

Lenses & Microscope Components

Lenses

Fused Silica Lenses	<i>LaserLenses</i>	32-33
Glass Lenses	<i>Plano-Convex Glass Lenses</i>	34-35
	<i>Plano-Concave Glass Lenses</i>	36-37
	<i>Equi-Convex Glass Lenses</i>	38
	<i>Equi-Concave Glass Lenses</i>	39
	<i>Aspheric Condenser Lenses</i>	40
CO₂ Laser Lenses	<i>Calcium Fluoride Lenses</i>	41

Microscope Components

Objectives	<i>M Plan Achromat Infinity-Corrected Objectives</i>	42
	<i>Laboratory Microscopes</i>	43
	<i>Reflecting Objectives</i>	44-45

Optics

Lenses & Microscope Components

Coatings

Mirrors, Beamsplitters

Prisms & Polarizers

Filters

Pinholes

Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro-positioners

Motorized Positioners

Optical Instruments

Microscopes

Light Sources

Light Measurement

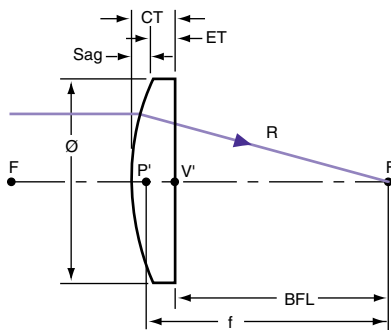


- Laser or laboratory quality polish
- Antireflection coatings available
- Thermally stable for most laser applications

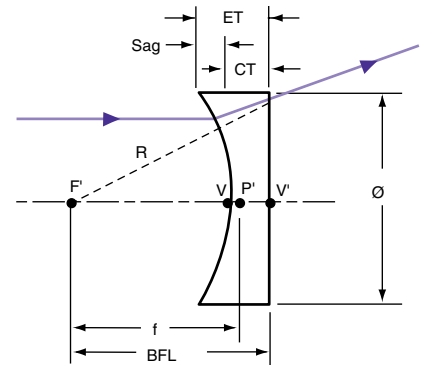
Ealing's new line of LaserLenses™ are ideal for most laser applications. They are made of UV grade fused silica which can withstand the thermal heating from a laser beam much better than glass. LaserLenses have excellent transmission down into the UV spectrum and have been precision polished to minimize scatter and wavefront distortion. For less rigorous applications, a range of laboratory quality lenses is also offered. For optimal transmission, please select an AR coating and append the coating suffix to the part number.

Specifications

Material: UV grade fused silica
Refractive Index: 1.458 (at 587.6 nm)
Abbe Number V_d : 67.8
Design Wavelength: 532 nm
Focal Length Tolerance: $\pm 0.5\%$
Diameter Tolerance: $+0/-0.127$ mm
Center Thickness Tolerance: ± 0.25 mm
Wedge Angle: < 3 arcmin
Surface Quality:
Laser Quality: 10-5
Laboratory Quality: 40-20
Surface Irregularity:
Laser Quality: $\lambda/10$ @633 nm
Uncoated



Plano-Convex Lens



Plano-Concave Lens

LaserLenses™ – Plano-Convex

Focal Length, f (mm)	Diameter, Ø (mm)	Edge Thickness, ET (mm)	Radius (mm)	Laser Quality		Laboratory Quality	
				Catalog Number	Price US	Catalog Number	Price US
22.1	12.7	2.0	10.17	43-9109	\$104.00	34-6718	\$85.00
33.1	12.7	2.0	15.26	43-9117	\$98.00	34-6080	\$78.00
55.2	12.7	2.0	25.43	43-9125	\$91.00	34-6098	\$68.00
82.8	12.7	2.0	38.14	43-9133	\$91.00	34-6106	\$68.00
110.4	12.7	2.0	50.85	43-9141	\$91.00	34-6148	\$68.00
220.8	12.7	2.0	101.71	43-9190	\$91.00	34-6999	\$68.00
33.1	25.4	2.0	15.26	43-9216	\$135.00	34-6734	\$109.00
55.2	25.4	2.0	25.43	43-9224	\$125.00	34-6759	\$98.00
82.8	25.4	2.0	38.14	43-9232	\$116.00	34-6114	\$88.00
110.4	25.4	2.0	50.85	43-9240	\$116.00	34-6783	\$88.00
165.6	25.4	2.0	76.28	43-9265	\$116.00	34-6841	\$88.00
220.8	25.4	2.0	101.71	43-9299	\$116.00	34-6932	\$88.00
1103.8	25.4	2.0	508.53	43-9521	\$116.00	-	-

