

Lithium Fluoride Vacuum UV Grade (LiF)

Custom sizes and specifications are available

CRYSTALLOGRAPHIC

Syngony	Cubic
Symmetry Class	m3m
Lattice Constants, Angstrom	a=4.026 c=a
Cleavability	(100), perfect

OPTICAL

Refractive Index at n_e	1.3931
Refractive Index $n_F - n_C$	0.0040
Thermal Coefficient of Refractive Index at 3.39 microns for +/- 60 deg C	$(-1.25)...(-1.51) \times 10^{-5}$
Transmission Range, microns	0.12-6.5

THERMAL

Thermal Linear Expansion, deg C ⁻¹ for +/- 60 deg C	$(28.1...34.8) \times 10^{-6}$
Thermal Conductivity, W/(m•deg C) at 38 deg C	14.2
Specific Heat Capacity, J/(kg•deg C)	1.5617×10^3
Melting Point, deg C	870

MECHANICAL

Density, g/cm ³ at 20 deg C	2.60
Mohs Hardness	4
Vickers Microhardness, Pa	98×10^7
Constants of Elastic Compliance, Pa ⁻¹	$S_{11}=11.32 \times 10^{-12}$ $S_{12}=-3.06 \times 10^{-12}$ $S_{44}=15.91 \times 10^{-12}$

Young Modulus (E), Pa in <100> direction	8.84×10^{10}
in <111> direction	14.22×10^{10}
Shear Modulus (G), Pa in <100> direction	4.09×10^{10}
in <111> direction	6.29×10^{10}
Poisson Ratio	0.270

CHEMICAL

Molecular Weight	25.94
Solubility in water, gram/100 cm ³	0.27
in acids	soluble

Refr. Index n vs. Wavelength λ

WAVELENGTH, MICRONS	REFRACTIVE INDEX
0.2	1.439
0.5	1.3943
1.0	1.3871
2.0	1.3788
3.0	1.3666
4.0	1.3494
5.0	1.3266
6.0	1.2975
7.0	1.262
8.0	1.218
9.0	1.165
10.0	1.101

Internal Transmittance $\tau_i(\lambda)$ vs. Wavelength λ

WAVELENGTH, MICRONS	INTERNAL TRANSMITTANCE
0.2	0.90
0.5	0.98
1.0	0.97
3.0	0.97
5.0	0.88
6.0	0.65
7.0	0.14

Transmittance $\tau(\lambda)$ vs. Wavelength λ

