

BK-7 Biconvex Lenses

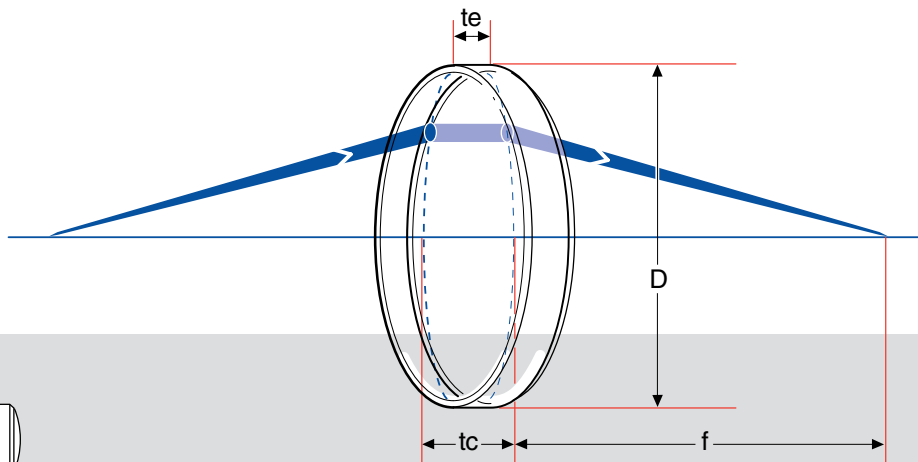
- Symmetrically convex positive lenses
- Focal lengths from 6.4 to 300mm
- Diameters from 5 to 100mm
- Anti-Reflection coatings available
- For additional sizes see Micro Optics

Symmetrical biconvex lenses are most useful when dealing with finite conjugate points. This makes them ideal for 1:1 imaging applications or for use in multi-element systems.



Specifications & Tolerances

Focal length: $\pm 1\%$ (Diameter $\geq 10\text{mm}$)	Diameter: $\leq 60\text{mm} +0, -0.10\text{mm}$
$\pm 2\%$ (Diameter $< 10\text{mm}$)	$= 80\text{mm} +0, -0.15\text{mm}$
Thickness: $\pm 0.15\text{mm}$	$= 100\text{mm} +0, -0.20\text{mm}$
Surface Quality: 20-10 (Diameter $\geq 10\text{mm}$)	Centration: 3arcmin (Diameter $< 10\text{mm}$)
40-20 (Diameter $< 10\text{mm}$)	1arcmin (Diameter $\geq 10\text{mm}$)
Material: BK7 grade A	Clear Aperture: $> 90\%$
Design Wavelength: 546.1nm	Coating: Optional broadband Anti-Reflection 425-675nm (for other wavelengths see pages 18-19)



For fused silica biconvex lenses see pages 79-81.

BICONVEX LENS

BK-7 Biconvex Lenses

UNCOATED

AR COATED
425-675nm

D (mm)	f (mm)	te (mm)	tc (mm)	fb (mm)	r (mm)	Centration (arcmin)	Price	PART NUMBER	Price	PART NUMBER
5.0	6.4	2.5	1.5	5.6	6.23	≤ 3		013-0120		013-0120-A55
5.0	8.4	2.1	1.4	7.6	8.30	≤ 3		013-0130		013-0130-A55
5.0	10.3	1.9	1.3	9.7	10.38	≤ 3		013-0140		013-0140-A55
5.0	12.3	1.7	1.2	11.7	12.46	≤ 3		013-0160		013-0160-A55
5.0	15.3	1.6	1.2	14.7	15.57	≤ 3		013-0170		013-0170-A55
5.0	20.2	1.4	1.1	19.8	20.76	≤ 3		013-0180		013-0180-A55
5.0	25.2	1.3	1.1	24.8	25.95	≤ 3		013-0190		013-0190-A55
5.0	30.2	1.3	1.1	29.8	31.14	≤ 3		013-0220		013-0220-A55
6.0	6.4	2.5	1.0	5.6	6.23	≤ 3		013-0230		013-0230-A55
6.0	8.4	2.1	1.0	7.6	8.30	≤ 3		013-0240		013-0240-A55
6.0	10.3	1.9	1.0	9.7	10.38	≤ 3		013-0260		013-0260-A55
6.0	12.3	1.7	1.0	11.7	12.46	≤ 3		013-0270		013-0270-A55
6.0	15.3	1.6	1.0	14.7	15.57	≤ 3		013-0280		013-0280-A55
6.0	20.2	1.4	1.0	19.8	20.76	≤ 3		013-0290		013-0290-A55

