

# OPTICS

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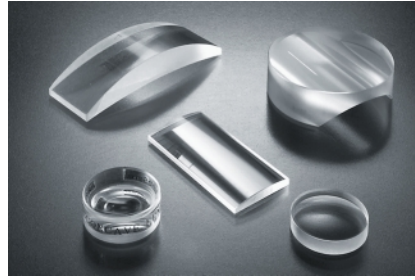
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# LENSES



## PLANO-CONVEX LENSES

positive focal length

converge incident light

form both real and virtual images

very close to the form minimizing spherical aberration for infinite conjugate applications

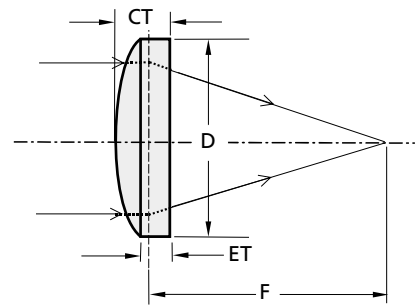
These simplest form lenses have flat surface on one side and spherical surface on the other. They are widely used in telescopes, microscopes, collimators, optical transceivers, magnifiers, condenser systems and eyepieces.

*Under customer's request lenses may be anti-reflection coated.*

*For required coating please refer to the Coatings section.*

Standard lenses of EKSMA have a range of focal lengths – from 25 mm to 10000 mm, and diameters – from 12.5 mm to 50.8 mm.

*Contact EKSMA for other size, focus or precision requirements.*



If you don't see exactly the lens that you need give us a call. We have a wide range of special focal lengths, diameters, and coatings available.

Most of our lenses are available from stock and can be shipped to you the same day when order is placed.

### SPECIFICATIONS

Material		BK7, FS, UV FS, CaF <sub>2</sub>
Surface quality		40-20 scratch & dig
Clear aperture		90% of the diameter
Diameter tolerance		+0.00,-0.12 mm
Thickness tolerance		±0.25 mm
Surface irregularity		λ/8 @ 546 nm
Paraxial focal length	BK7	±2% @ 546 nm
	FS, UV FS	±2% @ 355 nm
	CaF <sub>2</sub>	±2% @ 2940 nm

### BK7 PLANO-CONVEX LENSES

Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm	Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
	Metric	English					Metric	English			
110-0105	12.5	12.7	25.0	4.0	2.7	110-0205	25.0	25.4	30.0	8.5	2.3
110-0107	12.5	12.7	40.0	3.0	2.3	110-0207	25.0	25.4	40.0	6.1	2.0
110-0109	12.5	12.7	50.0	3.0	2.4	110-0209	25.0	25.4	50.0	5.0	2.0
110-0111	12.5	12.7	60.0	3.0	2.5	110-0211	25.0	25.4	60.0	4.4	2.0
110-0115	12.5	12.7	75.0	3.0	2.6	110-0215	25.0	25.4	75.0	4.0	2.0
110-0117	12.5	12.7	100.0	3.0	2.7	110-0219	25.0	25.4	100.0	3.5	2.0
110-0121	12.5	12.7	150.0	3.0	2.8	110-0223	25.0	25.4	125.0	3.2	2.0
110-0123	12.5	12.7	200.0	3.0	2.8	110-0227	25.0	25.4	150.0	3.0	2.0
110-0125	12.5	12.7	250.0	3.0	2.9	110-0231	25.0	25.4	200.0	3.0	2.2
110-0129	12.5	12.7	500.0	2.1	2.0	110-0235	25.0	25.4	250.0	3.0	2.4
110-0135	12.5	12.7	1000.0	2.1	2.0	110-0237	25.0	25.4	270.0	3.0	2.5
110-0145	12.5	12.7	1500.0	2.1	2.1						

*For metric dimensions please add to catalogue number code M, for English – code E.*

## BK7 PLANO-CONVEX LENSES

Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm	Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
	Metric	English					Metric	English			
110-0239	25.0	25.4	300.0	3.0	2.5	110-0417	40.0	38.1	250.0	4.0	2.5
110-0241	25.0	25.4	350.0	3.0	2.5	110-0419	40.0	38.1	300.0	4.0	2.7
110-0243	25.0	25.4	400.0	3.0	2.5	110-0423	40.0	38.1	400.0	4.0	3.1
110-0245	25.0	25.4	450.0	3.0	2.7	110-0427	40.0	38.1	500.0	4.0	3.4
110-0247	25.0	25.4	500.0	3.0	2.7	110-0435	40.0	38.1	700.0	4.0	3.5
110-0251	25.0	25.4	700.0	3.0	2.8	110-0445	40.0	38.1	1000.0	4.0	3.6
110-0255	25.0	25.4	800.0	3.0	2.8	110-0455	40.0	38.1	5000.0	4.0	3.8
110-0259	25.0	25.4	1000.0	3.0	2.8	110-0505	50.0	50.8	100.0	10.4	3.0
110-0263	25.0	25.4	1200.0	3.0	2.9	110-0509	50.0	50.8	200.0	6.1	3.0
110-0265	25.0	25.4	1300.0	3.0	2.9	110-0511	50.0	50.8	250.0	5.4	3.0
110-0271	25.0	25.4	2000.0	3.0	2.9	110-0515	50.0	50.8	300.0	5.0	3.0
110-0275	25.0	25.4	2500.0	3.0	2.9	110-0519	50.0	50.8	350.0	4.7	3.0
110-0281	25.0	25.4	3000.0	3.0	2.9	110-0523	50.0	50.8	400.0	5.5	4.0
110-0285	25.0	25.4	4000.0	3.0	3.0	110-0525	50.0	50.8	500.0	5.2	4.0
110-0289	25.0	25.4	5000.0	3.0	3.0	110-0527	50.0	50.8	600.0	5.0	4.0
110-0295	25.0	25.4	10000.0	3.0	3.0	110-0531	50.0	50.8	800.0	5.0	4.2
110-0405	40.0	38.1	50.0	12.0	3.0	110-0535	50.0	50.8	1000.0	5.0	4.4
110-0407	40.0	38.1	75.0	7.3	2.5	110-0545	50.0	50.8	2000.0	5.0	4.7
110-0409	40.0	38.1	100.0	6.5	2.5	110-0555	50.0	50.8	5000.0	5.0	4.9
110-0411	40.0	38.1	150.0	5.1	2.5	110-0565	50.0	50.8	10000.0	5.0	4.9
110-0415	40.0	38.1	200.0	4.3	2.5						

