Fe:LiNbO$_3$ crystal is a kind of common used photorefractive materials with large electro-optic (E-O) coefficients, high photorefractive sensitivity and diffraction efficiency. Compared with BaTiO$_3$ series photorefractive crystals, it has some outstanding advantages such as easy operation and storage, low cost and large size availability, which make it more suitable for volume fabrication and practical devices. Therefore, Fe:LiNbO$_3$ crystal has a wide range applications: Holographic Storage; Bragg Grating, Dynamic Holography; Optical Memories; Optical Phase Conjugation and Neutral Networks.

All the Fe:LiNbO$_3$ crystal devices from us are completely poled and strain & scatter free. They are of low variation of refractive indices and high extinction ratio. Special processing techniques are implemented to meet OEM and R&D requirements.

**Basic Properties**

- **Crystal Structure:** Trigonal, space group R$_{3c}$
- **Cell Parameters:** $a = 0.5148$, $c = 13.863$, $Z = 6$
- **Melting Point:** 1255°C
- **Curie Point:** 1140°C
- **Mohs Hardness:** 5
- **Density:** 4.64 g/cm$^3$
- **Color:** Colorless to Brown
- **Solubility:** Insoluble in H$_2$O

**Standard Specifications**

- **Composition:** Congruent
- **Available Size:** 40x40x40 mm
- **Iron Level:** 0.005 to 0.20 mol%
- **Orientations:** $0^\circ$, $45^\circ$, C-cut or others directions
- **Surface Quality (Scratch/Dig):** 40/20 or better
- **Surface flatness:** $\lambda/4$ @ 633 nm or better
- **Orientation:** $\pm 0.5^\circ$
- **Chamfer:** $< 0.2$ mm @ $45^\circ$
- **Parallelism:** better than 30 arc sec

**Note:** Other specifications and AR coatings can be provided upon request.