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425-675 nm

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Filter & Apertures

	D (mm)	f (mm)	te (mm)	tc (mm)	fb (mm)	r (mm)	Centration (arcmin)	Price	PART NUMBER	Price	PART NUMBER
	6.0	25.2	1.3	1.0	24.8	25.95	≤ 3		013-0330		013-0330-A55
	6.0	30.2	1.3	1.0	29.8	31.14	≤ 3		013-0340		013-0340-A55
	7.0	8.6	3.6	2.0	7.4	8.30	≤ 3		013-0410		013-0410-A55
	7.0	10.5	3.1	1.9	9.5	10.38	≤ 3		013-0420		013-0420-A55
	7.0	12.5	2.8	1.8	11.5	12.46	≤ 3		013-0430		013-0430-A55
	7.0	15.4	2.5	1.7	14.6	15.57	≤ 3		013-0440		013-0440-A55
	7.0	20.4	2.3	1.7	19.6	20.76	≤ 3		013-0450		013-0450-A55
	7.0	25.4	2.1	1.6	24.6	25.95	≤ 3		013-0457		013-0457-A55
	7.0	30.3	2.0	1.6	29.7	31.14	≤ 3		013-0459		013-0459-A55
	7.0	40.3	1.9	1.6	39.7	41.52	≤ 3		013-0461		013-0461-A55
	7.0	50.3	1.8	1.6	49.7	51.90	≤ 3		013-0463		013-0463-A55
	8.0	8.6	3.6	1.5	7.4	8.30	≤ 3		013-0550		013-0550-A55
	8.0	10.5	3.1	1.5	9.5	10.38	≤ 3		013-0560		013-0560-A55
	8.0	12.5	2.8	1.5	11.5	12.46	≤ 3		013-0570		013-0570-A55
	8.0	15.4	2.5	1.5	14.6	15.57	≤ 3		013-0580		013-0580-A55
	8.0	20.4	2.3	1.5	19.6	20.76	≤ 3		013-0590		013-0590-A55
	8.0	25.4	2.1	1.5	24.6	25.95	≤ 3		013-0660		013-0660-A55
	8.0	30.3	2.0	1.5	29.7	31.14	≤ 3		013-0670		013-0670-A55
	8.0	40.3	1.9	1.5	39.7	41.52	≤ 3		013-0680		013-0680-A55
	8.0	50.3	1.8	1.5	49.7	51.90	≤ 3		013-0690		013-0690-A55
	10.0	10.8	4.6	2.0	9.2	10.38	≤ 1		013-0770		013-0770-A55
	10.0	15.6	3.6	2.0	14.4	15.57	≤ 1		013-0780		013-0780-A55
	10.0	20.5	3.2	2.0	19.5	20.76	≤ 1		013-0790		013-0790-A55
	10.0	25.5	3.0	2.0	24.5	25.95	≤ 1		013-0880		013-0880-A55
	10.0	30.5	2.8	2.0	29.5	31.14	≤ 1		013-0890		013-0890-A55
	10.0	40.4	2.6	2.0	39.6	41.52	≤ 1		013-0990		013-0990-A55
	10.0	50.4	2.5	2.0	49.6	51.90	≤ 1		013-1110		013-1110-A55
	10.0	60.4	2.4	2.0	59.6	62.28	≤ 1		013-1120		013-1120-A55
	10.0	70.4	2.3	2.0	69.6	72.66	≤ 1		013-1130		013-1130-A55
	10.0	80.4	2.3	2.0	79.6	83.04	≤ 1		013-1140		013-1140-A55
	10.0	90.4	2.3	2.0	89.6	93.42	≤ 1		013-1145		013-1145-A55
	10.0	100.4	2.2	2.0	99.6	103.80	≤ 1		013-1150		013-1150-A55
	12.7	13.0	5.5	2.0	11.0	12.46	≤ 1		013-1160		013-1160-A55
	12.7	20.7	4.0	2.0	19.3	20.76	≤ 1		013-1170		013-1170-A55
	12.7	25.6	3.6	2.0	24.4	25.95	≤ 1		013-1180		013-1180-A55
	12.7	30.6	3.3	2.0	29.5	31.14	≤ 1		013-1185		013-1185-A55
	12.7	40.5	3.0	2.0	39.5	41.52	≤ 1		013-1190		013-1190-A55
	12.7	50.5	2.8	2.0	49.6	51.90	≤ 1		013-1220		013-1220-A55
	12.7	60.4	2.6	2.0	59.5	62.28	≤ 1		013-1230		013-1230-A55
	12.7	70.4	2.6	2.0	69.5	72.66	≤ 1		013-1240		013-1240-A55
	15.0	16.0	5.9	2.0	14.0	15.57	≤ 1		013-1250		013-1250-A55
	15.0	20.8	4.8	2.0	19.2	20.76	≤ 1		013-1260		013-1260-A55
	15.0	25.7	4.2	2.0	24.3	25.95	≤ 1		013-1270		013-1270-A55
	15.0	30.6	3.8	2.0	29.4	31.14	≤ 1		013-1280		013-1280-A55
	15.0	40.6	3.4	2.0	39.4	41.52	≤ 1		013-1290		013-1290-A55
	15.0	50.5	3.1	2.0	49.5	51.90	≤ 1		013-1330		013-1330-A55
	15.0	60.5	2.9	2.0	59.5	62.28	≤ 1		013-1340		013-1340-A55
	15.0	70.5	2.8	2.0	69.5	72.66	≤ 1		013-1345		013-1345-A55
	15.0	80.4	2.7	2.0	79.6	83.04	≤ 1		013-1350		013-1350-A55
	15.0	90.4	2.6	2.0	89.6	93.42	≤ 1		013-1355		013-1355-A55
	15.0	100.4	2.5	2.0	99.6	103.80	≤ 1		013-1360		013-1360-A55
	20.0	21.2	7.1	2.0	18.8	20.76	≤ 1		013-1370		013-1370-A55

