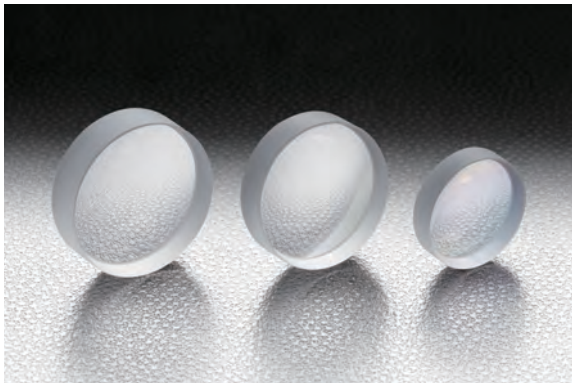
Reasonable Plano Concave Lens | S-SLB-N/S-SLB-B-N

RoHS

This lower cost product offering of Plano Convex Lenses has only minimal reduction in quality and is perfect for most applications.
It can be used in an optical systems such as observation or lighting applications when the higher surface quality Plano Concave Lens (SLB-N) is not required.



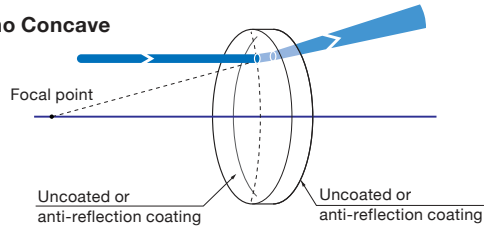
- It has the same specification of Plano Convex Lens (SLB-N) except the surface quality and is ideal for experiments and applications where high-precision is not required.
- There are two types of lens offer, a Plano convex lens with low spherical aberration and a biconvex lens that is used to shorten the focal length.
- In addition to uncoated products, there are three types of anti-reflection coating for visible, near-infrared, and infrared.

Specifications

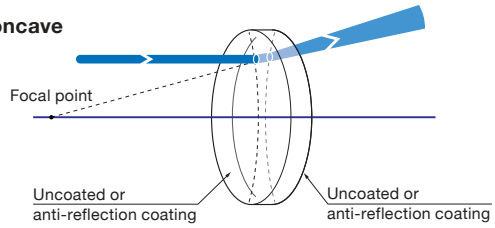
Material	BK7
Design Wavelength	546.1nm
Refractive Index	n_e=1.519
Centration	<3′
Coating	Uncoated: the end of the part number 'N' Anti-reflection coating: the end of the part number 'NM', 'NIR1', 'NIR2'
Laser Damage Threshold	Anti-reflection coating: 4J/cm^2 Laser pulse with 10ns, repetition frequency 20Hz
Clear Aperture	90% of actual aperture: Uncoated 85% of actual aperture: with coating, ϕ10≦D 83% of actual aperture: with coating, D<ϕ10
Surface Quality (Scratch–Dig)	60–40

Schematic

Plano Concave



Biconcave

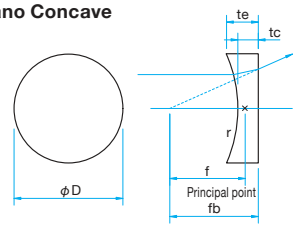


Attention

- Biconcave lens has a chromatic 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. WEB Reference Catalog Code W3050
- Transmissions losses due to reflection off the front and rear surfaces of the lens can be minimized by coating the surfaces. Consult our Sales Division for anti-reflection coatings suitable for your application.
- The outer edge of the concave side is chamfered and the result is possibility that the lens may have a smaller edge thickness for this design.

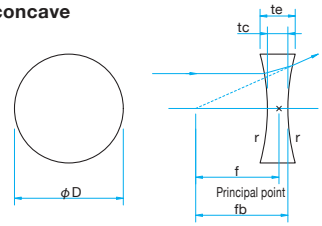
Outline Drawing (in mm)

Plano Concave



●Tolerance
Diameter $\phi D^{0}_{-0.1}$
Focal length ±1%
Thickness tc ±0.15

Biconcave



●Tolerance
Diameter $\phi D^{0}_{-0.1}$
Focal length ±1%
Thickness tc ±0.15

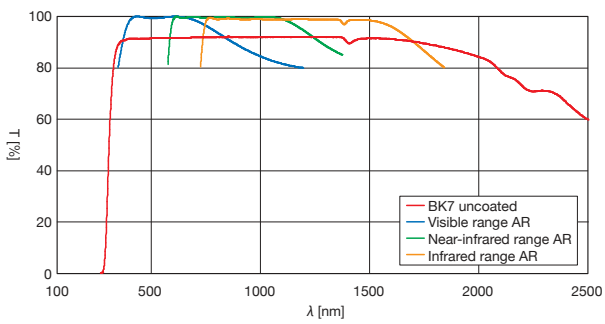
How to specify the anti-reflection coating