## FS &amp; UV FS PLANO-CONVEX LENSES

Catalogue number		Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
UV FS	FS	Metric	English			
110-1105	110-3105	12.5	12.7	25.0	4.0	2.2
110-1109	110-3109	12.5	12.7	50.0	3.0	2.2
110-1111	110-3111	12.5	12.7	75.0	3.0	2.4
110-1115	110-3115	12.5	12.7	100.0	3.0	2.5
110-1119	110-3119	12.5	12.7	150.0	3.0	2.7
110-1123	110-3123	12.5	12.7	200.0	3.0	2.8
110-1127	110-3127	12.5	12.7	250.0	3.0	2.8
110-1205	110-3205	25.0	25.4	50.0	6.0	2.3
110-1209	110-3209	25.0	25.4	75.0	4.5	2.2
110-1211	110-3211	25.0	25.4	100.0	4.0	2.3
110-1215	110-3215	25.0	25.4	120.0	4.0	2.4
110-1217	110-3217	25.0	25.4	150.0	4.0	2.8
110-1219	110-3219	25.0	25.4	200.0	4.0	3.2
110-1221	110-3221	25.0	25.4	250.0	4.0	3.3
110-1223	110-3223	25.0	25.4	300.0	4.0	3.4
110-1227	110-3227	25.0	25.4	400.0	4.0	3.6
110-1229	110-3229	25.0	25.4	430.0	4.0	3.6
110-1233	110-3233	25.0	25.4	500.0	4.0	3.6
110-1239	110-3239	25.0	25.4	750.0	4.0	3.7
110-1245	110-3245	25.0	25.4	1000.0	4.0	3.8
110-1255	110-3255	25.0	25.4	1500.0	4.0	3.9
110-1265	110-3265	25.0	25.4	2000.0	4.0	3.9
110-1275	110-3275	25.0	25.4	5000.0	4.0	4.0

For metric dimensions please add to catalogue number code M, for English – code E.

## FS &amp; UV FS PLANO-CONVEX LENSES

Catalogue number		Diameter D, mm		Focal length	Centre thickness	Edge thickness
UV FS	FS	Metric	English	F, mm	CT, mm	ET, mm
110-1405	110-3405	40.0	38.1	50.0	13.5	2.5
110-1409	110-3409	40.0	38.1	75.0	8.6	2.5
110-1411	110-3411	40.0	38.1	100.0	6.9	2.5
110-1415	110-3415	40.0	38.1	150.0	5.4	2.5
110-1419	110-3419	40.0	38.1	200.0	4.0	2.8
110-1423	110-3423	40.0	38.1	250.0	4.0	2.2
110-1427	110-3427	40.0	38.1	300.0	4.0	2.5
110-1431	110-3431	40.0	38.1	400.0	4.0	2.9
110-1435	110-3435	40.0	38.1	500.0	4.0	3.1
110-1439	110-3439	40.0	38.1	600.0	4.0	3.2
110-1445	110-3445	40.0	38.1	1000.0	4.0	3.5
110-1455	110-3455	40.0	38.1	1500.0	4.0	3.7
110-1475	110-3475	40.0	38.1	5000.0	4.0	3.9
110-1505	110-3506	50.0	50.8	75.0	12.2	2.0
110-1509	110-3509	50.0	50.8	100.0	9.6	2.0
110-1511	110-3511	50.0	50.8	150.0	6.5	2.0
110-1515	110-3515	50.0	50.8	200.0	6.0	2.5
110-1519	110-3519	50.0	50.8	300.0	6.0	3.7
110-1523	110-3523	50.0	50.8	400.0	6.0	4.3
110-1527	110-3527	50.0	50.8	500.0	6.0	4.7
110-1531	110-3531	50.0	50.8	600.0	6.0	4.9
110-1535	110-3535	50.0	50.8	800.0	6.0	4.8
110-1545	110-3545	50.0	50.8	1000.0	6.0	5.3
110-1555	110-3555	50.0	50.8	2000.0	6.0	5.7
110-1565	110-3565	50.0	50.8	2500.0	6.0	5.7

For metric dimensions please add to catalogue number code M, for English – code E.

We can supply custom cutting, edging, coating or complete fabrication if required.

