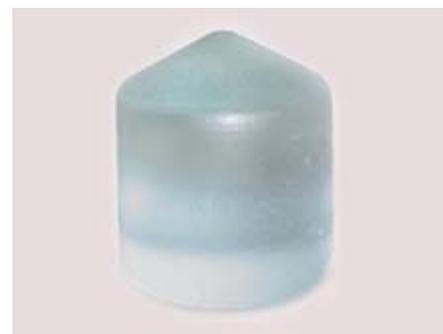


## CALCIUM FLUORIDE CRYSTALS [ CaF2 ]

Calcium Fluoride is used for optical windows, lenses and prisms in the 0.15μm - 9μm range. This material has found wide use in high power laser optics due to its low absorption. Polished surfaces are stable and will last several years under normal conditions. Due to its low refractive index, Calcium Fluoride can be used without anti-reflection coating. Calcium fluoride is grown by vacuum Stockbarger technique. Material for IR use is grown using naturally mined fluorite, in large quantities at relatively low cost.



### Specification

Transmission Range	0.13 to 10μm
Refractive Index	1.39908 at 5μm
Reflection Loss	5.4% at 5μm [ 2 surfaces ]
Restrahlen Peak	35μm
dn/dT	-10.6 × 10 <sup>-6</sup> / °C
Density	3.18 g/cm <sup>3</sup>
Melting Point	1360 °C
Thermal Conductivity	9.71W/ [ m K ]
Thermal Expansion	18.85 × 10 <sup>-6</sup> / °C
Hardness	Knoop 158.3 kg/mm <sup>2</sup> [ 100 ]
Specific Heat Capacity	854J/ [ kg K ]
Dielectric Constant	6.76 at 1MHz
Young's Modulus [ E ]	75.8 GPa
Shear Modulus [ G ]	33.77 GPa
Bulk Modulus [ K ]	82.71 GPa
Elastic Coefficients	C11=164MPa C12=53Mpa C44=33.7MPa
Apparent Elastic Limit	36.54 MPa
Poisson Ratio	0.26