

Fe:LiNbO₃ CRYSTALS

Description

Lithium Niobate crystals doped with iron Fe:LiNbO₃ are an excellent photorefractive material with high electro-optical coefficients and high photorefractive sensitivity and diffraction efficiency without an applied electric field. The crystals have wide applications in phase conjugation and holographic recording. ALTECHNA offers crystals with different Fe doping concentration, dimensions and optical processing requirements.

Standard specifications

Transparency range	0.35 – 5.5 μm
Crystal symmetry	Trigonal, 3m
Density	4.64 g/cm ³
Mohs hardness	5
Melting point	1255
Refractive index at $\lambda = 632.8 \text{ nm}$	$n_o = 2.29, n_e = 2.2$
Electrooptical Coefficient $\lambda = 632.8 \text{ nm}$	$r_{33} = 32 \text{ pm/V}$ at, $r_{22} = 6.8 \text{ pm/V}$ at, $r_{31} = 10 \text{ pm/V}$ at
Dielectric constant (low frequency)	$\epsilon_{11} = 85, \epsilon_{33} = 30$



Features

- A wide variety of applications, including optical laser device for writing a three dimensional hologram in the single crystal
- High phase conjugation efficiency
- Multi-domain structure
- High diffraction efficiency

Miscellaneous

- Custom design production is also available
- Custom dopant levels available
- Mass production available 500 pieces per month

Catalog Items

Aperture, mm	Thickness, mm	Dopant level, mol. % Fe ₂ O ₃	Coatings S1/S2	Orientation	Product ID	Price
10x10	0.5	0.05*	AR@ 532nm**	90deg cut (X-cut, Y-cut)***	4-FLN-1010-1	Call us
	1				4-FLN-1010-2	Call us
	5				4-FLN-1010-3	Call us
	10				4-FLN-1010-4	Call us
20x20	0.5				4-FLN-2020-1	Call us
	1				4-FLN-2020-2	Call us

* - Dopant levels Fe₂O₃ – 0.005% and 0.1% available. Call us.

** - Other wavelengths available. Call us.

*** - Z-cut and 45 deg cut available. Call us.

* Contact ALTECHNA for larger quantity pricing info@altechna.com

If you do not find suitable crystal for your application please contact us and we guaranty to provide a solution for you

Related products and accessories

- Low Loss HR Mirrors (page 54)



- BSO crystals (page 168)



- SBN Crystals (page 166)

