

PLANO-CONCAVE LENSES

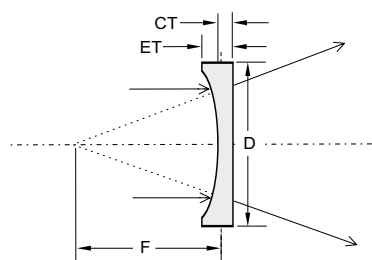
Features

- Have negative focal lengths
- Diverge collimated incident light
- Form only virtual images which are seen through the lens
- Reduce spherical aberration, coma and distortion at negative-infinite or near-infinite conjugate ratios
- With the concave surface facing the longest conjugate distance

These lenses are thicker at the edge than in the centre and flat on one side. The plano-concave lenses are used to expand light beams or to increase focal lengths in optical systems. They are often employed for beam expansion of high peak power pulsed lasers. A beam incident on a concave surface will be focused to a point outside the instrument.

Air heating and ionisation at the unwanted focal point are possible with corresponding mode disruption or material damage. To avoid this problem, the input lens should be reversed so that no concave surface faces a parallel beam.

A variety of anti-reflection coatings is available for these lenses. For an appropriate coating, please refer to the *Coatings Section*.



Specifications

Material	BK7, UV FS, CaF ₂	
Surface quality	40 – 20 scratch & dig (MIL-PRF-13830B)	
Clear aperture	90% of the diameter	
Diameter tolerance	+0.00 / -0.12 mm	
Thickness tolerance	±0.5 mm	
Surface irregularity	λ/8 @ 633 nm	
Surface irregularity for CaF ₂	λ/4 @ 546 nm	
Concentricity	3 arcmin	
Paraxial focal length	BK7	±2% @ 546 nm
	UV FS	±2% @ 355 nm
	CaF ₂	±2% @ 2940 nm

Please contact us if you can not find the lens that you need. We can provide a wide range of special focal lengths, diameters and coatings.

Most of the Lenses are available for fast off-the-shelf delivery. Check the availability at www.eksmaoptics.com



BK7 PLANO-CONCAVE LENSES

Focal length F, mm	Diameter D, mm	Centre thickness CT, mm	Edge thickness ET, mm	Radius, mm	Catalogue number	Price, EUR
-25.0	12.7	1.9	3.5	-13.0	112-0105E	14
-50.0	12.7	2.7	3.5	-25.9	112-0109E	14
-60.0	12.7	2.4	3.1	-31.1	112-0112E	14
-75.0	12.7	2.9	3.4	-38.9	112-0115E	14
-100.0	12.7	3.0	3.4	-51.9	112-0117E	14
-125.0	12.7	3.1	3.4	-64.8	112-0119E	14
-150.0	12.7	3.2	3.5	-77.8	112-0121E	14
-200.0	12.7	3.3	3.5	-103.7	112-0123E	14
-250.0	12.7	3.3	3.5	-129.7	112-0125E	14
-300.0	12.7	2.9	3.0	-155.6	112-0127E	14
-30.0	25.4	1.4	7.9	-15.6	112-0205E	18
-40.0	25.4	1.7	6.0	-20.7	112-0207E	18
-50.0	25.4	2.7	6.0	-25.9	112-0209E	18
-75.0	25.4	2.9	5.0	-38.9	112-0215E	17
-100.0	25.4	3.1	4.7	-51.9	112-0219E	17
-125.0	25.4	3.0	4.3	-64.8	112-0223E	17
-150.0	25.4	2.7	3.7	-77.8	112-0227E	17
-200.0	25.4	3.0	3.8	-103.7	112-0231E	17
-250.0	25.4	3.1	3.7	-129.7	112-0235E	17
-300.0	25.4	3.1	3.6	-155.6	112-0239E	17

Focal length F, mm	Diameter D, mm	Centre thickness CT, mm	Edge thickness ET, mm	Radius, mm	Catalogue number	Price, EUR
-400.0	25.4	3.6	4.0	-207.5	112-0243E	17
-450.0	25.4	3.6	3.9	-233.4	112-0245E	17
-500.0	25.4	3.7	4.0	-259.4	112-0247E	17
-650.0	25.4	3.7	4.0	-337.2	112-0250E	17
-750.0	25.4	3.8	4.0	-389.0	112-0252E	17
-1000.0	25.4	3.8	4.0	-518.7	112-0259E	17
-1500.0	25.4	3.9	4.0	-778.1	112-0260E	17
-2000.0	25.4	3.9	4.0	-1037.4	112-0261E	17
-3000.0	25.4	3.9	4.0	-1556.2	112-0263E	17
-5000.0	25.4	4.0	4.0	-2593.6	112-0265E	17
-100.0	38.1	2.0	5.5	-51.9	112-0409E	28
-150.0	38.1	3.3	5.6	-77.8	112-0411E	28
-200.0	38.1	4.2	5.8	-103.7	112-0415E	28
-300.0	38.1	4.8	5.6	-155.6	112-0419E	28
-75.0	50.8	3.0	12.0	-38.9	112-0502E	55
-100.0	50.8	3.4	10.0	-51.9	112-0505E	49
-125.0	50.8	4.8	10.0	-64.8	112-0506E	48
-150.0	50.8	4.7	9.0	-77.8	112-0507E	46
-200.0	50.8	4.8	8.0	-103.7	112-0509E	45
-250.0	50.8	5.0	7.5	-129.7	112-0511E	45