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425-675nm

D (mm)	f (mm)	te (mm)	tc (mm)	fb (mm)	r (mm)	Centration (arcmin)	Price	PART NUMBER	Price	PART NUMBER
20.0	26.0	6.0	2.0	24.0	25.95	≤ 1		013-1380		013-1380-A55
20.0	31.0	5.3	2.0	29.1	31.14	≤ 1		013-1390		013-1390-A55
20.0	40.7	4.4	2.0	39.3	41.52	≤ 1		013-1440		013-1440-A55
20.0	50.7	3.9	2.0	49.3	51.90	≤ 1		013-1450		013-1450-A55
20.0	60.6	3.6	2.0	59.4	62.28	≤ 1		013-1460		013-1460-A55
20.0	70.6	3.4	2.0	69.4	72.66	≤ 1		013-1465		013-1465-A55
20.0	80.5	3.2	2.0	79.5	83.04	≤ 1		013-1470		013-1470-A55
20.0	90.5	3.1	2.0	89.5	93.42	≤ 1		013-1475		013-1475-A55
20.0	100.5	3.0	2.0	99.5	103.80	≤ 1		013-1480		013-1480-A55
20.0	120.5	2.8	2.0	119.5	124.56	≤ 1		013-1490		013-1490-A55
20.0	150.4	2.6	2.0	149.6	155.70	≤ 1		013-1550		013-1550-A55
25.0	26.5	8.4	2.0	23.5	25.95	≤ 1		013-1660		013-1660-A55
25.0	31.2	7.2	2.0	28.8	31.14	≤ 1		013-1670		013-1670-A55
25.0	36.1	6.4	2.0	33.9	36.33	≤ 1		013-1680		013-1680-A55
25.0	41.0	5.9	2.0	39.0	41.52	≤ 1		013-1690		013-1690-A55
25.0	50.8	5.1	2.0	49.2	51.90	≤ 1		013-1770		013-1770-A55
25.0	60.8	4.5	2.0	59.2	62.28	≤ 1		013-1780		013-1780-A55
25.0	70.7	4.2	2.0	69.3	72.66	≤ 1		013-1785		013-1785-A55
25.0	80.6	3.9	2.0	79.4	83.04	≤ 1		013-1790		013-1790-A55
25.0	90.6	3.7	2.0	89.4	93.42	≤ 1		013-1810		013-1810-A55
25.0	100.6	3.5	2.0	99.4	103.80	≤ 1		013-1880		013-1880-A55
25.0	120.5	3.3	2.0	119.5	124.56	≤ 1		013-1890		013-1890-A55
25.0	150.5	3.0	2.0	149.5	155.70	≤ 1		013-1990		013-1990-A55
25.0	170.5	2.9	2.0	169.5	176.46	≤ 1		013-1850		013-1850-A55
25.0	200.5	2.8	2.0	199.5	207.60	≤ 1		013-2220		013-2220-A55
25.4	26.5	8.4	1.8	23.6	25.95	≤ 1		013-2240		013-2240-A55