Optics

Lenses & Microscope Components

Coatings

Mirrors, Beamsplitters

Prisms & Polarizers

Filters

Pinholes

Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro-positioners

Motorized Positioners

Optical Instruments

Microscopes

Light Sources

Light Measurement

- Optics**
- Lenses & Microscope Components
- Coatings
- Mirrors, Beamsplitters
- Prisms & Polarizers
- Filters
- Pinholes

- Opto-mechanics**
- Breadboards & Rails
- Mounting Hardware
- Mirror & Component Mounts
- Manual Micro-positioners
- Motorized Positioners

- Optical Instruments**
- Microscopes
- Light Sources
- Light Measurement

A range of antireflection coatings are also available. Simply select the appropriate coating for your laser and add the coating suffix to the LaserLens part number.

LaserLenses™ – Plano-Concave

Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness, CT (mm)	Radius (mm)	Laser Quality		Laboratory Quality	
				Catalog Number	Price US	Catalog Number	Price US
-22.1	12.7	2.0	10.17	43-9315	\$104.00	43-2930	\$85.00
-33.1	12.7	2.0	15.26	43-9323	\$98.00	43-2948	\$78.00
-55.2	12.7	2.0	25.43	43-9331	\$91.00	43-2955	\$68.00
-110.4	12.7	2.0	50.85	43-9356	\$91.00	43-2971	\$68.00
-220.8	12.7	2.0	101.71	43-9406	\$91.00	43-3029	\$68.00
-331.1	12.7	2.0	152.56	43-9414	\$91.00	43-3037	\$68.00
-55.2	25.4	2.0	25.43	43-9430	\$122.00	43-3052	\$98.00
-110.4	25.4	2.0	50.85	43-9455	\$116.00	43-3078	\$88.00
-220.8	25.4	2.0	101.71	43-9505	\$116.00	43-3128	\$88.00
-331.1	25.4	2.0	152.56	43-9513	\$116.00	43-3136	\$88.00

Plano-Convex Glass Lenses



- *Ideal for infinite conjugate use*
- *Wide range of focal lengths*

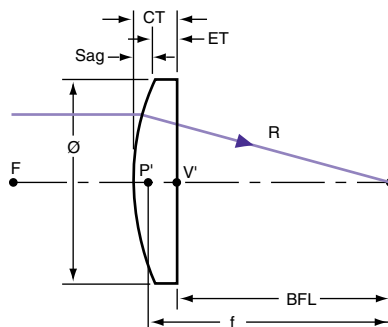
These lenses have positive focal lengths. They work best when producing real images at near infinite conjugates or where one of the conjugates is virtual. They outperform the equivalent equi-convex lens if the magnification lies in the range:

$$m < -5 \text{ or } m > -0.2$$

The optimum orientation for most application is with the curved surface towards the long conjugate.

