

LiTaO₃ Crystal

Introduction

LiTaO₃ is an E-O crystal widely used for E-O devices, due to its good optical NLO and E-O properties, as well as high damage threshold. **CASTECH** supplies high quality LiTaO₃ boules and wafers with the following specifications for standard applications. We can also offer other specifications upon request:

Basic Properties of LiTaO₃

Crystal Structure	Trigonal, Space group R3c, Point group 3m
Cell Parameters	a=5.154 Å , c=13.781 Å
Melting Point	1650°C
Curie Temperature	607°C
Mohs Hardness	5.5
Density	7.46g/cm ³
Dielectric Constants	ϵ_{11}/ϵ_0 : 51.7 ϵ_{33}/ϵ_0 : 44.5
Elastic Stiffness Coefficients	C_{11}^E : 2.33 (x 10 ¹¹ N/m ²) C_{33}^E : 2.77 (x 10 ¹¹ N/m ²)
Piezoelectric Strain Constants	d_{22} : 2.4 (x 10 ⁻¹¹ C/N) d_{33} : 0.8 (x 10 ⁻¹¹ C/N)
Transmission Range	400 - 4500nm
Electro-optical Coefficients	r_{33} =30.4pm/V
Refractive Index at 632.8nm	n_o =2.176, n_e =2.180

Typical Specifications

Type	Boule		Wafer	
	Specifications			
Diameter	φ3"		φ3"	φ4"
Length or Thickness	≤100mm	nm	0.35-0.5 mm	
Orientation	127.86°Y, 64°Y, 135°Y, X, Y, Z, and other cut			
Ref. Flat Orientation	X, Y			
Ref. Flat Length	22±2mm	2mm	22 ± 2mm	32 ± 2mm
Front Side Polishing	Mirror polished 5-15 Å			
Back Side Lapping	0.3-1.0 μm			
Flatness (μm)	≤ 15			
Bow (μm)	≤ 25			

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.