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# Calcium Fluoride: Meniscus Lenses

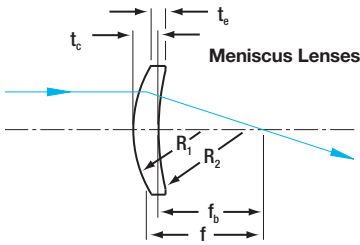


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## Specifications

- **Material:** Vacuum-Grade CaF<sub>2</sub>
- **Wavelength Range:** 180 nm – 8.0 μm, Uncoated
- **Diameter Tolerance:** +0.00/-0.10 mm
- **Focal Length Tolerance:** ±1%
- **Surface Quality:** 40-20 Scratch-Dig
- **Centration:** ≤3 arcmin
- **Clear Aperture:** ≥90% of Diameter
- **Design Wavelength:** 4 μm

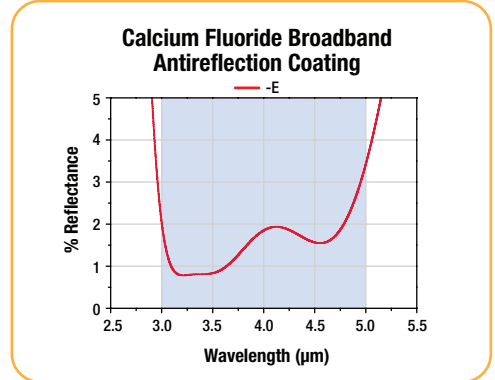
These CaF<sub>2</sub> Meniscus lenses have been designed to pair with CaF<sub>2</sub> Plano-Convex lenses (see page 672) of the same focal length to minimize the spherical aberration of the system and alter the focal length. To capitalize on the IR spectral performance of CaF<sub>2</sub>, these lenses have been designed at 4 μm.



Please refer to our website for complete models and drawings.



The Positive Meniscus lens is used to decrease the focal length of the other lens while maintaining the angular resolution of the optical assembly and to achieve a tighter spot size. Negative Meniscus lenses are often used to increase the focal length, and therefore decrease the numerical aperture (NA), of an optical assembly. This use is common in beam expansion applications. CaF<sub>2</sub> is useful for applications ranging from the UV to the IR.



Please contact your local Thorlabs office for custom optical scans.

### Broadband IR AR Coatings, R<sub>avg</sub> < 2 %

To order the lens with a standard broadband AR Coating for the 3 to 5 μm range, add the coating code to the Item #, and then add the coating cost to the lens price.

COATING	WAVELENGTH	\$	£	€	RMB
-E	3 – 5 μm	\$ 70.00	£ 50.40	€ 60,90	¥ 557.90

**Example:** LE5838 coated with a 3 – 5 μm Broadband AR Coating is LE5838-E, and the cost is \$210.00 + \$70.00 = \$280.00.

## Calcium Fluoride: Positive Meniscus Lenses

ITEM #	DIA (mm)	f (mm)	PRICE				R <sub>1</sub> (mm)	R <sub>2</sub> (mm)	t <sub>c</sub> (mm)	t <sub>c</sub> * (mm)	f <sub>b</sub> (mm)	SUGGESTED MOUNT**
			\$	£	€	RMB						
LE5838	12.7	20.0	\$ 210.00	£ 151.20	€ 182.70	¥ 1,673.70	7.5	72.4	4.7	1.4	16.3	LMR05 See Page 268
LE5243	12.7	50.0	\$ 210.00	£ 151.20	€ 182.70	¥ 1,673.70	15.0	52.8	3.0	2.0	47.1	
LE5234	12.7	80.0	\$ 210.00	£ 151.20	€ 182.70	¥ 1,673.70	20.0	49.1	3.0	2.4	76.5	
LE5183	25.4	40.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	15.0	146.9	8.9	2.4	33.1	LMR1 See Page 268
LE5801	25.4	50.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	15.5	55.2	7.1	2.0	43.3	
LE5802	25.4	75.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	15.5	28.0	5.6	2.0	67.2	
LE5803	25.4	100.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	20.0	36.8	4.0	1.7	94.2	
LE5382	25.4	150.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	35.0	78.6	4.0	2.7	145.0	
LE5414	25.4	200.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	40.0	75.9	4.0	3.0	194.2	
LE5990	25.4	500.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	125.0	317.8	4.0	3.6	495.4	
LE5656	25.4	750.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	150.0	290.8	4.0	3.7	744.2	
LE5714	25.4	1000.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	250.0	638.5	4.0	3.8	995.4	

\*Edge Thickness given before 0.2 mm at 45° typical Chamfer

\*\*See the Lens Mount Section, Starting on Page 267.

## Calcium Fluoride: Negative Meniscus Lenses

ITEM #	DIA (mm)	f (mm)	PRICE				R <sub>1</sub> (mm)	R <sub>2</sub> (mm)	t <sub>c</sub> (mm)	t <sub>c</sub> * (mm)	f <sub>b</sub> (mm)	SUGGESTED MOUNT**
			\$	£	€	RMB						
LF5067	12.7	-20.0	\$ 210.00	£ 151.20	€ 182.70	¥ 1,673.70	95.6	7.5	2.0	5.3	-19.9	LMR05 See Page 268
LF5847	12.7	-50.0	\$ 210.00	£ 151.20	€ 182.70	¥ 1,673.70	20.4	9.8	3.0	4.3	-47.9	
LF5154	12.7	-80.0	\$ 210.00	£ 151.20	€ 182.70	¥ 1,673.70	33.7	16.2	3.0	3.7	-77.9	
LF5469	25.4	-40.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	308.3	15.5	4.0	10.4	-39.8	LMR05 and SM05L03 See Pages 268 & 128
LF5414	25.4	-50.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	68.5	15.5	4.0	9.4	-49.2	
LF5895	25.4	-75.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	30.8	14.8	4.0	8.5	-72.2	
LF5515	25.4	-100.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	42.0	20.2	4.0	6.5	-97.2	
LF5175	25.4	-150.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	64.1	30.8	4.0	5.5	-147.3	
LF5961	25.4	-200.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	86.2	41.4	4.0	5.1	-197.3	
LF5048	25.4	-500.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	218.3	105.1	4.0	4.4	-497.3	
LF5807	25.4	-750.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	328.2	158.1	4.0	4.3	-747.3	
LF5394	25.4	-1000.0	\$ 280.00	£ 201.60	€ 243.60	¥ 2,231.60	438.1	211.1	4.0	4.2	-997.3	

\*Edge Thickness given before 0.2 mm at 45° typical Chamfer

\*\*See the Lens Mount Section, Starting on Page 267.