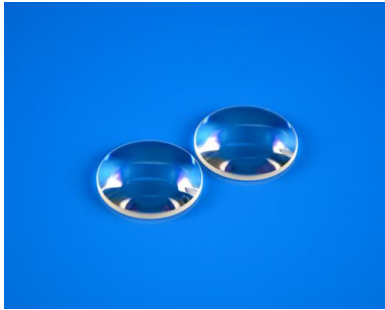


BaF2 Lenses



Features:

- Wide wavelength range of 0.2-11 μm
- Suitable for MWIR (3-5 μm) thermal cameras

Descriptions:

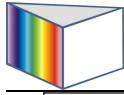
Barium Fluoride or BaF2 crystals could be used in the ultraviolet, visible and infrared spectral regions. BaF2 has a good transmission above 90% between 0.25 and 9.5 μm . Barium Fluoride is half as hard as Calcium Fluoride and also more susceptible to thermal shock. However, it is commonly used in cryogenically cooled thermal imaging systems, Hangzhou Shalom EO offer the BaF2 lenses used in MWIR (3-5 micro) thermal imaging applications.

Specifications:

Materials	BaF2 crystals	Diameter Range	~200mm
Diameter Tolerance	+0.0/-0.2mm	Thickness Tolerance	+/-0.1mm
Surface Quality	60/40 S/D	Frings (N)	3
Irregularity (delta N)	1	Centration	3'
Chamfer	0.1-0.3mmx45 degree	Coatings	AR/AR@3-5micro

Physical and Optical Properties:

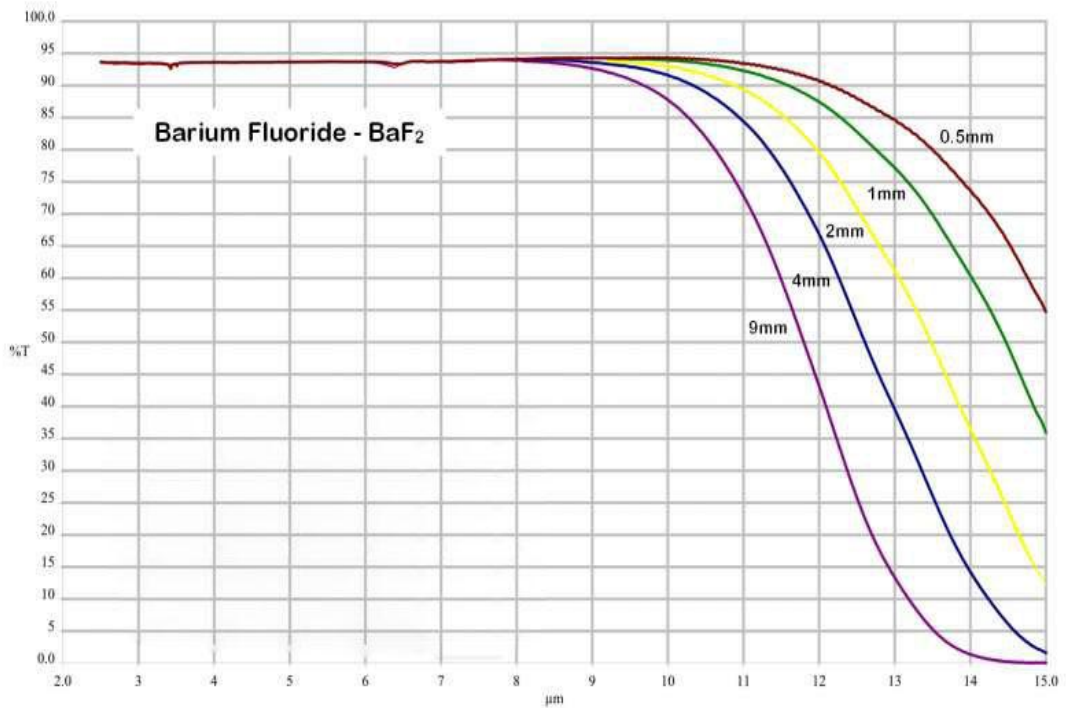
Transmission Range	0.15 to 12 μm	Refractive Index	1.45 at 5 μm (1)
Reflection Loss	6.5% at 5 μm (2 surfaces)	Absorption Coefficient	3.2 x 10 ⁻⁴ cm ⁻¹ @ 6 μm
Reststrahlen Peak	47 μm	dn/dT	-15.2 x 10 ⁻⁶ /°C (2)
dn/d μ = 0	1.95 μm	Density	4.89 g/cc
Melting Point	1386°C	Thermal Conductivity	11.72 W m ⁻¹ K ⁻¹ @ 286 K
Thermal Expansion	18.1 x 10 ⁻⁶ /°C @ 273 K	Hardness	Knoop 82 with 500g indenter (4)
Specific Heat Capacity	410 J Kg ⁻¹ K ⁻¹ (3)	Dielectric Constant	7.33 at 1 MHz
Youngs Modulus (E)	53.07 GPa (3)	Shear Modulus (G)	25.4 GPa (3)
Bulk Modulus (K)	56.4 GPa	Elastic Coefficients	C11 = 89.2 C12 = 40.0 C44 = 25.4 (2)
Apparent Elastic Limit	26.9 MPa (300psi) (4)	Poisson Ratio	0.343
Solubility	0.17g/100g water at 23°C	Molecular Weight	175.36



Class/Structure	Cubic CaF ₂ , Fm3m, (111) cleavage
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Technical images:

Transmission curve of the BaF₂ substrates of different thickness



Related products:

- 1) Infrared lenses -> Silicon lenses
- 2) Infrared lenses -> CaF₂ lenses
- 3) Infrared windows -> BaF₂ windows