25.4	31.2	7.2	1.8	28.7	31.14	≤ 1		013-2243		013-2243-A55
25.4	36.1	6.4	1.8	33.9	36.33	≤ 1		013-2245		013-2245-A55
25.4	41.0	5.9	1.9	39.0	41.52	≤ 1		013-2250		013-2250-A55
25.4	50.8	5.1	1.9	49.2	51.90	≤ 1		013-2260		013-2260-A55
25.4	60.8	4.5	1.9	59.2	62.28	≤ 1		013-2270		013-2270-A55
25.4	70.7	4.1	1.9	69.3	72.66	≤ 1		013-2275		013-2275-A55
25.4	80.6	3.9	1.9	79.3	83.04	≤ 1		013-2280		013-2280-A55
25.4	90.6	3.7	1.9	89.4	93.42	≤ 1		013-2285		013-2285-A55
25.4	100.6	3.5	1.9	99.4	103.80	≤ 1		013-2290		013-2290-A55
25.4	120.5	3.3	2.0	119.4	124.56	≤ 1		013-2295		013-2295-A55
25.4	150.5	3.0	2.0	149.5	155.70	≤ 1		013-2300		013-2300-A55
25.4	200.5	2.8	2.0	199.6	207.60	≤ 1		013-2310		013-2310-A55
30.0	31.7	9.7	2.0	28.3	31.14	≤ 1		013-2330		013-2330-A55
30.0	36.5	8.5	2.0	33.5	36.33	≤ 1		013-2340		013-2340-A55
30.0	41.3	7.6	2.0	38.7	41.52	≤ 1		013-2350		013-2350-A55
30.0	51.1	6.4	2.0	48.9	51.90	≤ 1		013-2360		013-2360-A55
30.0	60.9	5.7	2.0	59.1	62.28	≤ 1		013-2370		013-2370-A55
30.0	70.9	5.1	2.0	69.1	72.66	≤ 1		013-2380		013-2380-A55
30.0	80.8	4.7	2.0	79.2	83.04	≤ 1		013-2390		013-2390-A55
30.0	90.7	4.4	2.0	89.3	93.42	≤ 1		013-2410		013-2410-A55
30.0	100.7	4.2	2.0	99.3	103.80	≤ 1		013-2440		013-2440-A55
30.0	120.6	3.8	2.0	119.4	124.56	≤ 1		013-2450		013-2450-A55
30.0	150.6	3.4	2.0	149.4	155.70	≤ 1		013-2460		013-2460-A55
30.0	170.5	3.3	2.0	169.5	176.46	≤ 1		013-2465		013-2465-A55
30.0	200.5	3.1	2.0	199.5	207.60	≤ 1		013-2470		013-2470-A55
30.0	220.5	3.0	2.0	219.5	228.36	≤ 1		013-2475		013-2475-A55
30.0	250.5	2.9	2.0	249.5	259.50	≤ 1		013-2480		013-2480-A55
38.1	42.0	11.3	2.0	38.1	41.52	≤ 1		013-2780		013-2780-A55