Specifications

Material: BK7 glass
 Refractive Index: 1.5168 (at 587.6 nm)
 Abbe Number V_d : 64.17
 Focal Length Tolerance: $\pm 2\%$
 Diameter Tolerance: $+0 -0.2$ mm
 Center Thickness Tolerance: ± 0.2 mm
 Wedge Angle: < 5 arcmin
 Surface Quality: 40-20
 Uncoated



Plano-Convex Glass Lenses

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness, CT (mm)	Edge Thickness, ET (mm)	Principal Point, V'P' (mm)	Sag (mm)	Price US
43-0009	15.0	12.5	4.7	1.5	-3.1	3.2	\$24.00
43-0017	20.0	12.5	3.6	1.5	-2.4	2.1	\$24.00
43-0025	25.0	12.5	3.1	1.5	-2.0	1.6	\$24.00
43-0033	30.0	12.5	2.8	1.5	-1.8	1.3	\$24.00
43-0041	35.0	12.5	2.6	1.5	-1.7	1.1	\$24.00
43-0058	40.0	12.5	2.5	1.5	-1.6	1.0	\$24.00
43-0066	50.0	12.5	2.3	1.5	-1.5	0.8	\$24.00
43-0074	60.0	12.5	2.1	1.5	-1.4	0.6	\$24.00
43-0082	75.0	12.5	2.0	1.5	-1.3	0.5	\$24.00
43-0090	100.0	12.5	1.9	1.5	-1.3	0.4	\$24.00
43-0108	125.0	12.5	1.8	1.5	-1.2	0.3	\$24.00
43-0116	150.0	12.5	1.8	1.5	-1.2	0.3	\$24.00
43-0124	200.0	12.5	1.7	1.5	-1.1	0.2	\$24.00

Optics

Lenses & Microscope Components

Coatings

Mirrors, Beamsplitters

Prisms & Polarizers

Filters

Pinholes

Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro-positioners

Motorized Positioners

Optical Instruments

Microscopes

Light Sources

Light Measurement

- Optics
- Lenses & Microscope Components
- Coatings
- Mirrors, Beamsplitters
- Prisms & Polarizers
- Filters
- Pinholes

Fixed Lens Mounts



Fixed lens mounts are also available.

- Opto-mechanics
- Breadboards & Rails
- Mounting Hardware
- Mirror & Component Mounts
- Manual Micro-positioners
- Motorized Positioners

Plano-Convex Glass Lenses (continued)

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness, CT (mm)	Edge Thickness, ET (mm)	Principal Point, V'P' (mm)	Sag (mm)	Price US
43-0249	30.0	25.0	7.8	1.5	-5.1	6.3	\$26.00
43-0256	40.0	25.0	5.7	1.5	-3.8	4.2	\$26.00
43-0264	50.0	25.0	4.7	1.5	-3.1	3.2	\$26.00
43-0280	75.0	25.0	3.6	1.5	-2.4	2.1	\$26.00
43-0298	100.0	25.0	3.0	1.5	-2.0	1.5	\$26.00
43-0306	125.0	25.0	2.7	1.5	-1.8	1.2	\$26.00
43-0314	150.0	25.0	2.5	1.5	-1.6	1.0	\$26.00
43-0322	200.0	25.0	2.3	1.5	-1.5	0.8	\$26.00
43-0330	250.0	25.0	2.1	1.5	-1.4	0.6	\$26.00
43-0348	300.0	25.0	2.0	1.5	-1.3	0.5	\$26.00
43-0363	500.0	25.0	1.8	1.5	-1.2	0.3	\$26.00
43-0462	75.0	50.0	11.6	2.5	-7.6	9.1	\$38.00
43-0470	100.0	50.0	11.0	2.5	-5.9	6.4	\$38.00
43-0488	125.0	50.0	7.5	2.5	-4.9	5.0	\$38.00
43-0496	150.0	50.0	9.0	2.5	-4.4	4.1	\$38.00
43-0504	200.0	50.0	7.0	2.5	-3.7	3.1	\$38.00
43-0520	300.0	50.0	6.9	2.5	-3.0	2.0	\$38.00
43-0538	400.0	50.0	6.0	2.5	-2.6	1.5	\$38.00
43-0546	500.0	50.0	6.7	2.5	-2.4	1.2	\$38.00
43-0553	750.0	50.0	3.3	2.5	-2.2	0.8	\$38.00
43-0561	1000.0	50.0	3.1	2.5	-2.0	0.6	\$38.00