UV FS PLANO-CONCAVE LENSES

Focal length F, mm	Diameter D, mm	Centre thickness CT, mm	Edge thickness ET, mm	Radius, mm	Catalogue number	Price, EUR
-25.0	12.7	1.2	3.0	-11.9	112-1105E	47
-50.0	12.7	2.1	3.0	-23.8	112-1109E	47
-60.0	12.7	2.3	3.0	-28.5	112-1110E	47
-75.0	12.7	2.4	3.0	-35.7	112-1111E	46
-80.0	12.7	2.5	3.0	-38.1	112-1112E	46
-90.0	12.7	2.5	3.0	-42.8	112-1114E	46
-100.0	12.7	2.6	3.0	-47.6	112-1115E	46
-125.0	12.7	2.7	3.0	-59.4	112-1117E	46
-150.0	12.7	2.7	3.0	-71.3	112-1119E	46
-175.0	12.7	2.8	3.0	-83.3	112-1121E	46
-200.0	12.7	2.8	3.0	-95.2	112-1123E	46
-250.0	12.7	2.8	3.0	-118.9	112-1127E	46
-30.0	25.4	1.6	9.3	-14.3	112-1203E	75
-50.0	25.4	1.9	5.5	-23.8	112-1205E	70
-75.0	25.4	3.1	5.4	-35.7	112-1209E	70
-100.0	25.4	3.0	4.7	-47.6	112-1211E	70
-125.0	25.4	3.0	4.4	-59.5	112-1215E	70
-150.0	25.4	3.1	4.2	-71.3	112-1217E	65
-200.0	25.4	3.1	4.0	-95.2	112-1219E	65

Focal length F, mm	Diameter D, mm	Centre thickness CT, mm	Edge thickness ET, mm	Radius, mm	Catalogue number	Price, EUR
-250.0	25.4	3.3	4.0	-118.9	112-1221E	65
-300.0	25.4	3.4	4.0	-142.8	112-1223E	65
-400.0	25.4	3.6	4.0	-190.4	112-1227E	60
-500.0	25.4	3.7	4.0	-237.8	112-1233E	60
-750.0	25.4	3.8	4.0	-357.1	112-1239E	60
-1000.0	25.4	3.8	4.0	-475.5	112-1245E	60
-2000.0	25.4	3.9	4.0	-952.4	112-1250E	60
-5000.0	25.4	2.0	2.0	-2380.0	112-1255E	60
-100.0	38.1	2.4	6.4	-47.6	112-1411E	110
-150.0	38.1	3.0	5.5	-71.4	112-1415E	110
-200.0	38.1	3.0	4.9	-95.1	112-1419E	110
-300.0	38.1	4.3	5.6	-142.7	112-1427E	110
-100.0	50.8	5.0	11.9	-47.6	112-1509E	138
-150.0	50.8	3.2	7.9	-71.4	112-1512E	138
-250.0	50.8	3.1	5.7	-118.9	112-1517E	138
-300.0	50.8	3.5	5.8	-142.8	112-1519E	138
-500.0	50.8	4.7	6.0	-237.8	112-1527E	138
-2000.0	50.8	5.8	6.0	-951.0	112-1540E	138

CaF₂ PLANO-CONCAVE LENSES

Focal length F, mm	Diameter D, mm	Centre thickness CT, mm	Edge thickness ET, mm	Radius, mm	Catalogue number	Price, EUR
-25.0	12.7	1.9	4.0	-10.5	112-5105E	70
-50.0	12.7	2.0	3.0	-20.9	112-5109E	70
-75.0	12.7	2.4	3.0	-31.4	112-5111E	70
-100.0	12.7	2.5	3.0	-41.8	112-5115E	70
-150.0	12.7	2.7	3.0	-62.7	112-5120E	70
-200.0	12.7	1.8	2.0	-83.6	112-5125E	70
-250.0	12.7	1.8	2.0	-104.6	112-5130E	70
-500.0	12.7	1.9	2.0	-209.1	112-5135E	70
-40.0	25.4	2.5	8.3	-16.7	112-5204E	75
-50.0	25.4	2.7	7.0	-20.9	112-5205E	75
-75.0	25.4	2.8	5.5	-31.4	112-5209E	75
-100.0	25.4	3.0	5.0	-41.8	112-5211E	75
-150.0	25.4	2.7	4.0	-62.7	112-5217E	75
-200.0	25.4	3.0	4.0	-83.6	112-5219E	75
-250.0	25.4	3.2	4.0	-104.6	112-5223E	75
-300.0	25.4	3.4	4.0	-125.5	112-5225E	75
-400.0	25.4	3.5	4.0	-167.3	112-5228E	75
-500.0	25.4	2.6	3.0	-209.1	112-5230E	75
-1000.0	25.4	2.8	3.0	-418.2	112-5235E	75
-200.0	50.8	3.6	7.5	-83.6	112-5519E	180
-300.0	50.8	3.0	5.6	-125.5	112-5525E	180
-500.0	50.8	4.0	5.5	-209.1	112-5530E	180

We can supply custom cutting, edging, coating or complete fabrication if required. If you do not find what you need in our catalogue, please send your specification or drawings for a custom quotation.

Housing accessories

Adjustable Lens Mounts 830-0030

Find more at EksmaOptics.com



Ordering of Coated Lenses

Please choose relevant coating from anti-reflection coatings section (pages 1.5 - 1.6). The coating code and price should be added to the lens code and price.

Example:

BK7 pl/cv lens Ø12.7 mm, F=-250 mm, coated AR/AR@400-700 nm, AOI=0°

Code: **112-0125E** + **ARB550**, Price: 14 + 67 EUR= 81 EUR/pc.

