

Calcium Fluoride(CaF₂)

SPECIFICATIONS



Calcium fluoride (CaF₂) crystals grown by ICC with high hardness, strong resistance to mechanical shock and thermal shock is good transmittance in UV, visible and infrared fields. It is widely used in scientific and technological fields such as lasers, infrared optics, UV optics and high-energy detectors. Calcium fluoride with high transmittance and low fluorescence radiation is an ideal material for UV photodetectors, UV lasers and UV optical systems.

OPTICAL

Transmission Range, microns	0.13-10
Transmittance, at 0.193-7.87 μm	>94%
Reflection Loss at 5μm(Double-sided)	5.4%
Absorption Coefficient at 2.7 μm	7.8×10 ⁻⁴
Refractive Index n _d	1.43384
n _e	1.43492
Abbe number v _d	95.23
v _e	94.69

THERMAL

Melting Point [°C]	1420
Thermal Conductivity, [W/(m×K)]	9.71@293K
Thermal Expansion [10 ⁻⁶ /K]	18.5@273K
Specific Heat Capacity [J/(kg×K)]	854

MECHANICAL

Density[g/cm ³]	3.18
Dielectric Constant	6.76 @ 1 MHz
Young's Modulus (E) [GPa]	75.8
Shear Modulus(G) [GPa]	33.77
Bulk modulus(K) [GPa]	82.71
Poisson Coefficient	0.26
Mohs Hardness	4.0

CHEMICAL

Molecular Weight / g/mol	78.08
Solubility in water at 20°C	0.0016
Crystal Structure	Cubic
Cleavage Planes, direction	<111>

REFRACTIVE INDEX

Wavelength(um)	Refractive Index
0.2	1.4951
0.5	1.4365
1.0	1.4289
2.0	1.4239
3.0	1.4179
4.0	1.4096
5.0	1.3990
6.0	1.3856
7.0	1.3693
8.0	1.3498
9.0	1.3268
10.0	1.3002
11.0	1.2676
12.0	1.2299