- Optical Instruments
- Light Sources
- Light Measurement
- Diode Laser Modules

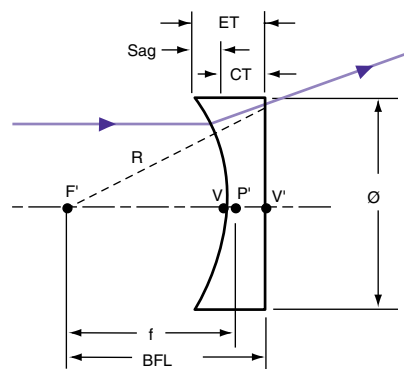
Plano-Concave Glass Lenses

- *Ideal for infinite conjugate use*
- *Wide range of focal lengths available*

These lenses have negative focal lengths. They are a more suitable choice than the equivalent equi-concave lens if the magnification lies in the range:

$$m < -5 \text{ or } m > 0.2$$

The optimum orientation for most applications is with the curved surface towards the long conjugate.



Specifications

Material: BK7 glass
 Refractive Index: 1.5168 (at 587.6 nm)
 Abbe Number V_d : 64.17
 Focal Length Tolerance: $\pm 2\%$
 Diameter Tolerance: $+0 -0.2$ mm
 Center Thickness Tolerance: ± 0.2 mm
 Wedge Angle: < 5 arcmin
 Surface Quality: 40-20
 Uncoated

Plano-Concave Glass Lenses

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness, CT (mm)	Edge Thickness, ET (mm)	Principal Point V'P' (mm)	Sag (mm)	Price US
43-1544	-15.0	12.5	1.5	4.7	-1.0	3.2	\$22.00
43-1551	-20.0	12.5	1.5	3.6	-1.0	2.1	\$22.00
43-1569	-25.0	12.5	1.5	3.1	-1.0	1.6	\$22.00
43-1577	-30.0	12.5	1.5	2.8	-1.0	1.3	\$22.00
43-1585	-35.0	12.5	1.5	2.6	-1.0	1.1	\$22.00
43-1593	-40.0	12.5	1.5	2.5	-1.0	1.0	\$22.00
43-1601	-50.0	12.5	1.5	2.3	-1.0	0.8	\$22.00
43-1619	-60.0	12.5	1.5	2.1	-1.0	0.6	\$22.00
43-1627	-75.0	12.5	1.5	2.0	-1.0	0.5	\$22.00
43-1635	-100.0	12.5	1.5	1.9	-1.0	0.4	\$22.00
43-1650	-150.0	12.5	1.5	1.8	-1.0	0.3	\$22.00
43-1676	-250.0	12.5	1.5	1.7	-1.0	0.2	\$22.00

Optics

Lenses & Microscope Components

Coatings

Mirrors, Beamsplitters

Prisms & Polarizers

Filters

Pinholes

Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro-positioners

Motorized Positioners

Optical Instruments

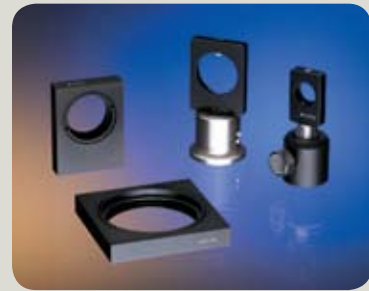
Microscopes

Light Sources

Light Measurement

- Optics
- Lenses & Microscope Components
- Coatings
- Mirrors, Beamsplitters
- Prisms & Polarizers
- Filters
- Pinholes

Fixed Lens Holders



Lens holders are also available.

