

## Fused Silica Biconcave Lenses

- Symmetrically concave negative lenses
- Ultra-Violet grade fused silica
- Focal lengths from -9.7 to -299.5mm
- Diameters from 10 to 50.8mm
- Complete range of optional Anti-Reflection coatings available



These biconcave lenses are used when a very high negative power is required. They can be used in a multi-element system or alone to produce a diverging cone or a virtual image.

Sharp edges, which are common in negative lenses, are removed by beveling to reduce the likelihood of chipping.

These lenses are provided uncoated, however a wide range of standard Anti-Reflection coatings are available for these lenses. These coatings are described on pages 18 and 19.

### Specifications & Tolerances

Focal length:  $\pm 1\%$   
 Diameter: +0, -0.1mm  
 Thickness:  $\pm 0.15\text{mm}$   
 Centration:  $\leq 1\text{arcmin}$   
 Surface quality: 20-10  
 Clear aperture:  $> 85\%$   
 Material: Synthetic fused silica  
 Coating: Optional (see pages 18 and 19)

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D (mm)	f (mm)	te (mm)	tc (mm)	fb (mm)	r (mm)	Centration (arcmin)	Surface Quality	Price	PART NUMBER
10.0	-9.7	5.0	2.0	-10.3	9.20	≤ 1	20 - 10		018-0040
10.0	-14.7	3.9	2.0	-15.3	13.80	≤ 1	20 - 10		018-0045
10.0	-19.7	3.4	2.0	-20.3	18.40	≤ 1	20 - 10		018-0050
10.0	-24.7	3.1	2.0	-25.3	23.00	≤ 1	20 - 10		018-0060
10.0	-29.7	2.9	2.0	-30.3	27.60	≤ 1	20 - 10		018-0070
10.0	-39.7	2.7	2.0	-40.3	36.80	≤ 1	20 - 10		018-0072
10.0	-49.7	2.5	2.0	-50.3	46.00	≤ 1	20 - 10		018-0075
15.0	-14.7	6.4	2.0	-15.3	13.80	≤ 1	20 - 10		018-0710
15.0	-19.7	5.2	2.0	-20.3	18.40	≤ 1	20 - 10		018-0715
15.0	-24.7	4.5	2.0	-25.3	23.00	≤ 1	20 - 10		018-0720
15.0	-29.7	4.1	2.0	-30.3	27.60	≤ 1	20 - 10		018-0725
15.0	-39.7	3.5	2.0	-40.3	36.80	≤ 1	20 - 10		018-0730
15.0	-49.7	3.2	2.0	-50.3	46.00	≤ 1	20 - 10		018-0735
20.0	-19.7	7.9	2.0	-20.3	18.40	≤ 1	20 - 10		018-0080
20.0	-24.7	6.6	2.0	-25.3	23.00	≤ 1	20 - 10		018-0090
20.0	-29.7	5.8	2.0	-30.3	27.60	≤ 1	20 - 10		018-0110
20.0	-39.7	4.8	2.0	-40.3	36.80	≤ 1	20 - 10		018-0120
20.0	-49.7	4.2	2.0	-50.3	46.00	≤ 1	20 - 10		018-0122
25.0	-24.7	9.4	2.0	-25.3	23.00	≤ 1	20 - 10		018-0125
25.0	-29.7	8.0	2.0	-30.3	27.60	≤ 1	20 - 10		018-0126
25.0	-34.7	7.1	2.0	-35.3	32.20	≤ 1	20 - 10		018-0128
25.0	-39.7	6.4	2.0	-40.3	36.80	≤ 1	20 - 10		018-0130
25.0	-49.7	5.5	2.0	-50.3	46.00	≤ 1	20 - 10		018-0140
25.0	-59.7	4.9	2.0	-60.3	55.20	≤ 1	20 - 10		018-0142
25.0	-69.7	4.5	2.0	-70.3	64.40	≤ 1	20 - 10		018-0145
25.0	-79.7	4.1	2.0	-80.3	73.60	≤ 1	20 - 10		018-0155
25.0	-89.7	3.9	2.0	-90.3	82.80	≤ 1	20 - 10		018-0157
25.0	-99.7	3.7	2.0	-100.3	92.00	≤ 1	20 - 10		018-0160
25.4	-24.7	9.6	2.0	-25.4	23.00	≤ 1	20 - 10		018-0245
25.4	-29.7	8.2	2.0	-30.4	27.60	≤ 1	20 - 10		018-0250
25.4	-39.7	6.5	2.0	-40.4	36.80	≤ 1	20 - 10		018-0258
25.4	-49.7	5.6	2.0	-50.4	46.00	≤ 1	20 - 10		018-0260
25.4	-59.7	5.0	2.0	-60.4	55.20	≤ 1	20 - 10		018-0270
25.4	-69.7	4.5	2.0	-70.4	64.40	≤ 1	20 - 10		018-0275
25.4	-79.7	4.2	2.0	-80.4	73.60	≤ 1	20 - 10		018-0280
25.4	-89.7	4.0	2.0	-90.4	82.80	≤ 1	20 - 10		018-0285
25.4	-99.7	3.8	2.0	-100.4	92.00	≤ 1	20 - 10		018-0290
25.4	-149.7	3.2	2.0	-150.4	138.00	≤ 1	20 - 10		018-0300
25.4	-199.7	2.9	2.0	-200.4	184.00	≤ 1	20 - 10		018-0310
30.0	-29.7	10.9	2.0	-30.3	27.60	≤ 1	20 - 10		018-0375
30.0	-34.7	9.4	2.0	-35.3	32.20	≤ 1	20 - 10		018-0377
30.0	-39.7	8.4	2.0	-40.3	36.80	≤ 1	20 - 10		018-0378
30.0	-49.7	7.0	2.0	-50.3	46.00	≤ 1	20 - 10		018-0380
30.0	-59.7	6.2	2.0	-60.3	55.20	≤ 1	20 - 10		018-0382
30.0	-69.7	5.5	2.0	-70.3	64.40	≤ 1	20 - 10		018-0384
30.0	-79.7	5.1	2.0	-80.3	73.60	≤ 1	20 - 10		018-0386
30.0	-89.7	4.7	2.0	-90.3	82.80	≤ 1	20 - 10		018-0388
30.0	-99.7	4.5	2.0	-100.3	92.00	≤ 1	20 - 10		018-0390
40.0	-39.7	13.8	2.0	-40.3	36.80	≤ 1	20 - 10		018-0760
40.0	-49.7	11.2	2.0	-50.3	46.00	≤ 1	20 - 10		018-0765
40.0	-59.7	9.5	2.0	-60.3	55.20	≤ 1	20 - 10		018-0770
40.0	-69.7	8.4	2.0	-70.3	64.40	≤ 1	20 - 10		018-0775
40.0	-79.7	7.5	2.0	-80.3	73.60	≤ 1	20 - 10		018-0780
40.0	-89.7	6.9	2.0	-90.3	82.80	≤ 1	20 - 10		018-0785
40.0	-99.7	6.4	2.0	-100.3	92.00	≤ 1	20 - 10		018-0790

