

Reasonable Plano Convex Lens

S-SLB-P/S-SLB-B-P

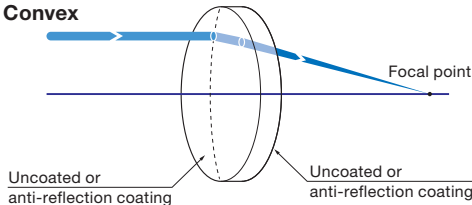
RoHS

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 Convex Lens (SLB-P) is not required.

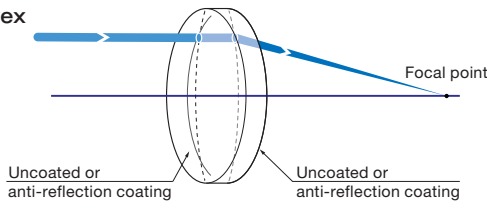


Schematic

Plano Convex



Biconvex



- It has the same specification of Plano Convex Lens (SLB-P) 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 'P' Anti-reflection coating: the end of the part number 'PM', 'PIR1', 'PIR2'
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, $\phi 10 \leq D$ 83% of actual aperture: with coating, $D < \phi 10$
Surface Quality (Scratch-Dig)	60-40

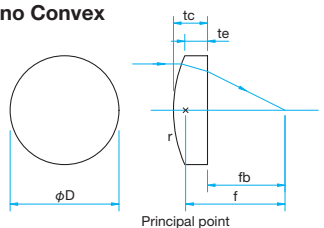
Attention

- ▶ Plano convex lens and biconvex spherical lens have 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.
- ▶ 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.

Outline Drawing

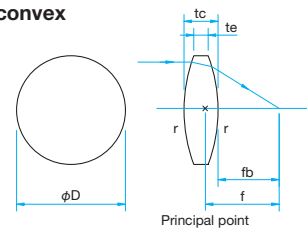
(in mm)

Plano Convex



- Tolerance Diameter
 - $\phi 60$ or less $\phi D_{-0.1}^{+0.1}$
 - $\phi 80$ $\phi D_{-0.15}^{+0.15}$
 - $\phi 100$ $\phi D_{-0.2}^{+0.2}$
- Focal length ($\phi 10 \leq \phi D$) $\pm 1\%$
- ($\phi D < \phi 10$) $\pm 2\%$
- Thickness $tc \pm 0.15$

Biconvex



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- ($\phi D < \phi 10$) $\pm 2\%$
- Thickness $tc \pm 0.15$

How to specify the anti-reflection coating

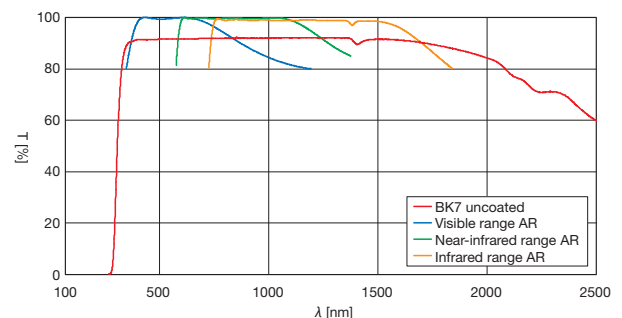
In case of specifying a anti-reflection coating 633nm – 1064nm to near infrared lens of S-SLB-100-500P.
 ⇒ S-SLB-100-500PIR1

Type of AR Coat	Part Number	Wavelength Range [nm]	Transmittance [%]
Visible range	S-SLB-100-500PM	400 – 700	> Average 99
Near-infrared	S-SLB-100-500PIR1	633 – 1064	> Average 98.5
Infrared	S-SLB-100-500PIR2	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-100-500P.
- ! Anti-reflection coating can be available to the lens of all of S-SLB.