- Opto-mechanics
- Breadboards & Rails
- Mounting Hardware
- Mirror & Component Mounts
- Manual Micro-positioners
- Motorized Positioners

Plano-Concave Glass Lenses (continued)

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness, CT (mm)	Edge Thickness, ET (mm)	Principal Point V'P' (mm)	Sag (mm)	Price US
43-1783	-30.0	25.0	1.5	7.8	-1.0	6.3	\$22.00
43-1791	-40.0	25.0	1.5	5.7	-1.0	4.2	\$22.00
43-1809	-50.0	25.0	1.5	4.7	-1.0	3.2	\$22.00
43-1825	-75.0	25.0	1.5	3.6	-1.0	2.1	\$22.00
43-1841	-125.0	25.0	1.5	2.7	-1.0	1.2	\$22.00
43-1858	-150.0	25.0	1.5	2.5	-1.0	1.0	\$22.00
43-1874	-250.0	25.0	1.5	2.1	-1.0	0.6	\$22.00
43-1882	-300.0	25.0	1.5	2.0	-1.0	0.5	\$22.00
43-1890	-400.0	25.0	1.5	1.9	-1.0	0.4	\$22.00
43-1908	-500.0	25.0	1.5	1.8	-1.0	0.3	\$22.00
43-2005	-75.0	50.0	2.5	11.6	-1.6	9.1	\$38.00
43-2013	-100.0	50.0	2.5	8.9	-1.6	6.4	\$38.00
43-2021	-125.0	50.0	2.5	7.5	-1.6	5.0	\$38.00
43-2039	-150.0	50.0	2.5	6.6	-1.6	4.1	\$38.00
43-2054	-250.0	50.0	2.5	4.9	-1.6	2.4	\$38.00
43-2062	-300.0	50.0	2.5	4.5	-1.6	2.0	\$38.00
43-2088	-500.0	50.0	2.5	3.7	-1.6	1.2	\$38.00
43-2096	-750.0	50.0	2.5	3.3	-1.6	0.8	\$38.00
43-2104	-1000.0	50.0	2.5	3.1	-1.6	0.6	\$38.00

- Optical Instruments
- Microscopes
- Light Sources
- Light Measurement

Equi-Convex Glass Lenses

- Ideal for 1:1 imaging
- Wide range of focal lengths available

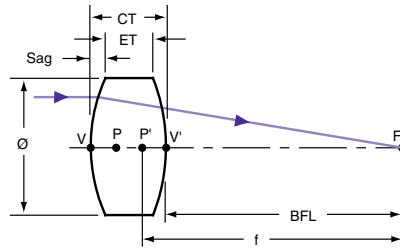
These lenses have positive focal lengths and are the optimum shape for producing real images at 1:1 magnification. In a single lens application you should consider using them in preference to a single plano-convex lens if the magnification lies in the region:

$$-5 < m < -0.2$$



Specifications

Material: BK7 glass
 Refractive Index: 1.5168 (at 587.6 nm)
 Abbe Number V_d : 64.17
 Focal Length Tolerance: $\pm 2\%$
 Diameter Tolerance: $+0 -0.2$ mm
 Center Thickness Tolerance: ± 0.2 mm
 Wedge Angle: < 5 arcmin
 Surface Quality: 40-20
 Uncoated



Fixed Lens Mounts



Fixed lens mounts are also available.

