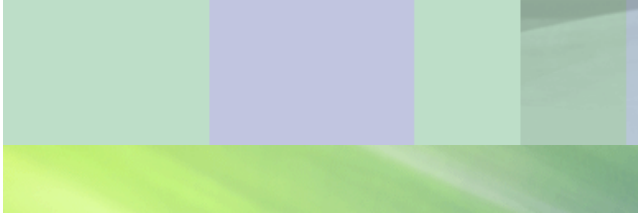
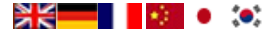


◇ Sapphire ◇ ZnSe ◇ ZnS ◇ CdSe ◇ CdS ◇ ZnTe ◇ CVD ZnSe ◇ CaF₂ ◇ Bi₂Te₃ ◇ Bi₂Se₃ ◇ CdWO₄ ◇ NaBi(WO₄)₂
 ◇ Langasite & Langatate ◇ LiNbO₃ ◇ Fused silica ◇ Silicon ◇ GaSe ◇ PbS, PbSe, PbTe ◇ KDP

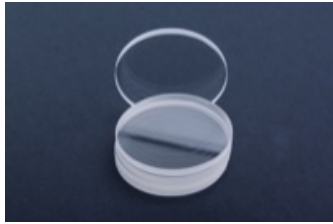


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CaF₂ (Calcium Fluoride)



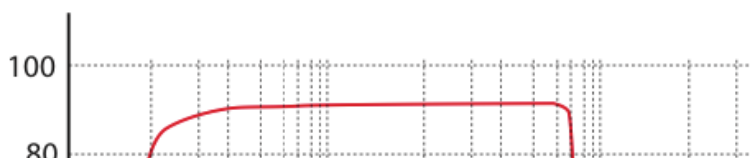
Calcium fluoride is a superb optical material. It is often chosen by laser optics manufacturers for its wide transmission range, low absorption and low refraction. Compared to other fluorides, CaF₂ is much more resistant to moisture and to thermal shock. CaF₂ optics are commonly used in imaging, thermal imaging, astronomy, microlithography and high-power lasers.

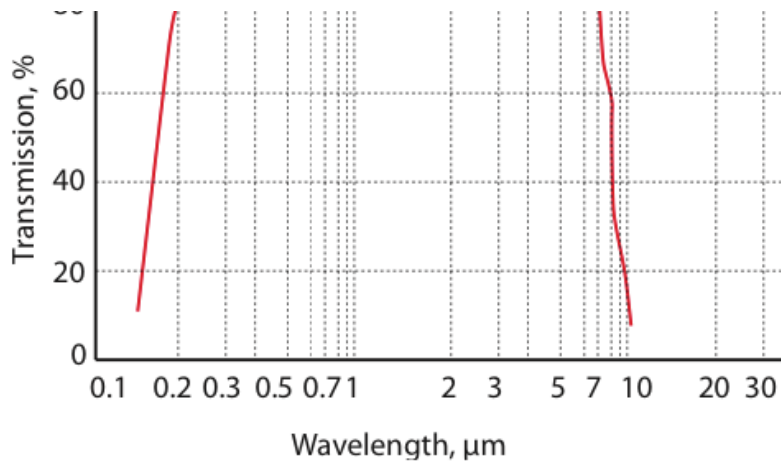
ENQUIRY FORM

Basic properties

Syngony	Cubic
Symmetry class	M3m
Lattice constants	A=5.462 c=a
Cleavability	(111)
Refractive index at Nd	1.4349
Refractive index at Nf -Nc	0.0043
Refractive index at N10.6	1.2996
Reflection loss	5.5 %
Transmission range	0.15-9 μm
Density	3.18 g/ cm ³
Melting point	1360 ° C
Thermal conductivity index	9.71 Bт/(м K)
Thermal expansion index	18.5 x 10 ⁻⁶ /K
Knoop hardness	158.3 kg/mm ² (100)
Specific heat	854 J/(kg K)
Dielectric constant (f=1 MHz)	6.76
Young's Modulus, E	75.8 GPa
Shear modulus, G	33.77 GPa
Modulus of volume elasticity, K	82.71 GPa
Elastic strength	36.54 MPa
Poisson ratio	0.26
Solubility	0.0017 g / 100 g of water at T= 20 °C
Molecular weight	78.08

CaF₂ Transmission





CaF₂ Refractive Indices

λ, μm	Refractive index
0.19	1.51
0.21	1.49
0.25	1.47
0.33	1.45
0.41	1.44
0.88	1.43
2.65	1.42
3.90	1.41
5.00	1.40
6.20	1.38
7.00	1.36
8.22	1.34

Products

CaF₂ blanks and windows for IR applications

Diameter/Width	12.7-101.6 +/-0.2 mm
Thickness/length	2-12 +/-0.2 mm
Surface quality	As-cut, 80/50, 60/40 per MIL-0-13830
Wedge	< 5'
Clear aperture	90%

CaF₂ optical prisms for IR applications

Length/Width	7-25.4 +/-0.1 mm
Thickness/length	7-25.4 +/-0.1 mm
Surface quality	80/50, 60/40 per MIL-0-13830
Corner tolerance	+/-10"
Total surface error	λ / 2

CaF₂ optical wedges for IR applications

Diameter/Width	12.7-101.6 +/-0.2 mm
Thickness/length	2-10 +/-0.1 mm
Surface quality	80/50, 60/40 per MIL-0-13830
Wedge tolerance	+/- 3'
Total surface error	λ / 2
Clear aperture	90%

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