In case of specifying a anti-reflection coating 633nm – 1064nm to near infrared lens of S-SLB-30-200N.
⇒ S-SLB-30-200N**IR1**

Type of AR Coat	Part Number	Wavelength Range [nm]	Transmittance [%]
Visible range	S-SLB-30-200NM	400 – 700	> Average 99
Near-infrared	S-SLB-30-200NIR1	633 – 1064	> Average 98.5
Infrared	S-SLB-30-200NIR2	750 – 1550	> Average 98.5

! Part of the above is an example of if you want to coat anti-reflective coating on the lens of the S-SLB-30-200N.
! Anti-reflection coating can be available to the lens of all of S-SLB.

Typical Transmittance Data T: Transmission



Plano Concave Lens

Uncoated	How to specify the anti-reflection coating			Diameter ϕD [mm]	Focal length f [mm]	Edge thickness te [mm]	Center thickness tc [mm]	Back focal length fb [mm]	Radius of curvature r [mm]
Part Number	Visibe 400 – 700nm	Near-infrared 633 – 1064nm	Infrared 750 – 1550nm						
S-SLB-10-15N	**M**	**IR1**	**IR2**	ϕ10	–15	3.8	2.0	–16.3	7.79
S-SLB-10-20N	**M**	**IR1**	**IR2**	ϕ10	–20	3.3	2.0	–21.3	10.38
S-SLB-10-30N	**M**	**IR1**	**IR2**	ϕ10	–30	2.8	2.0	–31.3	15.57
S-SLB-10-100N	**M**	**IR1**	**IR2**	ϕ10	–100	2.2	2.0	–101.3	51.90
S-SLB-15-25N	**M**	**IR1**	**IR2**	ϕ15	–25	4.4	2.0	–26.3	12.98
S-SLB-15-30N	**M**	**IR1**	**IR2**	ϕ15	–30	3.9	2.0	–31.3	15.57
S-SLB-20-25N	**M**	**IR1**	**IR2**	ϕ20	–25	6.7	2.0	–26.3	12.98
S-SLB-20-30N	**M**	**IR1**	**IR2**	ϕ20	–30	5.6	2.0	–31.3	15.57
S-SLB-20-40N	**M**	**IR1**	**IR2**	ϕ20	–40	4.6	2.0	–41.3	20.76
S-SLB-20-50N	**M**	**IR1**	**IR2**	ϕ20	–50	4.0	2.0	–51.3	25.95
S-SLB-20-60N	**M**	**IR1**	**IR2**	ϕ20	–60	3.6	2.0	–61.3	31.14
S-SLB-25-40N	**M**	**IR1**	**IR2**	ϕ25	–40	6.2	2.0	–41.3	20.76
S-SLB-30-60N	**M**	**IR1**	**IR2**	ϕ30	–60	5.9	2.0	–61.3	31.14
S-SLB-30-200N	**M**	**IR1**	**IR2**	ϕ30	–200	3.1	2.0	–201.3	103.80

Biconcave Lens

Uncoated	How to specify the anti-reflection coating			Diameter ϕD [mm]	Focal length f [mm]	Edge thickness te [mm]	Center thickness tc [mm]	Back focal length fb [mm]	Radius of curvature r [mm]
Part Number	Visibe 400 – 700nm	Near-infrared 633 – 1064nm	Infrared 750 – 1550nm						
S-SLB-10B-10N	**M**	**IR1**	**IR2**	ϕ10	–9.7	4.6	2.0	–10.3	10.38
S-SLB-15B-15N	**M**	**IR1**	**IR2**	ϕ15	–14.7	5.9	2.0	–15.3	15.57
S-SLB-20B-50N	**M**	**IR1**	**IR2**	ϕ20	–49.7	3.9	2.0	–50.3	51.90
S-SLB-30B-100N	**M**	**IR1**	**IR2**	ϕ30	–99.7	4.2	2.0	–100.3	103.80

Compatible Optic Mounts

LHF-10S, -15S, -20S, -25S, -30S