Equi-Convex Glass Lenses

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness, CT (mm)	Edge Thickness, ET (mm)	Principal Point V'P' (mm)	Sag (mm)	Price US
43-0744	15.0	12.5	4.3	1.5	-1.5	1.4	\$25.00
43-0769	25.0	12.5	3.1	1.5	-1.0	0.8	\$25.00
43-0777	30.0	12.5	2.8	1.5	-0.9	0.6	\$25.00
43-0819	60.0	12.5	2.1	1.5	-0.7	0.3	\$25.00
43-0835	100.0	12.5	1.9	1.5	-0.6	0.2	\$25.00
43-0876	250.0	12.5	1.7	1.5	-0.6	0.1	\$25.00
43-0991	25.0	25.0	8.4	1.5	-2.9	3.5	\$25.00
43-1007	30.0	25.0	7.0	1.5	-2.4	2.8	\$25.00
43-1015	40.0	25.0	5.5	1.5	-1.9	2.0	\$25.00
43-1023	50.0	25.0	4.6	1.5	-1.5	1.6	\$25.00
43-1031	60.0	25.0	4.1	1.5	-1.4	1.3	\$25.00
43-1049	75.0	25.0	3.5	1.5	-1.2	1.0	\$25.00
43-1056	100.0	25.0	3.0	1.5	-1.0	0.8	\$25.00
43-1064	125.0	25.0	2.7	1.5	-0.9	0.6	\$25.00
43-1072	150.0	25.0	2.5	1.5	-0.8	0.5	\$25.00
43-1080	200.0	25.0	2.3	1.5	-0.8	0.4	\$25.00
43-1098	250.0	25.0	2.1	1.5	-0.7	0.3	\$25.00
43-1106	300.0	25.0	2.0	1.5	-0.7	0.3	\$25.00
43-1114	400.0	25.0	1.9	1.5	-0.6	0.2	\$25.00
43-1122	500.0	25.0	1.8	1.5	-0.6	0.2	\$25.00
43-1239	50.0	50.0	16.3	2.5	-5.7	6.9	\$44.00
43-1247	75.0	50.0	11.0	2.5	-3.7	4.3	\$44.00
43-1254	100.0	50.0	8.7	2.5	-2.9	3.1	\$44.00
43-1270	150.0	50.0	6.6	2.5	-2.2	2.0	\$44.00
43-1320	500.0	50.0	3.7	2.5	-1.2	0.6	\$44.00
43-1346	1000.0	50.0	3.1	2.5	-1.0	0.3	\$44.00

Equi-Concave Glass Lenses

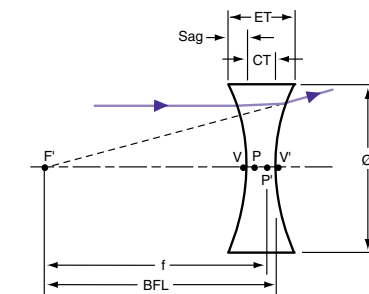
- Useful for beam divergence
- Wide range of focal lengths available

These lenses have negative focal lengths. In a single lens application you should consider using them in preference to a single plano-concave lens if the magnification lies in the region:

$$-5 < m < -0.2$$

Specifications

Material: BK7 glass
 Refractive Index: 1.5168 (at 587.6 nm)
 Abbe Number V_d : 64.17
 Focal Length Tolerance: $\pm 2\%$
 Diameter Tolerance: $+0 -0.2$ mm
 Center Thickness Tolerance: ± 0.2 mm
 Wedge Angle: < 5 arcmin
 Surface Quality: 40-20
 Uncoated



Fixed Lens Holders



Lens holders are also available.

Equi-Concave Glass Lenses

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness, CT (mm)	Edge Thickness, ET (mm)	Principal Point, V'P' (mm)	Sag (mm)	Price US
43-2112	-15.0	12.5	1.5	4.1	-0.5	1.3	\$28.00
43-2120	-20.0	12.5	1.5	3.5	-0.5	1.0	\$28.00
43-2138	-25.0	12.5	1.5	3.1	-0.5	0.8	\$28.00
43-2146	-30.0	12.5	1.5	2.7	-0.5	0.6	\$28.00
43-2153	-35.0	12.5	1.5	2.5	-0.5	0.5	\$28.00
43-2161	-40.0	12.5	1.5	2.5	-0.5	0.5	\$28.00
43-2179	-50.0	12.5	1.5	2.3	-0.5	0.4	\$28.00
43-2187	-60.0	12.5	1.5	2.1	-0.5	0.3	\$28.00
43-2195	-75.0	12.5	1.5	2.1	-0.5	0.3	\$28.00
43-2369	-25.0	25.0	1.5	7.9	-0.5	3.2	\$26.00
43-2377	-30.0	25.0	1.5	6.7	-0.5	2.6	\$26.00
43-2385	-40.0	25.0	1.5	5.3	-0.5	1.9	\$26.00
43-2393	-50.0	25.0	1.5	4.5	-0.5	1.5	\$26.00
43-2419	-75.0	25.0	1.5	3.5	-0.5	1.0	\$26.00
43-2427	-100.0	25.0	1.5	3.1	-0.5	0.8	\$26.00
43-2435	-125.0	25.0	1.5	2.7	-0.5	0.6	\$26.00
43-2443	-150.0	25.0	1.5	2.5	-0.5	0.5	\$26.00
43-2450	-200.0	25.0	1.5	2.3	-0.5	0.4	\$26.00
43-2492	-500.0	25.0	1.5	1.9	-0.5	0.2	\$26.00
43-2609	-50.0	50.0	2.5	15.3	-0.8	6.4	\$44.00
43-2617	-75.0	50.0	2.5	10.7	-0.8	4.1	\$44.00
43-2625	-100.0	50.0	2.5	8.7	-0.8	3.1	\$44.00
43-2633	-125.0	50.0	2.5	7.3	-0.8	2.4	\$44.00
43-2666	-250.0	50.0	2.5	4.9	-0.8	1.2	\$44.00
43-2674	-300.0	50.0	2.5	4.5	-0.8	1.0	\$44.00
43-2716	-1000.0	50.0	2.5	3.1	-0.8	0.3	\$44.00