If you do not find what you need in our list of stock items, please send your specification or drawings for a custom quotation.

CaF<sub>2</sub> PLANO-CONVEX LENSES

Catalogue number		Diameter D, mm		Focal length	Centre thickness	Edge thickness
CaF <sub>2</sub>		Metric	English	F, mm	CT, mm	ET, mm
110-5105		12.5	12.7	25.0	4.1	2.0
110-5109		12.5	12.7	50.0	3.0	2.0
110-5111		12.5	12.7	75.0	2.6	2.0
110-5115		12.5	12.7	100.0	2.5	2.0
110-5119		12.5	12.7	150.0	2.3	2.0
110-5123		12.5	12.7	200.0	2.2	2.0
110-5127		12.5	12.7	250.0	2.2	2.0
110-5135		12.5	12.7	500.0	2.1	2.0
110-5205		25.0	25.4	50.0	7.3	3.0
110-5209		25.0	25.4	75.0	5.7	3.0
110-5211		25.0	25.4	100.0	5.0	3.0
110-5217		25.0	25.4	150.0	4.3	3.0
110-5219		25.0	25.4	200.0	4.0	3.0
110-5221		25.0	25.4	250.0	3.8	3.0
110-5223		25.0	25.4	500.0	3.4	3.0
110-5227		25.0	25.4	1000.0	3.2	3.0

For metric dimensions please add to catalogue number code M, for English – code E.

## BICONVEX LENSES

have positive focal lengths

converge incident light

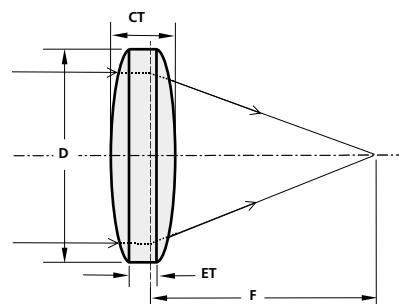
form both real and virtual images

minimize spherical aberration as well as cancel coma and distortion at unit conjugate ratio

Biconvex lenses are all symmetrical, having equal radii on both sides. They are recommended for virtual imaging of real objects, and for positive conjugate ratios from 0.2 up to 5. Outside of this ratios range plano-convex lenses are usually more suitable. Biconvex lenses are used as magnifiers, objectives, some condensing systems.

Since both surfaces contribute to the power of biconvex lenses, they have shorter focal lengths than plano-convex lenses of equal diameter and surface radius.

*Lenses may be anti-reflection coated. For required coating please refer to Coatings section .*



### SPECIFICATIONS

Material	BK7, FS, UV FS
Surface quality	60-40 scratch & dig
Clear aperture	90% of the diameter
Diameter tolerance	+0.00,-0.12 mm
Thickness tolerance	±0.25 mm
Surface irregularity	$\lambda/2$ @ 633 nm
Paraxial focal length	BK7 ±2% @ 546 nm
	FS, UV FS ±2% @ 355 nm

Most of our lenses are available from stock and can be shipped to you the same day your order is placed.

If you don't see exactly the lens that you need give us a call. We have a wide range of special focal lengths, diameters, and coatings.

### BK7 BICONVEX LENSES

Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm	Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
	Metric	English					Metric	English			
111-0104	12.5	12.7	12.7	4.8	1.2	111-0234	25.0	25.4	500.0	4.0	3.7
111-0108	12.5	12.7	25.0	3.5	1.9	111-0240	25.0	25.4	700.0	4.0	3.8
111-0114	12.5	12.7	40.0	2.5	2.0	111-0250	25.0	25.4	1000.0	4.0	3.8
111-0116	12.5	12.7	50.0	2.5	1.9						
111-0118	12.5	12.7	60.0	2.5	2.0	111-0404	40.0	38.1	50.0	10.5	2.2
						111-0410	40.0	38.1	100.0	6.0	2.0
111-0120	12.5	12.7	75.0	2.5	2.0	111-0414	40.0	38.1	150.0	5.0	2.6
111-0124	12.5	12.7	100.0	2.0	1.6	111-0418	40.0	38.1	200.0	5.0	3.0
111-0128	12.5	12.7	125.0	2.0	1.7	111-0422	40.0	38.1	250.0	5.0	3.4
111-0132	12.5	12.7	150.0	2.0	1.7						
						111-0426	40.0	38.1	300.0	5.0	3.7
111-0136	12.5	12.7	200.0	2.0	1.9	111-0430	40.0	38.1	400.0	5.0	4.0
111-0140	12.5	12.7	250.0	2.0	1.9	111-0434	40.0	38.1	500.0	5.0	4.2
111-0144	12.5	12.7	300.0	2.0	1.9	111-0440	40.0	38.1	700.0	5.0	4.5
111-0148	12.5	12.7	400.0	2.0	1.9	111-0450	40.0	38.1	1000	5.0	4.6
111-0204	25.0	25.4	25.0	9.0	2.1	111-0504	50.0	50.8	50.0	15.0	1.5
111-0206	25.0	25.4	30.0	7.5	2.4	111-0508	50.0	50.8	75.0	10.0	2.0
111-0208	25.0	25.4	40.0	6.0	3.0	111-0514	50.0	50.8	200.0	5.0	2.0
111-0210	25.0	25.4	50.0	6.0	3.0	111-0518	50.0	50.8	300.0	5.0	3.0
111-0214	25.0	25.4	60.0	4.0	1.6	111-0522	50.0	50.8	400.0	5.0	3.6
111-0216	25.0	25.4	75.0	4.0	2.0	111-0526	50.0	50.8	500.0	5.0	4.0
111-0218	25.0	25.4	100.0	4.0	2.5	111-0534	50.0	50.8	750.0	5.0	3.4
111-0222	25.0	25.4	150.0	4.0	3.0	111-0544	50.0	50.8	1000.0	5.0	4.4
111-0226	25.0	25.4	200.0	4.0	3.2	111-0550	50.0	50.8	1200.0	5.0	4.5
111-0228	25.0	25.4	250.0	4.0	3.4						