Typical Transmittance Data

T: Transmission





Plano Convex Lens $\phi 6 - \phi 25$

Part Number	How to specify the anti-reflection coating			Diameter ϕD [mm]	Focal length f [mm]	Edge thickness t_e [mm]	Center thickness t_c [mm]	Back focal length f_b [mm]	Radius of curvature r [mm]
	Uncoated	Visible 400 – 700nm	Near-infrared 633 – 1064nm						
S-SLB-06-08P	M	IR1	IR2	$\phi 6$	8	1.0	2.3	6.5	4.15
S-SLB-06-10P	M	IR1	IR2	$\phi 6$	10	1.0	2.0	8.7	5.19
S-SLB-07-20P	M	IR1	IR2	$\phi 7$	20	1.7	2.3	18.5	10.38
S-SLB-07-40P	M	IR1	IR2	$\phi 7$	40	1.6	1.9	38.8	20.76
S-SLB-08-10P	M	IR1	IR2	$\phi 8$	10	1.5	3.4	7.8	5.19
S-SLB-08-15P	M	IR1	IR2	$\phi 8$	15	1.5	2.6	13.3	7.79
S-SLB-08-25P	M	IR1	IR2	$\phi 8$	25	1.5	2.1	23.6	12.98
S-SLB-08-40P	M	IR1	IR2	$\phi 8$	40	1.5	1.9	38.8	20.76
S-SLB-10-15P	M	IR1	IR2	$\phi 10$	15	2.0	3.8	12.5	7.79
S-SLB-10-20P	M	IR1	IR2	$\phi 10$	20	2.0	3.3	17.8	10.38
S-SLB-10-25P	M	IR1	IR2	$\phi 10$	25	2.0	3.0	23.0	12.98
S-SLB-10-30P	M	IR1	IR2	$\phi 10$	30	2.0	2.8	28.1	15.57
S-SLB-10-40P	M	IR1	IR2	$\phi 10$	40	2.0	2.6	38.3	20.76
S-SLB-10-50P	M	IR1	IR2	$\phi 10$	50	2.0	2.5	48.4	25.95
S-SLB-10-60P	M	IR1	IR2	$\phi 10$	60	2.0	2.4	58.4	31.14
S-SLB-10-70P	M	IR1	IR2	$\phi 10$	70	2.0	2.3	68.5	36.33
S-SLB-10-100P	M	IR1	IR2	$\phi 10$	100	2.0	2.2	98.5	51.90
S-SLB-15-20P	M	IR1	IR2	$\phi 15$	20	2.0	5.2	16.6	10.38
S-SLB-15-25P	M	IR1	IR2	$\phi 15$	25	2.0	4.4	22.1	12.98
S-SLB-15-30P	M	IR1	IR2	$\phi 15$	30	2.0	3.9	27.4	15.57
S-SLB-15-40P	M	IR1	IR2	$\phi 15$	40	2.0	3.4	37.8	20.76
S-SLB-15-50P	M	IR1	IR2	$\phi 15$	50	2.0	3.1	48.0	25.95
S-SLB-15-60P	M	IR1	IR2	$\phi 15$	60	2.0	2.9	58.1	31.14
S-SLB-15-70P	M	IR1	IR2	$\phi 15$	70	2.0	2.8	68.2	36.33