Optics

Lenses & Microscope Components

Coatings

Mirrors, Beamsplitters

Prisms & Polarizers

Filters

Pinholes

Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro-positioners

Motorized Positioners

Optical Instruments

Microscopes

Light Sources

Light Measurement

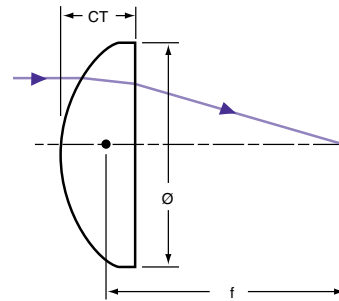
Aspheric Condenser Lenses

- *Ideal for broadband illumination applications*
- *Low f-number with minimal spherical aberrations*

Aspheric lenses have at least one surface that is not a true sphere. The aspheric profile used is frequently a conic surface of revolution about the lens axis, matched in design to the shape of the second surface. The shape of this lens produces a dramatic reduction of the spherical aberration, even for very low F-numbers.

The lenses listed here have a molded aspheric surface which is firepolished.

These lenses are mainly used in condenser or illumination applications. They are also used where a high light gathering power is needed such as for focusing onto detectors or fibers.



Specifications

Material: B270 optical crown glass
Focal Length Tolerance: $\pm 7\%$
Diameter Tolerance: $+0 -0.4$ mm
Center Thickness Tolerance: ± 0.5 mm
Surface Quality: Fire polished, 80-50
Uncoated

Condenser Grade Aspheric Lenses

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Second Surface Shape*	CT (mm)	F-Number	Price US
34-2006	8.5	12.0	CX	5.5	0.71	\$17.00
34-2014	10.5	12.0	P	3.5	0.88	\$15.00
34-2030	12.0	15.0	P	5.5	0.80	\$19.00
34-2055	12.0	18.0	CX	8.8	0.67	\$24.00
34-2063	15.5	18.0	P	7.0	0.86	\$19.00
34-2071	17.0	19.0	P	7.0	0.89	\$19.00
34-2113	20.0	25.0	P	7.5	0.80	\$17.00
34-2154	23.5	30.0	P	11.0	0.78	\$20.00
34-2162	26.5	30.0	P	11.0	0.88	\$20.00
34-2204	34.5	38.0	P	12.0	0.91	\$34.00
34-6338	25.0	40.0	P	16.5	0.65	\$60.00
34-2212	29.5	40.0	CX	15.5	0.74	\$30.00
34-2246	35.0	50.0	P	20.6	0.70	\$40.00
34-2261	39.0	50.0	P	22.5	0.78	\$39.00
34-2287	49.0	50.0	CX	14.3	0.98	\$80.00
34-2352	53.0	65.0	P	23.5	0.82	\$90.00
34-2378	50.0	75.0	P	29.1	0.67	\$100.00