## FS &amp; UV FS BICONVEX LENSES

Catalogue number		Diameter D, mm		Focal length	Centre thickness	Edge thickness
UVFS	FS	Metric	English	F, mm	CT, mm	ET, mm
111-1104	111-3104	12.5	12.7	12.7	6.0	1.8
111-1108	111-3108	12.5	12.7	25.0	3.5	1.8
111-1114	111-3114	12.5	12.7	50.0	3.0	2.1
111-1118	111-3118	12.5	12.7	75.0	2.5	1.9
111-1122	111-3122	12.5	12.7	100.0	2.3	1.9
111-1126	111-3126	12.5	12.7	150.0	2.2	1.9
111-1204	111-3204	25.0	25.4	25.0	10.0	2.4
111-1206	111-3206	25.0	25.4	35.0	7.1	2.1
111-1210	111-3210	25.0	25.4	50.0	6.0	2.5
111-1214	111-3214	25.0	25.4	75.0	4.0	1.7
111-1218	111-3218	25.0	25.4	100.0	4.0	2.3
111-1222	111-3222	25.0	25.4	150.0	3.2	2.1
111-1226	111-3226	25.0	25.4	200.0	3.0	2.2
111-1230	111-3230	25.0	25.4	250.0	3.0	2.3
111-1234	111-3234	25.0	25.4	300.0	3.0	2.6
111-1238	111-3238	25.0	25.4	400.0	3.0	2.7
111-1240	111-3240	25.0	25.4	500.0	3.0	2.7
111-1250	111-3250	25.0	25.4	750.0	3.0	2.9
111-1260	111-3260	25.0	25.4	1000.0	3.0	2.8
111-1404	111-3404	40.0	38.1	50.0	11.0	1.9
111-1410	111-3410	40.0	38.1	100.0	5.0	1.5
111-1414	111-3414	40.0	38.1	150.0	5.0	2.1
111-1418	111-3418	40.0	38.1	200.0	5.0	2.8
111-1422	111-3422	40.0	38.1	250.0	4.0	2.3
111-1426	111-3426	40.0	38.1	300.0	5.0	3.5
111-1430	111-3430	40.0	38.1	400.0	5.0	3.9
111-1434	111-3434	40.0	38.1	500.0	5.0	4.1
111-1440	111-3440	40.0	38.1	700.0	5.0	4.4
111-1460	111-3460	40.0	38.1	1000.0	4.7	4.3
111-1504	111-3504	50.0	50.8	50.0	16.2	1.0
111-1508	111-3508	50.0	50.8	75.0	10.3	1.1
111-1514	111-3514	50.0	50.8	100.0	10.0	2.9
111-1520	111-3520	50.0	50.8	175.0	6.6	3.0
111-1522	111-3522	50.0	50.8	200.0	7.0	3.5
111-1526	111-3526	50.0	50.8	250.0	6.0	3.8
111-1530	111-3530	50.0	50.8	300.0	6.0	4.0
111-1534	111-3534	50.0	50.8	500.0	6.0	4.8
111-1550	111-3550	50.0	50.8	1000.0	6.0	5.4

For metric dimensions please add to catalogue number code M, for English – code E.

Let us help with your custom requirements.

### Self-Centering

### Lens Mounts

830-0010, 830-0020



830-0020

830-0010

The model 830-0010 and model 830-0020 self-centering lens mounts reliably centre and safely hold round optics and cylindrical components. Holding by three rods with V-groove tips provide easy and secure optics accommodation with high relocation repeatability.

Model 830-0010 accommodates optics up to 40 mm and model 830-0020 up to 60 mm in diameter.

Finish: black anodized aluminium.

Contact us  
for details.

## PLANO - CONCAVE LENSES

have negative focal lengths

diverge collimated incident light

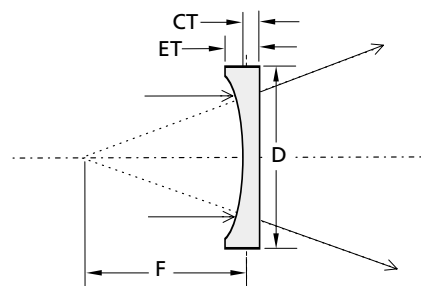
forms only virtual images which are seen through the lens

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 ionization at the unwanted focal point are possible with attendant 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 appropriate coating please refer to the Coatings section.



Most of our lenses are available from stock and can be shipped to you the same day your order is placed.

