

Lithium Iodate (LiIO₃)

Introduction

LiIO₃ crystal is one of the oldest commercial NLO crystals. For the high NLO coefficient. LiIO₃ is used for frequency-doubling, tripling and mixing of low and medium power lasers.

CASTECH provides large size of LiIO₃ crystals with high optical homogeneity. They may be as-cut and polished. And sealed housing with AR-coated windows is also available.

Basic Properties

Point Group	6
Transparency Range	300-5000nm
Nonlinear Coefficient	$d_{15} = -5.5 \times 10^{-12} \text{m/V}$
Refractive Index	negative uniaxial $n_o = 1.8571, n_e = 1.7165$ ($\lambda = 1064 \text{nm}$)
Sellmeier Equations: (λ in μm)	
$n_o^2 = 3415716 + 0047031 / (\lambda^2 - 0.035306) - 0008801\lambda^2$ $n_e^2 = 2918692 + 0035145 / (\lambda^2 - 0.028224) - 0003641\lambda^2$	

Notes to the user of LiIO₃

- LiIO₃ is highly hygroscopic. Please keep it in a dry environment, and sealed housing is recommended. CASTECH provide both polishing and sealed housing for LiIO₃ crystal.
- LiIO₃ is not recommended for high power applications, because of the low damage threshold.

Crystal Specifications

- Transmitting wavefront distortion: less than $\lambda/4$ @ 633 nm
- Dimension tolerance: (W \pm 0.2 mm) x (H \pm 0.2 mm) x (L + 0.5 /-0.2mm)
- Clear aperture: > 90% central area
- Flatness: $\lambda/4$ @ 633 nm
- Scratch/Dig code: 20/10 to MIL-PRF-13830B
- Parallelism: better than 20 arc seconds
- Perpendicularity: 5 arc minutes
- Angle tolerance: < $\pm 0.5^\circ$
- Quality Warranty Period: one year under proper use.

公司简介 INTRODUCTION



CASTECH INC.

(CASTECH) was founded by Fujian Institute of Research on the Structure of Matter, Chinese Academy of Science in 1988. Thanks to long term interactive partnership with the leaders in laser system manufacturing industry and ongoing efforts of our employees, we have established the largest mass production lines in the world for LBO, BBO, Nd:YVO₄ and TGG crystals, and implemented a complete quality control system for our products.

CASTECH is now a worldwide leading supplier of nonlinear optical crystals, laser crystals, precision optics, and a variety of laser components. In CASTECH, there are Flux/Czochralski/Water Solution/Bridgman Crystal Growth production lines, Crystal Orientation and Dicing workshop, Optical Polishing workshop and Optical Coating workshop with IBS, IAD, MS and EB coating technique. Our commitments are backed by our huge manufacturing capacity.

CASTECH's quality system is IATF 16949:2016 and ISO 9001:2015 certified. We have established a complete system for outgoing parts inspection. Our optical testing equipments include Zygo Interferometers, Agilent Cary 7000, Perkin-Elmer Lambda 950, Nikon Microscope, Photo-Thermal Common-Path Interferometers, Zygo Newview 8300, Taylor Hobson LupoSan 260, Extinction Ratio Measurement and Ellipsometers. These equipments along with many others, ensure that we comply with all specifications for our products.

Today, over 60% of CASTECH's products are exported to USA, Japan, Europe and other Asia Market. We have established a global sales network. We have set up our agencies and distributors in the main industrial countries and districts.

Our mission is to deliver the best products and solutions to our customers in photonics industry, and help them to realize their full potential in business. Here at CASTECH, we value comity, integrity, honesty, and innovation.