S-SLB-15-80P	M	IR1	IR2	$\phi 15$	80	2.0	2.7	78.2	41.52
S-SLB-15-90P	M	IR1	IR2	$\phi 15$	90	2.0	2.6	88.3	46.71
S-SLB-15-100P	M	IR1	IR2	$\phi 15$	100	2.0	2.5	98.3	51.90
S-SLB-15-120P	M	IR1	IR2	$\phi 15$	120	2.0	2.5	118.4	62.28
S-SLB-15-150P	M	IR1	IR2	$\phi 15$	150	2.0	2.4	148.4	77.85
S-SLB-20-25P	M	IR1	IR2	$\phi 20$	25	2.0	6.7	20.6	12.98
S-SLB-20-30P	M	IR1	IR2	$\phi 20$	30	2.0	5.6	26.3	15.57
S-SLB-20-40P	M	IR1	IR2	$\phi 20$	40	2.0	4.6	37.0	20.76
S-SLB-20-50P	M	IR1	IR2	$\phi 20$	50	2.0	4.0	47.4	25.95
S-SLB-20-60P	M	IR1	IR2	$\phi 20$	60	2.0	3.6	57.6	31.14
S-SLB-20-70P	M	IR1	IR2	$\phi 20$	70	2.0	3.4	67.8	36.33
S-SLB-20-80P	M	IR1	IR2	$\phi 20$	80	2.0	3.2	77.9	41.52
S-SLB-20-90P	M	IR1	IR2	$\phi 20$	90	2.0	3.1	88.0	46.71
S-SLB-20-100P	M	IR1	IR2	$\phi 20$	100	2.0	3.0	98.0	51.90
S-SLB-20-120P	M	IR1	IR2	$\phi 20$	120	2.0	2.8	118.2	62.28
S-SLB-20-150P	M	IR1	IR2	$\phi 20$	150	2.0	2.6	148.3	77.85
S-SLB-20-170P	M	IR1	IR2	$\phi 20$	170	2.0	2.6	168.2	88.23
S-SLB-20-200P	M	IR1	IR2	$\phi 20$	200	2.0	2.5	198.4	103.80
S-SLB-25-30P	M	IR1	IR2	$\phi 25$	30	2.0	8.3	24.5	15.57
S-SLB-25-35P	M	IR1	IR2	$\phi 25$	35	2.0	7.0	30.4	18.17
S-SLB-25-40P	M	IR1	IR2	$\phi 25$	40	2.0	6.2	36.0	20.76
S-SLB-25-50P	M	IR1	IR2	$\phi 25$	50	2.0	5.2	46.6	25.95
S-SLB-25-70P	M	IR1	IR2	$\phi 25$	70	2.0	4.2	67.2	36.33
S-SLB-25-80P	M	IR1	IR2	$\phi 25$	80	2.0	3.9	77.4	41.52
S-SLB-25-90P	M	IR1	IR2	$\phi 25$	90	2.0	3.7	87.6	46.71
S-SLB-25-100P	M	IR1	IR2	$\phi 25$	100	2.0	3.5	97.7	51.90
S-SLB-25-120P	M	IR1	IR2	$\phi 25$	120	2.0	3.3	117.8	62.28
S-SLB-25-150P	M	IR1	IR2	$\phi 25$	150	2.0	3.0	148.0	77.85
S-SLB-25-200P	M	IR1	IR2	$\phi 25$	200	2.0	2.8	198.2	103.80