### SPECIFICATIONS

Material	BK7, FS, UV FS, CaF <sub>2</sub>
Surface quality	40-20 scratch & dig
Clear aperture	90% of the diameter
Diameter tolerance	+0.00,-0.12 mm
Thickness tolerance	±0.25 mm
Surface irregularity	λ/2 @ 633 nm
Paraxial focal length	BK7 ±2% @ 546 nm
	FS, UV FS ±2% @ 355 nm
	CaF <sub>2</sub> ±2% @ 2940 nm

### BK7 PLANO-CONCAVE LENSES

Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm	Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
	Metric	English					Metric	English			
112-0105	12.5	12.7	-25.0	1.9	3.5	112-0227	25.0	25.4	-150.0	2.7	3.7
112-0109	12.5	12.7	-50.0	2.7	3.5	112-0231	25.0	25.4	-200.0	3.0	3.7
112-0115	12.5	12.7	-75.0	2.9	3.5	112-0239	25.0	25.4	-300.0	3.1	3.7
112-0117	12.5	12.7	-100.0	3.0	3.5	112-0409	40.0	38.1	-100.0	2.0	7.0
112-0209	25.0	25.4	-50.0	2.8	6.0	112-0411	40.0	38.1	-150.0	3.3	6.0
112-0215	25.0	25.4	-75.0	2.9	5.0	112-0415	40.0	38.1	-200.0	4.1	6.0
112-0219	25.0	25.4	-100.0	3.1	4.5	112-0419	40.0	38.1	-300.0	4.7	6.0

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 UV FS & FS PLANO-CONCAVE LENSES
 

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Catalogue number		Diameter D, mm		Focal length	Centre thickness	Edge thickness
UV FS	FS	Metric	English	F, mm	CT, mm	ET, mm
112-1105	112-3105	12.5	12.7	-25.0	1.3	3.2
112-1109	112-3109	12.5	12.7	-50.0	2.1	3.0
112-1111	112-3111	12.5	12.7	-75.0	2.4	3.0
112-1115	112-3115	12.5	12.7	-100.0	2.6	3.0
112-1205	112-3205	25.0	25.4	-50.0	1.9	5.6
112-1209	112-3209	25.0	25.4	-75.0	3.1	5.5
112-1211	112-3211	25.0	25.4	-100.0	3.0	4.7
112-1217	112-3217	25.0	25.4	-150.0	3.1	4.2
112-1219	112-3219	25.0	25.4	-200.0	3.1	4.0
112-1223	112-3223	25.0	25.4	-300.0	2.9	3.5
112-1411	112-3411	40.0	38.1	-100.0	2.4	7.0
112-1415	112-3415	40.0	38.1	-150.0	3.0	6.0
112-1419	112-3419	40.0	38.1	-200.0	3.0	5.2
112-1427	112-3427	40.0	38.1	-300.0	4.3	5.7

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 CaF<sub>2</sub> PLANO-CONCAVE LENSES
 

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Catalogue number		Diameter D, mm		Focal length	Centre thickness	Edge thickness
CaF <sub>2</sub>		Metric	English	F, mm	CT, mm	ET, mm
112-5105		12.5	12.7	-25.0	1.9	4.0
112-5109		12.5	12.7	-50.0	2.0	3.0
112-5111		12.5	12.7	-75.0	2.4	3.0
112-5115		12.5	12.7	-100.0	2.5	3.0
112-5120		12.5	12.7	-150.0	2.7	3.0
112-5125		12.5	12.7	-200.0	1.8	2.0
112-5130		12.5	12.7	-250.0	1.8	2.0
112-5135		12.5	12.7	-500.0	1.9	2.0
112-5205		25.0	25.4	-50.0	2.7	7.0
112-5209		25.0	25.4	-75.0	2.8	5.5
112-5211		25.0	25.4	-100.0	3.0	5.0
112-5217		25.0	25.4	-150.0	2.7	4.0
112-5219		25.0	25.4	-200.0	3.0	4.0
112-5223		25.0	25.4	-250.0	3.2	4.0
112-5230		25.0	25.4	-500.0	2.6	3.0
112-5235		25.0	25.4	-1000.0	2.8	3.0

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

Contact **EKSMA** for other size, focus or precision requirements.

### Adjustable Lens Mounts 830-0030



Contact us for details.

The 830-0030 series adjustable lens mounts provide convenient, precise optics centering and repeatable removal and replacing. Lenses are positioned and locked in place by three rigid shaft assemblies with V-groove tips. Each individually adjustable shaft incorporates a sliding sleeve for rough positioning and diameter setting and collet fix sleeve in place. A thumbscrews at the end of two orthogonal sleeves then provide fine X-Y position adjustment within 3 mm range.

Finish: black anodized aluminium.

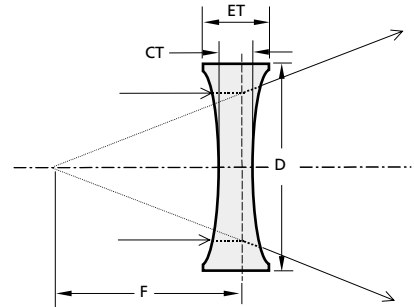


## BICONCAVE LENSES

- have negative focal lengths
- diverge collimated incident light
- form only virtual images which are seen through the lens
- minimize spherical aberration, coma and distortion at unit conjugate ratio

These lenses are symmetrical with equal radii on both sides. The biconcave lenses are often used to expand light beams or to increase focal lengths in optical systems, and are normally used in combination with other lenses. Among the many devices utilising biconcave lenses are laser beam expanders, optical character readers, viewers and projection systems.