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Cylindrical Lenses

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	38.1	51.6	9.2	2.0	48.5	51.90	≤ 1		013-2790		013-2790-A55
	38.1	61.3	8.0	2.0	58.6	62.28	≤ 1		013-2880		013-2880-A55
	38.1	81.1	6.4	2.0	79.0	83.04	≤ 1		013-2890		013-2890-A55
	40.0	42.1	12.3	2.0	37.9	41.52	≤ 1		013-3350		013-3350-A55
	40.0	51.7	10.0	2.0	48.3	51.90	≤ 1		013-3360		013-3360-A55
	40.0	61.4	8.6	2.0	58.6	62.28	≤ 1		013-3370		013-3370-A55
	40.0	71.3	7.6	2.0	68.7	72.66	≤ 1		013-3380		013-3380-A55
	40.0	81.2	6.9	2.0	78.8	83.04	≤ 1		013-3390		013-3390-A55
	40.0	91.1	6.3	2.0	88.9	93.42	≤ 1		013-3410		013-3410-A55
	40.0	101.0	5.9	2.0	99.0	103.80	≤ 1		013-3440		013-3440-A55
	40.0	120.9	5.2	2.0	119.1	124.56	≤ 1		013-3450		013-3450-A55
	40.0	150.8	4.6	2.0	149.2	155.70	≤ 1		013-3460		013-3460-A55
	40.0	170.7	4.3	2.0	169.3	176.46	≤ 1		013-3465		013-3465-A55
	40.0	200.6	3.9	2.0	199.4	207.60	≤ 1		013-3470		013-3470-A55
	40.0	220.6	3.8	2.0	219.4	228.36	≤ 1		013-3475		013-3475-A55
	40.0	250.6	3.5	2.0	249.4	259.50	≤ 1		013-3480		013-3480-A55
	50.0	52.7	15.8	3.0	47.3	51.90	≤ 1		013-3570		013-3570-A55
	50.0	62.3	13.5	3.0	57.7	62.28	≤ 1		013-3580		013-3580-A55
	50.0	72.0	11.9	3.0	68.0	72.66	≤ 1		013-3590		013-3590-A55
	50.0	81.8	10.7	3.0	78.2	83.04	≤ 1		013-3660		013-3660-A55
	50.0	91.6	9.8	3.0	88.4	93.42	≤ 1		013-3665		013-3665-A55
	50.0	101.5	9.1	3.0	98.5	103.80	≤ 1		013-3670		013-3670-A55
	50.0	121.3	8.0	3.0	118.7	124.56	≤ 1		013-3680		013-3680-A55
	50.0	151.2	7.0	3.0	148.8	155.70	≤ 1		013-3690		013-3690-A55
	50.0	171.1	6.6	3.0	168.9	176.46	≤ 1		013-3710		013-3710-A55
	50.0	201.0	6.0	3.0	199.0	207.60	≤ 1		013-3770		013-3770-A55
	50.0	220.9	5.7	3.0	219.1	228.36	≤ 1		013-3775		013-3775-A55
	50.0	251.0	5.4	3.0	249.1	259.50	≤ 1		013-3780		013-3780-A55
	50.0	300.8	5.0	3.0	299.2	311.40	≤ 1		013-3790		013-3790-A55
	50.8	52.7	16.3	3.0	47.1	51.90	≤ 1		013-4550		013-4550-A55
	50.8	62.3	13.8	3.0	57.7	62.28	≤ 1		013-4555		013-4555-A55
	50.8	72.0	12.2	3.0	68.0	72.66	≤ 1		013-4560		013-4560-A55
	50.8	81.8	11.0	3.0	78.2	83.04	≤ 1		013-4570		013-4570-A55
	50.8	91.6	9.8	2.8	88.3	93.42	≤ 1		013-4580		013-4580-A55
	50.8	101.5	9.3	3.0	98.5	103.80	≤ 1		013-4590		013-4590-A55
	50.8	121.3	8.0	2.8	118.6	124.56	≤ 1		013-4595		013-4595-A55
	50.8	151.2	7.0	2.8	148.9	155.70	≤ 1		013-4610		013-4610-A55
	50.8	171.1	6.1	2.9	169.0	176.46	≤ 1		013-4615		013-4615-A55
	50.8	201.0	6.0	2.9	199.0	207.60	≤ 1		013-4620		013-4620-A55
	50.8	251.0	5.4	2.9	249.1	259.50	≤ 1		013-4630		013-4630-A55
	50.8	300.8	5.0	2.9	299.1	311.40	≤ 1		013-4640		013-4640-A55
	60.0	63.2	18.4	3.0	56.8	62.28	≤ 1		013-4690		013-4690-A55
	60.0	72.7	16.0	3.0	67.3	72.66	≤ 1		013-4710		013-4710-A55
	60.0	82.4	14.2	3.0	77.6	83.04	≤ 1		013-4770		013-4770-A55
	60.0	92.2	13.0	3.0	87.8	93.42	≤ 1		013-4775		013-4775-A55
	60.0	102.0	11.9	3.0	98.0	103.80	≤ 1		013-4780		013-4780-A55
	60.0	121.7	10.3	3.0	118.3	124.56	≤ 1		013-4790		013-4790-A55
	60.0	151.5	8.8	3.0	148.5	155.70	≤ 1		013-4880		013-4880-A55
	60.0	171.4	8.1	3.0	168.7	176.46	≤ 1		013-4885		013-4885-A55
	60.0	201.2	7.4	3.0	198.8	207.60	≤ 1		013-4890		013-4890-A55
	60.0	221.2	7.0	3.0	218.8	228.36	≤ 1		013-4895		013-4895-A55
	60.0	251.1	6.5	3.0	248.9	259.50	≤ 1		013-4990		013-4990-A55
	60.0	301.0	5.9	3.0	299.0	311.40	≤ 1		013-5550		013-5550-A55

