

PLANO-CONCAVE LENSES

- 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

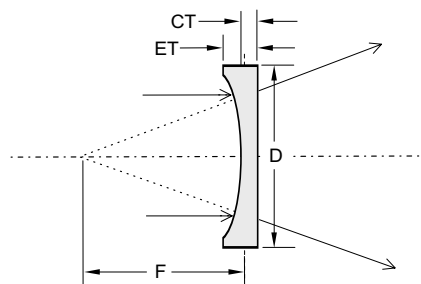
These lenses are thicker at the edge than in the centre and flat on one side. The plano-concave lenses are used to expand light beams or to increase focal lengths in optical systems. They are often employed for beam expansion of high peak power pulsed lasers. A beam incident on a concave surface will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

*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 the lenses are available from stock and can be shipped the same day an order is placed.



SPECIFICATIONS

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

BK7 Plano-Concave Lenses

Catalogue number BK7	Diameter D, mm		Focal length F, mm	Centre thickness CT, mm	Edge thickness ET, mm	Price, EUR
	Metric	English				
112-0105	12.5	12.7	-25.0	1.9	3.5	14
112-0109	12.5	12.7	-50.0	2.7	3.5	14
112-0115	12.5	12.7	-75.0	2.9	3.5	14
112-0117	12.5	12.7	-100.0	3.0	3.5	14
112-0121	12.5	12.7	-150.0	3.2	3.5	14
112-0123	12.5	12.7	-200.0	3.3	3.5	14
112-0125	12.5	12.7	-250.0	3.3	3.5	14
112-0209	25.0	25.4	-50.0	2.8	6.0	18
112-0215	25.0	25.4	-75.0	2.9	5.0	17
112-0219	25.0	25.4	-100.0	3.1	4.5	17
112-0227	25.0	25.4	-150.0	2.7	3.7	17
112-0231	25.0	25.4	-200.0	3.0	3.7	17
112-0235	25.0	25.4	-250.0	3.1	3.7	17
112-0239	25.0	25.4	-300.0	3.1	3.7	17
112-0243	25.0	25.4	-400.0	3.6	4.0	17
112-0247	25.0	25.4	-500.0	3.7	4.0	17
112-0259	25.0	25.4	-1000.0	3.8	4.0	17
112-0409	40.0	38.1	-100.0	2.0	7.0	28
112-0411	40.0	38.1	-150.0	3.3	6.0	28
112-0415	40.0	38.1	-200.0	4.1	6.0	28
112-0419	40.0	38.1	-300.0	4.7	6.0	28

Please add code M to the catalogue number for metric dimensions and code E for English.

UV FS & FS Plano-Concave Lenses

Catalogue number		Diameter D, mm		Focal length	Centre thickness	Edge thickness	Price, EUR
UV FS	FS	Metric	English	F, mm	CT, mm	ET, mm	UV FS / FS
112-1105	112-3105	12.5	12.7	-25.0	1.3	3.2	47 / 43
112-1109	112-3109	12.5	12.7	-50.0	2.1	3.0	47 / 43
112-1111	112-3111	12.5	12.7	-75.0	2.4	3.0	46 / 42
112-1115	112-3115	12.5	12.7	-100.0	2.6	3.0	46 / 42
112-1119	112-3119	12.5	12.7	-150.0	2.7	3.0	46 / 42
112-1123	112-3123	12.5	12.7	-200.0	2.8	3.0	46 / 42
112-1127	112-3127	12.5	12.7	-250.0	2.8	3.0	46 / 42
112-1205	112-3205	25.0	25.4	-50.0	1.9	5.6	70 / 65
112-1209	112-3209	25.0	25.4	-75.0	3.1	5.5	70 / 65
112-1211	112-3211	25.0	25.4	-100.0	3.0	4.7	70 / 65
112-1217	112-3217	25.0	25.4	-150.0	3.1	4.2	70 / 65
112-1219	112-3219	25.0	25.4	-200.0	3.1	4.0	69 / 64
112-1221	112-3221	25.0	25.4	-250.0	3.3	4.0	69 / 64
112-1223	112-3223	25.0	25.4	-300.0	3.4	4.0	69 / 64
112-1227	112-3227	25.0	25.4	-400.0	3.6	4.0	69 / 64
112-1233	112-3233	25.0	25.4	-500.0	3.7	4.0	69 / 64
112-1245	112-3245	25.0	25.4	-1000.0	3.8	4.0	69 / 64
112-1411	112-3411	40.0	38.1	-100.0	2.4	7.0	110 / 106
112-1415	112-3415	40.0	38.1	-150.0	3.0	6.0	110 / 106
112-1419	112-3419	40.0	38.1	-200.0	3.0	5.2	110 / 106
112-1427	112-3427	40.0	38.1	-300.0	4.3	5.7	110 / 106

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CaF₂ Plano-Concave Lenses

Catalogue number		Diameter D, mm		Focal length	Centre thickness	Edge thickness	Price, EUR
CaF ₂		Metric	English	F, mm	CT, mm	ET, mm	EUR
112-5105		12.5	12.7	-25.0	1.9	4.0	94
112-5109		12.5	12.7	-50.0	2.0	3.0	81
112-5111		12.5	12.7	-75.0	2.4	3.0	81
112-5115		12.5	12.7	-100.0	2.5	3.0	73
112-5120		12.5	12.7	-150.0	2.7	3.0	73
112-5125		12.5	12.7	-200.0	1.8	2.0	73
112-5130		12.5	12.7	-250.0	1.8	2.0	73
112-5135		12.5	12.7	-500.0	1.9	2.0	73
112-5205		25.0	25.4	-50.0	2.7	7.0	125
112-5209		25.0	25.4	-75.0	2.8	5.5	120
112-5211		25.0	25.4	-100.0	3.0	5.0	105
112-5217		25.0	25.4	-150.0	2.7	4.0	99
112-5219		25.0	25.4	-200.0	3.0	4.0	99
112-5223		25.0	25.4	-250.0	3.2	4.0	99
112-5230		25.0	25.4	-500.0	2.6	3.0	99
112-5235		25.0	25.4	-1000.0	2.8	3.0	99

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. Call us for other size, focus or precision requirements.

HOUSING ACCESSORIES

- Adjustable Lens Mounts 830-0030
See page 5.45