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



### SPECIFICATIONS

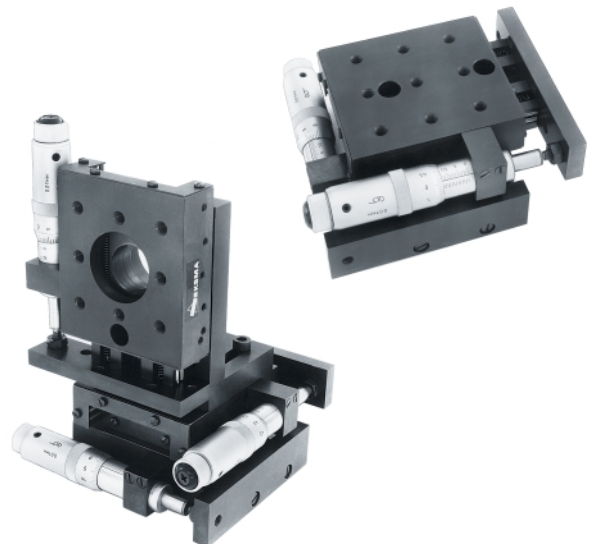
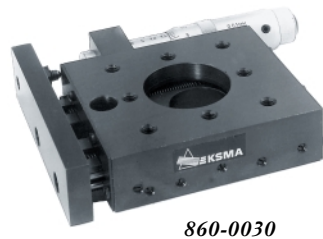
Material	BK7, FS, UV FS
Surface quality	60-40 scratch & dig
Clear aperture	90% of the diameter
Diameter tolerance	+0.00, -0.12 mm
Thickness tolerance	±0.25 mm
Surface irregularity	λ/2 @ 633 nm
Paraxial focal length	BK7 ±2% @ 546 nm
	FS, UV FS ±2% @ 355 nm

Most of our lenses are available from stock and can be shipped to you the same day when order is placed.

If you don't see exactly the lens that you need give us a call. We have a wide range of special focal lengths, diameters, and coatings.

### Precision Translation Stages 860-0030, 860-0040

Contact us for details.



BK7 BICONCAVE LENSES

Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm	Cat. No. BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
	Metric	English					Metric	English			
114-0104	12.5	12.7	-12.7	3.2	5.0	114-0204	25.0	25.4	-25.0	4.8	8.3
114-0106	12.5	12.7	-25.0	2.2	3.0	114-0206	25.0	25.4	-40.0	2.7	6.1
114-0108	12.5	12.7	-40.0	2.4	3.0	114-0208	25.0	25.4	-50.0	4.4	6.0
114-0110	12.5	12.7	-50.0	2.6	3.0	114-0210	25.0	25.4	-60.0	2.6	5.0
114-0112	12.5	12.7	-60.0	2.6	3.0	114-0212	25.0	25.4	-75.0	3.7	4.7
114-0114	12.5	12.7	-75.0	2.7	3.0	114-0214	25.0	25.4	-100.0	3.2	4.0
114-0118	12.5	12.7	-100.0	2.8	3.0	114-0218	25.0	25.4	-125.0	3.1	4.0
114-0120	12.5	12.7	-125.0	1.7	2.0	114-0220	25.0	25.4	-150.0	3.0	4.0
114-0124	12.5	12.7	-150.0	1.8	2.0	114-0224	25.0	25.4	-200.0	2.8	3.5
114-0128	12.5	12.7	-200.0	1.8	2.0	114-0228	25.0	25.4	-250.0	2.5	3.1
114-0132	12.5	12.7	-250.0	1.8	2.0	114-0234	25.0	25.4	-400.0	2.5	2.8

For metric dimensions please add to catalogue number code M, for English – code E.

FS & UVFS BICONCAVE LENSES

Catalogue number		Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
UVFS	FS	Metric	English			
114-1104	114-3104	12.5	12.7	-12.5	3.7	5.8
114-1108	114-3108	12.5	12.7	-25.0	2.3	3.2
114-1110	114-3110	12.5	12.7	-30.0	1.3	2.5
114-1114	114-3114	12.5	12.7	-50.0	2.6	3.0
114-1118	114-3118	12.5	12.7	-75.0	2.7	3.0
114-1122	114-3122	12.5	12.7	-100.0	2.8	3.0
114-1204	114-3204	25.0	25.4	-25.0	5.3	9.5
114-1208	114-3208	25.0	25.4	-50.0	4.2	6.0
114-1212	114-3212	25.0	25.4	-75.0	3.8	5.0
114-1216	114-3216	25.0	25.4	-100.0	3.6	4.5
114-1220	114-3220	25.0	25.4	-150.0	3.9	4.5
114-1224	114-3224	25.0	25.4	-200.0	3.0	3.9

For metric dimensions please add to catalogue number code M, for English – code E.

Please contact **EK SMA** for other size, focus or precision requirements.