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D (mm)	f (mm)	te (mm)	tc (mm)	fb (mm)	r (mm)	Centration (arcmin)	Price	PART NUMBER	Price	PART NUMBER
80.0	103.2	19.0	3.0	96.8	103.80	≤ 1		013-5770		013-5770-A55
80.0	152.2	13.5	3.0	147.8	155.70	≤ 1		013-5780		013-5780-A55
80.0	201.8	10.8	3.0	198.2	207.60	≤ 1		013-5790		013-5790-A55
80.0	251.5	9.2	3.0	248.5	259.50	≤ 1		013-5810		013-5810-A55
80.0	301.3	8.2	3.0	298.7	311.40	≤ 1		013-5880		013-5880-A55
80.0	401.1	6.9	3.0	398.9	415.20	≤ 1		013-5885		013-5885-A55
80.0	501.0	6.1	3.0	499.0	519.00	≤ 1		013-5890		013-5890-A55
80.0	700.9	5.2	3.0	699.1	726.60	≤ 1		013-5895		013-5895-A55
80.0	1000.7	4.5	3.0	999.3	1038.00	≤ 1		013-6660		013-6660-A55
100.0	153.3	19.5	3.0	146.7	155.70	≤ 1		013-6670		013-6670-A55
100.0	202.5	15.2	3.0	197.5	207.60	≤ 1		013-6680		013-6680-A55
100.0	252.1	12.7	3.0	247.9	259.50	≤ 1		013-6690		013-6690-A55
100.0	301.8	11.1	3.0	298.2	311.40	≤ 1		013-6770		013-6770-A55
100.0	401.5	9.0	3.0	398.5	415.20	≤ 1		013-6775		013-6775-A55
100.0	501.3	7.8	3.0	498.7	519.00	≤ 1		013-6780		013-6780-A55
100.0	701.1	6.4	3.0	698.9	726.60	≤ 1		013-6785		013-6785-A55
100.0	1001.0	5.4	3.0	999.1	1038.00	≤ 1		013-6790		013-6790-A55

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For other Anti-Reflection coatings append appropriate suffix (see pages 18 and 19). For smaller lenses see the Microlenses section. For other custom designs, please call.



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