Compatible Optic Mounts

LHF-10S, -15S, -20S, -25S / MLH-10, -15

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Reasonable Lens

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Reasonable Plano Convex Lens | S-SLB-P/S-SLB-B-P

Plano Convex Lens $\phi 30 - \phi 100$										
Application Systems	Uncoated	How to specify the anti-reflection coating			Diameter ϕD [mm]	Focal length f [mm]	Edge thickness t_e [mm]	Center thickness t_c [mm]	Back focal length f_b [mm]	Radius of curvature r [mm]
	Part Number	Visible 400 – 700nm	Near-infrared 633 – 1064nm	Infrared 750 – 1550nm						
Optics & Optical Coatings	S-SLB-30-35P	M	IR1	IR2	$\phi 30$	35	2.0	9.9	28.5	18.17
	S-SLB-30-40P	M	IR1	IR2	$\phi 30$	40	2.0	8.4	34.5	20.76
Opto-Mechanics	S-SLB-30-50P	M	IR1	IR2	$\phi 30$	50	2.0	6.8	45.5	25.95
	S-SLB-30-60P	M	IR1	IR2	$\phi 30$	60	2.0	5.9	56.1	31.14
Bases	S-SLB-30-70P	M	IR1	IR2	$\phi 30$	70	2.0	5.2	66.5	36.33
	S-SLB-30-80P	M	IR1	IR2	$\phi 30$	80	2.0	4.8	76.8	41.52
Manual Stages	S-SLB-30-90P	M	IR1	IR2	$\phi 30$	90	2.0	4.5	87.1	46.71
	S-SLB-30-100P	M	IR1	IR2	$\phi 30$	100	2.0	4.2	97.2	51.90
Actuators & Adjusters	S-SLB-30-120P	M	IR1	IR2	$\phi 30$	120	2.0	3.8	117.5	62.28
	S-SLB-30-150P	M	IR1	IR2	$\phi 30$	150	2.0	3.5	147.7	77.85
Motorized Stages	S-SLB-30-170P	M	IR1	IR2	$\phi 30$	170	2.0	3.3	167.8	88.23
	S-SLB-30-200P	M	IR1	IR2	$\phi 30$	200	2.0	3.1	198.0	103.80
Light Sources & Laser Safety	S-SLB-30-250P	M	IR1	IR2	$\phi 30$	250	2.0	2.9	248.1	129.75
	S-SLB-30-300P	M	IR1	IR2	$\phi 30$	300	2.0	2.7	298.2	155.70
Index	S-SLB-30-350P	M	IR1	IR2	$\phi 30$	350	2.0	2.6	348.3	181.65
	S-SLB-40-50P	M	IR1	IR2	$\phi 40$	50	2.0	11.4	42.5	25.95
Guide	S-SLB-40-60P	M	IR1	IR2	$\phi 40$	60	2.0	9.3	53.9	31.14
	S-SLB-40-70P	M	IR1	IR2	$\phi 40$	70	2.0	8.0	64.7	36.33
Mirrors	S-SLB-40-80P	M	IR1	IR2	$\phi 40$	80	2.0	7.1	75.3	41.52
	S-SLB-40-90P	M	IR1	IR2	$\phi 40$	90	2.0	6.5	85.7	46.71
Beamsplitters	S-SLB-40-100P	M	IR1	IR2	$\phi 40$	100	2.0	6.0	96.0	51.90
	S-SLB-40-120P	M	IR1	IR2	$\phi 40$	120	2.0	5.3	116.5	62.28
Polarizers	S-SLB-40-150P	M	IR1	IR2	$\phi 40$	150	2.0	4.6	147	77.85
	S-SLB-40-170P	M	IR1	IR2	$\phi 40$	170	2.0	4.3	167.2	88.23
Lenses	S-SLB-40-200P	M	IR1	IR2	$\phi 40$	200	2.0	3.9	197.4	103.80
	S-SLB-40-250P	M	IR1	IR2	$\phi 40$	250	2.0	3.6	247.7	129.75
Multi-Element Optics	S-SLB-40-1000P	M	IR1	IR2	$\phi 40$	1000	2.0	2.4	998.4	519.00
	S-SLB-50-70P	M	IR1	IR2	$\phi 50$	70	3.0	13.0	61.5	36.33
Filters	S-SLB-50-90P	M	IR1	IR2	$\phi 50$	90	3.0	10.3	83.2	46.71
	S-SLB-50-100P	M	IR1	IR2	$\phi 50$	100	3.0	9.4	93.8	51.90
Prisms	S-SLB-50-120P	M	IR1	IR2	$\phi 50$	120	3.0	8.2	114.6	62.28
	S-SLB-50-150P	M	IR1	IR2	$\phi 50$	150	3.0	7.1	145.3	77.85
Substrates/Windows	S-SLB-50-170P	M	IR1	IR2	$\phi 50$	170	3.0	6.6	165.6	88.23
	S-SLB-50-200P	M	IR1	IR2	$\phi 50$	200	3.0	6.1	196.0	103.80
Optical Data	S-SLB-60-70P	M	IR1	IR2	$\phi 60$	70	3.0	18.8	57.6	36.33
	S-SLB-60-100P	M	IR1	IR2	$\phi 60$	100	3.0	12.5	91.7	51.90
Maintenance	S-SLB-60-120P	M	IR1	IR2	$\phi 60$	120	3.0	10.7	113.0	62.28
	S-SLB-60-150P	M	IR1	IR2	$\phi 60$	150	3.0	9.0	144.1	77.85
Selection Guide	S-SLB-80-150P	M	IR1	IR2	$\phi 80$	150	3.0	14.1	140.8	77.85
	S-SLB-80-250P	M	IR1	IR2	$\phi 80$	250	3.0	9.3	243.9	129.75
Plano Convex Lenses	S-SLB-100-150P	M	IR1	IR2	$\phi 100$	150	3.0	21.2	136.1	77.85
	S-SLB-100-200P	M	IR1	IR2	$\phi 100$	200	3.0	15.8	189.6	103.80
Plano Concave Lenses	S-SLB-100-250P	M	IR1	IR2	$\phi 100$	250	3.0	13.0	241.4	129.75
	S-SLB-100-300P	M	IR1	IR2	$\phi 100$	300	3.0	11.2	292.6	155.70
Biconvex Lenses	S-SLB-100-500P	M	IR1	IR2	$\phi 100$	500	3.0	7.9	494.8	259.50
	S-SLB-100-1000P	M	IR1	IR2	$\phi 100$	1000	3.0	5.4	996.4	519.00
Biconcave Lenses										
Kit										