1. COATINGS

2. MIRRORS

3. LENSES

4. WINDOWS

5. PRISMS

6. POLARISING OPTICS

7. UV & IR OPTICS

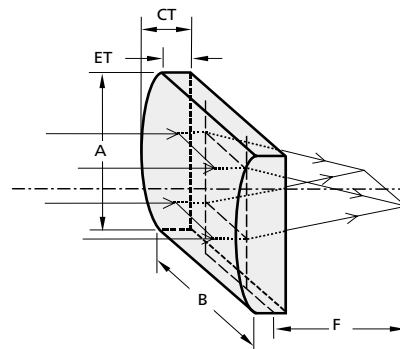
## PLANO – CYLINDRICAL LENSES

condense or expand light in one dimension only  
ideal for producing line images, for scanning and projection

We offer a selection of either plano-convex or plano-concave in form and rectangular in shape cylindrical lenses. These lenses are used to focus light to a thin line in laser scanners, spectroscopy, dye lasers, acousto-optics, optical processors and other similar applications. They are the best for circularization of diode laser outputs, energy collection for linear detectors or for coupling to a slit input.

Earlier remarks made about plano-convex and plano-concave spherical lenses, with regard to aberrations and conjugate ratios, are also applicable to cylindrical lenses.

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



### SPECIFICATIONS

Material	BK7, FS, UV FS
Surface quality	40-20 scratch & dig
Clear aperture	90% of the diameter
Dimension tolerance	+0.00, -0.12 mm
Thickness tolerance	±0.5 mm
Surface irregularity	1 λ @ 633 nm
Paraxial focal length	BK7 ±2% @ 546 nm FS, UV FS ±2% @ 355 nm

Most of lenses are available from stock and can be shipped to you the same day when order is placed.

If you don't see exactly the lens that you need give us a call. We have a wide range of special focal lengths, diameters, and coatings.

### BK7 PLANO-CONVEX CYLINDRICAL LENSES

Cat. No.	Dimensions Metric		Dimensions English		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm
	A, mm	B, mm	A, mm	B, mm			
<b>BK7</b>							
<b>120-0105</b>	10.0	10.0	12.7	12.7	15	3.7	1.5
<b>120-0110</b>	19.0	25.0	19.1	25.4	25	6.1	2.0
<b>120-0205</b>	25.0	50.0	25.4	50.8	50	5.2	2.0
<b>120-0210</b>	25.0	50.0	25.4	50.8	75	4.1	2.0
<b>120-0215</b>	25.0	50.0	25.4	50.8	100	3.5	2.0
<b>120-0220</b>	25.0	50.0	25.4	50.8	150	3.0	2.0
<b>120-0225</b>	25.0	50.0	25.4	50.8	200	2.8	2.0
<b>120-0230</b>	25.0	50.0	25.4	50.8	300	2.5	2.0
<b>120-0235</b>	25.0	50.0	25.4	50.8	500	2.4	2.0
<b>120-0240</b>	25.0	50.0	25.4	50.8	1000	2.3	2.0
<b>120-0245</b>	25.0	50.0	25.4	50.8	1500	2.2	2.0

*For metric dimensions please add to catalogue number code M, for English – code E.*

### UV FS & FS PLANO-CONVEX CYLINDRICAL LENSES

Catalogue number		Dimensions Metric		Dimensions English		Focal length	Centre thickness	Edge thickness
UVFS	FS	A, mm	B, mm	A, mm	B, mm	F, mm	CT, mm	ET, mm
120-1105	120-3105	19.0	25.0	19.1	25.4	25	8.0	3.0
120-1205	120-3205	25.0	50.0	25.4	50.8	50	7.1	3.5
120-1210	120-3210	25.0	50.0	25.4	50.8	75	5.6	3.3
120-1215	120-3215	25.0	50.0	25.4	50.8	100	4.7	3.0
120-1220	120-3220	25.0	50.0	25.4	50.8	150	4.1	3.0
120-1225	120-3225	25.0	50.0	25.4	50.8	200	4.3	3.5
120-1230	120-3230	25.0	50.0	25.4	50.8	300	4.1	3.5
120-1235	120-3235	25.0	50.0	25.4	50.8	500	3.8	3.5
120-1240	120-3240	25.0	50.0	25.4	50.8	1000	2.5	2.3
120-1245	120-3245	25.0	50.0	25.4	50.8	1500	2.2	2.0

For metric dimensions please add to catalogue number code M, for English – code E.

### BK7 PLANO-CONCAVE CYLINDRICAL LENSES

Cat. No.	Dimensions Metric		Dimensions English		Focal length	Centre thickness	Edge thickness
BK7	A, mm	B, mm	A, mm	B, mm	F, mm	CT, mm	ET, mm
122-0105	10.0	10.0	12.7	12.7	-15	1.4	3.7
122-0110	19.0	25.0	19.1	25.4	-25	2.0	6.0
122-0205	25.0	50.0	25.4	50.8	-50	2.0	5.2
122-0210	25.0	50.0	25.4	50.8	-75	2.0	4.1
122-0215	25.0	50.0	25.4	50.8	-100	2.0	3.5
122-0220	25.0	50.0	25.4	50.8	-150	2.0	3.0
122-0225	25.0	50.0	25.4	50.8	-200	2.0	2.8
122-0230	25.0	50.0	25.4	50.8	-300	2.0	2.5
122-0235	25.0	50.0	25.4	50.8	-500	2.0	2.4

For metric dimensions please add to catalogue number code M, for English – code E.

