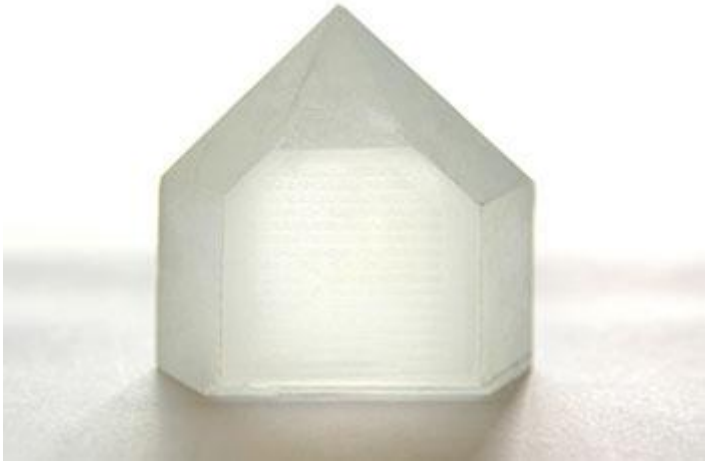
# LiIO3 crystals - Lithium Iodate Crystal

Lithium Iodate or LilO3 crystal is an uniaxial **nonlinear crystal** with high nonlinear optical coefficients and wide transparency range of 0.5μ m to 5.0μ m. It is used to frequency double the low and medium power Ti:Sapphire, Alexandrite, Cr:LiSrAlF6 and Cr:LiCaAlF6 lasers. It is also used for frequency doubling and tripling of Nd:YAG lasers and auto-correlators for measuring ultra-short pulse width. In some cases, it is used in the parametric oscillation to get continuous tunable laser at 0.9μ m to 1.2μ m.

The **LiIO3 crystals** is highly hygroscopic, it is suggested to put in a dry environment. LiTaO3 is a low damaging threshold crystals, it is not suitable for high power laser applications.



## SPECIFICATIONS

| Specifications | |
|---|---|
| Materials | LiIO3 crystals, optical grade |
| Dimension tolerance | +/-0.1mm |
| Surface Quality | 10/5 S/D |
| Parallelism | < 10 arc seconds |
| Flatness | < Lambda/8@633nm |
| Perpendicularity | < 5 arc minutes |
| Transmitting wavefront distortion | < Lambda/8@633nm |
| Aperture | >90% |
| Chamfer | 0.2mmx45degree |
| Chips | <0.1mm |
| Coating | AR, BBAR or P-coating |



Addr. Room A1031, Boke Mansion, No.9 Xiyuan Road, Xihu District, Hangzhou 310030, China.
Tel:+86-571-87920630 Fax:+86-571-87603342 E-mail:sales@shalomeo.com Home:www.shalomeo.com

## Basic Properties

| Physical properties of LiIO3 crystals | |
|---|---|
| Transmission Range | 0.5 to 5.0 渭 m |
| Crystal structure | hexagonal |
| Point group | 6 |
| Density, g/cm$^3$ | 4.487 |
| Mohs hardness | 3.5-4.0 |
| Absorption at 1064nm, cm$^{-1}$ | <0.05 |
| Refractive indices at 1064nm | $n_o$=1.8571, $n_e$=1.7165 |
| at 800nm | $n_o$=1.8676, $n_e$=1.7245 |
| at 532nm | $n_o$=1.8982, $n_e$=1.7480 |
| Phase matching range for Type1 SHG, nm | 570-4000 |
| Acceptances for Type 1 SHG at 1064nm, mrad | |
| Angular, mradxcm | 0.77 |
| Spectral, cm$^{-1}$xcm | 12.74 |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