* Note: P=Plano, CX=Convex

Optics

Lenses & Microscope Components

Coatings

Mirrors, Beamsplitters

Prisms & Polarizers

Filters

Pinholes

Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro-positioners

Motorized Positioners

Optical Instruments

Microscopes

Light Sources

Light Measurement

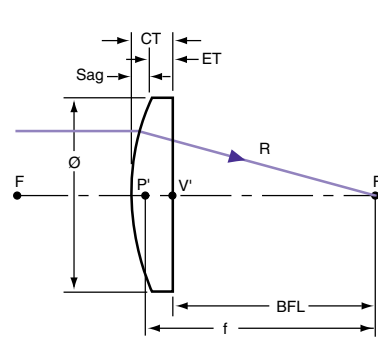
Calcium Fluoride Lenses

- **Transmission from 150 nm-7 μm**

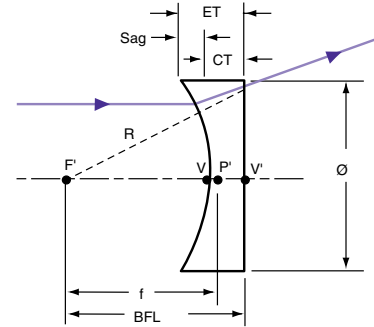
These lenses are available in plano-convex and plano-concave forms. Calcium fluoride exhibits excellent transmission from 150 nm in the ultraviolet through 7 μm in the infrared. Because of the low refractive index of calcium fluoride, in most cases an antireflection coating is not required.

Specifications

Material: Optical grade calcium fluoride
Refractive index: 1.399 (at 5.0 μm)
Abbe Number V_d : 94.9
Focal Length Tolerance: ±2%
Diameter Tolerance: +0.0 -0.2 mm
Center Thickness Tolerance: ±0.25 mm
Wedge Angle: <5 arcmin
Surface Quality: 60-40
Uncoated



Plano-Convex Lens



Plano-Concave Lens

Plano-Convex Calcium Fluoride Lenses

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness CT (mm)	Edge Thickness ET (mm)	Principal Point V'P' (mm)	Price US
34-3483	50.0	25.4	6.6	2.0	-4.7	\$205.00
34-3491	63.0	25.4	5.4	2.0	-3.9	\$205.00
34-3517	75.0	25.4	4.8	2.0	-3.5	\$160.00
34-3533	100.0	25.4	4.1	2.0	-2.9	\$109.00
34-4929	150.0	25.4	3.4	2.0	-2.4	\$109.00
34-4960	200.0	25.4	3.0	2.0	-2.2	\$109.00
34-4994	250.0	25.4	2.8	2.0	-2.0	\$109.00
34-5017	500.0	25.4	2.4	2.0	-1.7	\$109.00
34-3558	100.0	50.8	11.6	2.5	-8.3	\$452.00
34-4945	150.0	50.8	8.2	2.5	-5.8	\$292.00
34-4978	200.0	50.8	6.6	2.5	-4.8	\$226.00
34-5009	250.0	50.8	5.8	2.5	-4.1	\$177.00
34-5025	500.0	50.8	4.1	2.5	-2.9	\$177.00

Plano-Concave Calcium Fluoride Lenses

Catalog Number	Focal Length, f (mm)	Diameter, Ø (mm)	Center Thickness CT (mm)	Edge Thickness ET (mm)	Principal Point V'P' (mm)	Price US
34-5041	-50.0	25.4	2.5	7.1	-1.8	\$242.00
34-5058	-75.0	25.4	2.5	5.3	-1.8	\$215.00
34-5066	-100.0	25.4	2.5	4.6	-1.8	\$161.00
34-5082	-150.0	50.8	3.0	8.7	-2.1	\$309.00
34-5090	-250.0	50.8	3.0	6.3	-2.1	\$309.00

Optics

Lenses & Microscope Components

Coatings

Mirrors, Beamsplitters

Prisms & Polarizers

Filters

Pinholes

Opto-mechanics

Breadboards & Rails

Mounting Hardware

Mirror & Component Mounts

Manual Micro-positioners

Motorized Positioners

Optical Instruments

Microscopes

Light Sources

Light Measurement