### UV FS & FS PLANO-CONCAVE CYLINDRICAL LENSES

Catalogue number		Dimensions Metric		Dimensions English		Focal length	Centre thickness	Edge thickness
UVFS	FS	A, mm	B, mm	A, mm	B, mm	F, mm	CT, mm	ET, mm
122-1105	122-3105	19.0	25.0	19.1	25.4	-25	3.0	8.0
122-1205	122-3205	25.0	50.0	25.4	50.8	-50	3.5	7.1
122-1210	122-3210	25.0	50.0	25.4	50.8	-75	3.3	5.6
122-1215	122-3215	25.0	50.0	25.4	50.8	-100	3.0	4.7
122-1220	122-3220	25.0	50.0	25.4	50.8	-150	3.0	4.1
122-1225	122-3225	25.0	50.0	25.4	50.8	-200	3.8	4.6
122-1230	122-3230	25.0	50.0	25.4	50.8	-300	3.5	4.1
122-1235	122-3235	25.0	50.0	25.4	50.8	-500	3.5	3.4

For metric dimensions please add to catalogue number code M, for English – code E.

Please contact **EKSMA** for other size, focus or precision requirements.

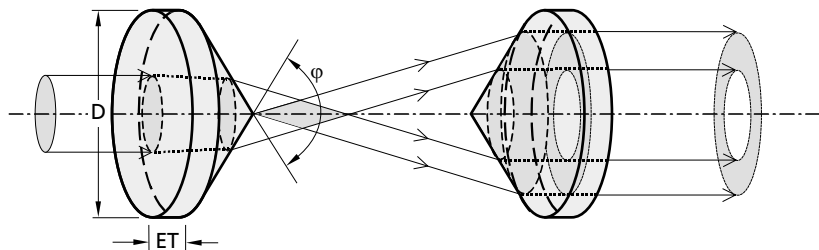
We can supply custom cutting, edging, coating or complete fabrication if required.

If you do not find what you need in our list of stock items, please send your specification or drawings for a custom quotation.

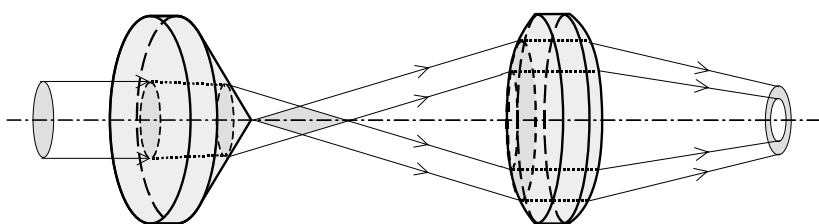
## CONICAL LENSES (AXICONS)

can be made in most optical materials

Two axicons together will produce a thick walled, hollow “pipe” of light.



An axicon with a spherical lens will produce an annular focus.



### SPECIFICATIONS

Material	BK7, FS
Surface quality	60-40 scratch & dig
Clear aperture	90% of the diameter
Diameter tolerance	+0.00, -0.12 mm
Thickness tolerance	±0.5 mm
Angle tolerance	±0.5°
Surface irregularity	1 λ @ 633 nm

Most of lenses are available from stock and can be shipped to you the same day when order is placed.

If you don't see exactly the lens that you need give us a call. We have a wide range of special focal lengths, diameters, and coatings.

Catalogue number		Diameter D, mm	Apex angle $\varphi$ , deg
BK7	FS		
<b>130-0260</b>	<b>130-3260</b>	25.4	160
<b>130-0265</b>	<b>130-3265</b>	25.4	165
<b>130-0270</b>	<b>130-3270</b>	25.4	170
<b>130-0360</b>	<b>130-3360</b>	30.0	160
<b>130-0365</b>	<b>130-3365</b>	30.0	165
<b>130-0370</b>	<b>130-3370</b>	30.0	170

Please contact **EKSMA** for other size, or precision requirements.

We can supply custom cutting, edging, coating or complete fabrication if required.

If you do not find what you need in our list of stock items, please send your specification or drawings for a custom quotation.

## ORDERING INFORMATION

1. COATINGS

2. MIRRORS

3. LENSES

4. WINDOWS

5. PRISMS

6. POLARISING OPTICS

7. UV &amp; IR OPTICS

**Prices**

All prices are net F.C.A. Vilnius, Lithuania and do not include any taxes. Shipping charges will be added to your invoice. Quantity discounts as well as research application discounts are available upon request.

**Delivery**

Most of standard products are stocked and shipped off-shelf after receipt of order. Large volume orders are delivered under mutually agreed terms. If not altered, shipping by DHL forwarder is assumed.

**Ordering**

Orders may be placed by mail, fax, or e-mail. Mail orders should be sent to:

**EKSPLA Ltd.**, Photonics Division

Mokslininku Str. 11

08412 Vilnius

LITHUANIA

For prompt ordering, please use fax or e-mail:

fax: +370.5.272 92 99,

e-mail: sales@eksma.com,

www.eksma.com.

**Payment**

Term of payment is 30 days net by bank wire transfer. Money orders, bank and company cheques – in this case please add 25.- USD (or equivalent in other currency) to lump sum of invoice to cover cashing charges.

**Certificate of Origin**

All items shown in this catalogue are of Lithuanian Origin and therefore import duty free when importing to EEC, EFTA and NAFTA countries.

**Satisfaction and Returns**

All standard products are covered by 30 days customer satisfaction warrantee. If for any reason buyer is not satisfied with purchased item, it may be returned by prepaid shipment for full credit.

**Warranty**

All products of EKSMA are guaranteed to be free from defects in material and workmanship for a period of one year after delivery. EKSMA does not assume liability from installation, labour or consequential damages.