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50.0	-49.5	17.8	3.0	-50.5	46.00	≤ 1	20 - 10		018-0465
50.0	-59.5	15.0	3.0	-60.5	55.20	≤ 1	20 - 10		018-0466
50.0	-69.5	13.1	3.0	-70.5	64.40	≤ 1	20 - 10		018-0467
50.0	-79.5	11.8	3.0	-80.5	73.60	≤ 1	20 - 10		018-0468
50.0	-89.5	10.7	3.0	-90.5	82.80	≤ 1	20 - 10		018-0468
50.0	-99.5	9.9	3.0	-100.5	92.00	≤ 1	20 - 10		018-0470
50.8	-49.5	18.3	3.0	-50.5	46.00	≤ 1	20 - 10		018-0665
50.8	-59.5	15.4	3.0	-60.5	55.20	≤ 1	20 - 10		018-0668
50.8	-69.5	13.4	3.0	-70.5	64.40	≤ 1	20 - 10		018-0670
50.8	-79.5	12.0	3.0	-80.5	73.60	≤ 1	20 - 10		018-0673
50.8	-89.5	11.0	3.0	-90.5	82.80	≤ 1	20 - 10		018-0675
50.8	-99.5	10.2	3.0	-100.5	92.00	≤ 1	20 - 10		018-0677
50.8	-149.5	7.7	3.0	-150.5	138.00	≤ 1	20 - 10		018-0683
50.8	-199.5	6.5	3.0	-200.5	184.00	≤ 1	20 - 10		018-0687
50.8	-249.5	5.8	3.0	-250.5	230.00	≤ 1	20 - 10		018-0690
50.8	-299.5	5.3	3.0	-300.5	276.00	≤ 1	20 - 10		018-0693



Keeping your optics clean will both improve optical performance and increase the optic's lifetime. Please turn to page 33 for our complete selection of cleaning supplies.

For other Anti-Reflection coatings append appropriate suffix (see pages 18 and 19).  
For other focal lengths or diameters please call.

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*Optical thin film coatings are used to control the intensity, wavelength selection and polarization characteristics of incident electro-magnetic radiation. For laser and precision optical applications the quality of the coating is critical. Coatings must be precise as well as durable and damage resistant. OptoSigma's advanced coating facility in Santa Ana, California is able to supply high performance laser coatings covering the optical spectrum from 190 to 2500nm.*