Compatible Optic Mounts

LHF-30S, -40S, -50S, -60AS, -80, -100



Biconvex Lens

Uncoated Part Number	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]
	Visible 400 – 700nm	Near-infrared 633 – 1064nm	Infrared 750 – 1550nm						
S-SLB-05B-08P	M	IR1	IR2	φ5	8.4	1.4	2.1	7.6	8.30
S-SLB-05B-20P	M	IR1	IR2	φ5	20.2	1.1	1.4	19.8	20.76
S-SLB-06B-06P	M	IR1	IR2	φ6	6.4	1.0	2.5	5.6	6.23
S-SLB-08B-08P	M	IR1	IR2	φ8	8.6	1.5	3.6	7.4	8.30
S-SLB-10B-10P	M	IR1	IR2	φ10	10.8	2.0	4.6	9.2	10.38
S-SLB-10B-15P	M	IR1	IR2	φ10	15.6	2.0	3.6	14.4	15.57
S-SLB-10B-20P	M	IR1	IR2	φ10	20.5	2.0	3.2	19.5	20.76
S-SLB-10B-40P	M	IR1	IR2	φ10	40.4	2.0	2.6	39.6	41.52
S-SLB-15B-15P	M	IR1	IR2	φ15	16	2.0	5.9	14.0	15.57
S-SLB-15B-20P	M	IR1	IR2	φ15	20.8	2.0	4.8	19.2	20.76
S-SLB-15B-30P	M	IR1	IR2	φ15	30.6	2.0	3.8	29.4	31.14
S-SLB-15B-40P	M	IR1	IR2	φ15	40.6	2.0	3.4	39.4	41.52
S-SLB-20B-30P	M	IR1	IR2	φ20	31	2.0	5.3	29.1	31.14
S-SLB-20B-40P	M	IR1	IR2	φ20	40.7	2.0	4.4	39.3	41.52
S-SLB-20B-50P	M	IR1	IR2	φ20	50.7	2.0	3.9	49.3	51.90
S-SLB-25B-35P	M	IR1	IR2	φ25	36.1	2.0	6.4	33.9	36.33
S-SLB-25B-50P	M	IR1	IR2	φ25	50.8	2.0	5.1	49.2	51.90
S-SLB-25B-60P	M	IR1	IR2	φ25	60.8	2.0	4.5	59.2	62.28
S-SLB-25B-70P	M	IR1	IR2	φ25	70.7	2.0	4.2	69.3	72.66
S-SLB-30B-30P	M	IR1	IR2	φ30	31.7	2.0	9.7	28.3	31.14
S-SLB-30B-40P	M	IR1	IR2	φ30	41.3	2.0	7.6	38.7	41.52
S-SLB-40B-40P	M	IR1	IR2	φ40	42.1	2.0	12.3	37.9	41.52
S-SLB-40B-50P	M	IR1	IR2	φ40	51.7	2.0	10.0	48.3	51.90
S-SLB-40B-60P	M	IR1	IR2	φ40	61.4	2.0	8.6	58.6	62.28
S-SLB-40B-100P	M	IR1	IR2	φ40	101	2.0	5.9	99.0	103.80
S-SLB-40B-150P	M	IR1	IR2	φ40	150.8	2.0	4.6	149.2	155.70
S-SLB-50B-150P	M	IR1	IR2	φ50	151.2	3.0	7.0	148.8	155.70
S-SLB-50B-200P	M	IR1	IR2	φ50	201	3.0	6.0	199.0	207.60

Compatible Optic Mounts

LHF-10S, -15S, -20S, -25S, -30S, -40S, -50S / MLH-10, -15

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Reasonable Lens

Cylindrical

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