness $t_c$ [mm]	Material	Radius of curvature $r$ [mm]
SLM-02B-02N	$\phi 2$	-2	-2.13	0.99	0.7	LaSF9	-3.50
SLM-04B-04N	$\phi 4$	-4	-4.16	1.39	0.8	LaSF9	-6.94

### Compatible Optic Mounts

MLH-10, -15

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Manual Stages

Actuators & Adjusters

MotORIZED Stages

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Index

Guide

Mirrors

Beamsplitters

Polarizers

Lenses

Multi-Element Optics

Filters

Prisms

Substrates/Windows

Optical Data

Maintenance

Selection Guide

Plano Convex Lenses

Plano Concave Lenses

Biconvex Lenses

Biconcave Lenses

Kit

Reasonable Lens

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